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Kindergarten social assistive robot (KinSAR) for children’s geometric thinking and metacognitive development in preschool education: a pilot study.

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Summary: Kindergarten social assistive robot (KindSAR) is an innovative tool promoting children’s development through social interaction. This pilot study demonstrates how KindSAR can assist educational staff in the teaching of geometric thinking and in promoting the metacognitive development by engaging children in interactive play activities. Children’s reactions and performances were video recorded for analysis. Most children exhibited positive interaction with the robot and a high level of enjoyment. Our results showed that their performances on geometric thinking and metacognitive tasks were improved while they “played” with the robot. To measure children’s learning we have developed a novel measure of cognitive learning, which we call “velocity of learning”. This study demonstrates the feasibility and expected benefits of incorporating KindSAR in preschool education.

Classification: U71 G21

Keywords: architecture for educational technology system; elementary education; intelligent tutoring systems; interactive learning environments; interdisciplinary projects

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