MeEmo: An Autism Destroying Avatar, Year Two

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Individuals affected by ASD are characterized be a marked different in the ability to communicate and form relationships. New technologies for communication and learning have been used to improve social communication for children with ASD. Interactive, virtual environments (VEs) are three- dimensional, real-time, computer-based representations of reality that simulate the real or imagined world. The therapeutic benefits of using mixed reality VEs have been established with some baseline studies, but the treatments are extremely expensive and depend on the subject forming a relationship with the avatar in the VE. Last year, the focus of the project was to develop a low cost diagnostic test to identify subjects that are likely to benefit from the more expensive mixed-reality treatments. A device independent platform was developed in a gaming environment to measure the subject's ability to recognize and respond to the emotional state of the virtual character, called a Meemo. This year, the focus of the project was human testing of the avatar. Subjects were tested two times a week, for a total of 10 weeks. While subjects interacted with the avatar, eye-tracking was also used to capture where the focus of the subjects eyes were. It was found that subjects learned to respond to the VE's emotional cues presented through changes in facial expressions and were able to recognize changes in emotion and take appropriate actions to prevent the situation from getting worse. There was also a noticeable increase in "eye contact" between the subject and the VE. Early anecdotal observations also indicate that there is some degree of transference between the virtual world and the real world.