CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

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Project Number

34962

Project Title

How to Detect the Undetectable: An Empirical Study of a New Microexpression Training for Adolescents

Abstract

Objectives/Goals

There are currently no trainings designed for adolescents to improve their ability to recognize facial emotions which can impact their social relations and communication. The goal was to innovate a new microexpression training for adolescents, and improve their emotion recognition ability, emotional intelligence (EI), and social skills (SS).

Methods/Materials

A new microexpression training was developed based on Ekman#s METT training. It included a presentation of basic concepts and facial muscles,a presentation of the 7 universal emotions in slow motion (8 young actors were trained on how to exhibit the 7 universal emotions), and information on lie detection. A pilot study ensured that the training was comprehensible, and the microexpressions were presented at a reasonable speed. The main study used a nonequivalent control group pretest-posttest design, and included 132 adolescents. In the treatment condition, the participants completed the pretests (emotion recognition, EI and SS) before and after the training which took about 30-45 min. In the control condition, the participants completed the same measures, but did not have any training. Emotion recognition was measured using 14 fast-motion pictures of 7 emotions. Each picture consisted of a 1 second neutral face, a 60 millisecond emotion, and a 1 second neutral face. The final score was the number of correct answers out of 14.

Results

Emotion recognition increased significantly after the training (Mpretest = 5.61; Mpostest = 9.83), $t(83) = -14.52$, $p < .05$. There was no difference between pretest and posttest for the control group (M = 5.81 and 6.06, $t(47) = -0.71$, $p = 0.48$). Neither EI nor SS improved after the training, however 2 questions that dealt with the understanding of others# emotions showed a significant improvement. Girls (M= 6.27) had stronger emotion recognition than boys (M=5.29), ($t(129) = 2.70$, $p < .05$), however this difference disappeared after the training (M= 8.10 and M= 8.98).

Conclusions/Discussion

My new training improved adolescents# emotion recognition, but not their EI or SS which may take months to improve. The slight increase from the pretest to posttest in the control condition may be due to pretest sensitization. Girls# ability to recognize emotions better may be due to gender stereotypes and social roles.

Summary Statement

An innovative microexpression training for adolescents was found to be effective in improving their emotion recognition, emotional intelligence and social skills.

Help Received

I took a training made by Prof. Ekman, received feedback from Prof. Matsumoto and Prof. Miller, learned statistics from my mom, and had guidance from my science teacher.

Preliminary