

Thought Control Research and Roamer

Research claiming that imagination and perception share the same neural networks adds support to the idea of "Playing Turtle". In a report in Scientific American, Jason Goldman's article on "Thought Control" reports on the latest psychological research. Playing Turtle was one of Seymour Papert's key ideas. Technically called "body synconicity" the idea is that we project our imagination onto a physical object. In the case of Roamer students can imagine how they can make it move and turn, what sequence of actions it needs to follow and what those actions mean. The power of the physical robot is that children can connect their imaginations to programming and mathematical ideas and then test those ideas. Goldman reports on research that adds to the creditability of this view.

University of Oslo cognitive neuroscientists Bruno Laeng and Unni Sulutvedt conducted a series of experiments which imply that imagination and perception may rely on a similar set of neural processes. "Imagination is usually thought of as a private and subjective experience, which is not accompanied by strongly felt or visible physiological changes," Laeng says. But the new research, published in Psychological Science, challenge that idea. "Its like when you picture a dimly lit restaurant, your brain and body respond, at least to some degree, as if you were in that restaurant". This is the mental mechanism expressed in the ERA Principle of Embodiment - essentially that children learn by intentional and meaningful interactions which link their mental processes to the physical Roamer.

References

Jason G. Goldman, (March 2014) Thought Control, [Scientific American Volume 310. Issue 3](#)

Bruno Laeng and Unni Sulutvedt, (Jan 10, 2014) The Eye Pupil Adjusts to Imaginary Light, Psychological Science.

Dave Catlin and Mike Blamires (2010) The Principles of Educational Robotic Applications (ERA): A framework for understanding and developing educational robots and their activities. Proceedings of Constructionism 2010, Paris.