

Marilena Mademtzi

Doctoral Researcher

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Current Status

2nd year PhD Student full-time

Research Topic

The Use of Innovative Technology to Promote Movement and Self-regulation Skills in Children with Autism Spectrum Condition in School-Based environments: The Pictogram Room Paradigm.

Research Summary

Pictogram Room uses Augmented Reality to help children with Autism Spectrum Condition to develop a range of skills, creating a virtual space with highly customisable educational activities. Through a system of camera-projector, and through the recognition of movement, it is possible to reproduce the image of the player himself/herself augmenting with a series of graphic and musical elements that will guide the learning process. The overall design of the study is the quasi-experimental design. Various assessments take place pre- and post-test to identify potential changes in 9 children's body awareness, vestibular movement and self-regulation skills. The children's teachers will contribute to the creation of guidelines, regarding the use of the software, for other teachers, professionals and parents. (Pictogram Room: Driven by Fundación Orange and developed by the Autism and Learning Difficulties Group of the Robotics Institute of the University of Valencia, Spain, in collaboration with three European universities: Weimar,

Birmingham and Universitat Pompeu Fabra-free to download at: <http://www.pictogramas.org/> (<http://www.pictogramas.org/>).

Research Interests

- Impact of Pictogram Room on children's with autism self-regulation skills, vestibular and proprioceptive movement
- Use and design of Technology Enhanced Learning Environments for the development of children's with autism social communication, play and movement skills.
- School teachers' training on the use of different technologies to help their students with autism to develop a range of skills.

Research projects

SHAPE ([/research/activity/education/acer/research/shape/index.aspx](http://www.birmingham.ac.uk/research/activity/education/acer/research/shape/index.aspx)): Shaping the future of technology use in the classroom, ESRC Follow on funding (May 2012- June 2013).

ECHOES ([/research/activity/education/acer/research/echos.aspx](http://www.birmingham.ac.uk/research/activity/education/acer/research/echos.aspx)): Improving children's social interaction through exploratory learning in a multimodal environment, EPSRC/ESRC, TLRP-TEL funded (October- December 2011).

Research Supervisors

Dr Karen Guldberg ([/staff/profiles/education/guldberg-karen.aspx](http://www.birmingham.ac.uk/staff/profiles/education/guldberg-karen.aspx)) and **Dr Kerstin Wittmeyer** ([/staff/profiles/education/wittmeyer-kerstin.aspx](http://www.birmingham.ac.uk/staff/profiles/education/wittmeyer-kerstin.aspx))

Funding

Onassis Foundation, Greece

Membership of Research and Professional Organisations

National Autistic Society
Autism West Midlands

Publications

Guldberg, K., Keay-Bright, W., Parsons, S. Porayska-Pomsta, K., Kosyvaki, L., Mademtzi, M. and Ewart-Dean, B. 'Shaping the Future of Technology Use in the Classroom', *Autism Europe*, 26th-28th September 2013. (<http://www.autismcongress2013.eu>) Hungarian Autistic Society, Budapest, Hungary.

Guldberg, K., Kosyvaki, L., Porayska-Pomsta, K., Parsons, S., Mademtzi, M. and Keay-Bright, W. 'The future Use of Technologies in the Classroom: Participatory Research and E-inclusion as Tools to Promote Creativity at Schools', *European Conference on Educational Research*, 10th-13th September 2013, Bahçeşehir University, Istanbul, Turkey.

Avramides, K., Bernardini, S. Foster, M.E., Frauenberger, C., Kosyvaki, L. and Mademtzi, M. (2012) 'State-of-the-art in TEL to support social communication skill development in children with autism: A multi-disciplinary review', *International Journal of Technology Enhanced Learning*, 4:359-372. DOI: [10.1504/IJTEL.2012.051819](https://doi.org/10.1504/IJTEL.2012.051819) (<http://dx.doi.org/10.1504/IJTEL.2012.051819>)

Mademtzi, M., Guldberg, K. and Kosyvaki, L. 'ECHOES II: A technology-enhanced learning environment for improving children's with autism joint attention' (in Greek), 3rd *Conference on Autism Spectrum Disorders: Therapeutic-Educational Interventions*, 22nd -23rd October 2010, Mesologi, Greece.

Karapetsas, A., Zygouris, N., Tsiotsika, M., Mademtzi, M. and Dalianis, T. The use of the CDI in diagnosing emotional disorder in children and adolescents, *12th Conference of Hellenic Psychological Association*, 14th -17th May, 2009, Volos, Greece.

Tsiotsika, M., Zygouris, N., Mademtzi, M., Dalianis, T. and Karapetsas, A. The use of RCMAS in diagnosing anxiety disorder in children and adolescents, *12th Conference of Hellenic Psychological Association*, 14th-17th May, 2009, Volos, Greece.

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