

1. Abstract

Introduction

Children, like adults, can have mixed emotions. For example, they can be sad and happy at the same time. Studies have identified comprehension of mixed emotions from the age of 6 years onwards. Comprehension abilities improve with age (Denham et al., 2002). A study that documented comprehension of mixed emotions in kindergarten aged children found first signs of comprehension of mixed emotions and also documented a connection between the comprehending of mixed emotions at this age and social emotional development. The results of a study that examined developmental differences in the comprehending and expression of mixed emotions in five- to twelve-year-olds (Larsen & Friedman, 2007) support the need to train young children and acquaint them with the existence of mixed emotions. Studies show that the emotion comprehension is a skill that can be taught. (Alfieri et al., 2008; James & Gross, 1999). This study focuses on teaching kindergarten-aged children mixed emotion comprehension and their ability to transfer knowledge about emotions to emotions they were not taught about and their ability to comprehend hidden emotions.

Method

children aged 4 to 6 years from three kindergartens in Tiberias (which is on the socio-economic level of 4 on a scale from 1-10, placing it low on the socio-economic scale compared to other Israeli communities) participated in the study. Research variables were examined face-to-face by means of tablets. The study included questionnaires for the kindergarten teachers: the pre - intervention Mabatim questionnaire that deals with emotional aspects, taken from the Mabatim booklet (Goldhirsch et al., 2006) and an adjustment to kindergarten questionnaire (ASQ Adaptation Strategies Questionnaire for kindergarte, Brzezinska et al., 2013, translated and adapted for digital use) assessed before and after intervention.

The study was done over a period of 26 weeks.

Week 1: Pre-intervention test, including TEC – Test of Emotion Comprehension, translated and adapted for digital use (Pons & Harris, 2000); SMERT – Single and Mixed Emotion Representational Task; a questionnaire developed for this research, Hidden Emotion Task and the DCCS - Dimensional Change Card Sort test that aims to examine managerial functions like cognitive flexibility. Kindergarten teachers received the Mabatim and ASQ questionnaires.

Week 3-12: Evry three weeks the test group received 4 mixed emotion training sessions that included emotions like: happiness, sadness, angry and fear without surprise. The control group received 4 reading comprehension questionnaires at the same time-points.

Week 16-14: 3 post-intervention tests structured like the pre-intervention test with emotion stories interchanged in each questionnaire and the addition of questions with "surprise" as a

mixed emotion together with other emotions, in order to examine whether transference of mixed emotions to combinations that had not yet been learned had taken place. Between weeks 24 to 26, the kindergarten teachers filled out the ASQ for all children in their class to examine social-emotional changes among those children who had participated in the experiment versus the control group.

Results

Research results show that children in the experimental group demonstrated higher achievements in the ASQ filled out by their kindergarten teachers after intervention and test questioners (with a significant difference in the creative adaptation factor). No significant difference emerged in emotion comprehension between the groups one month post training. There was a significant improvement in mixed emotion and hidden emotion comprehension in a questionnaire given two months after intervention. In the test questionnaire, given 3 months post-intervention, it can be clearly seen that the control group succeeded to close gaps in mixed-emotion comprehension, but to questions that relate to the transfer emotion "surprise".

When correlations within the experimental group and the control group were examined, we found a correlation between the creative adaptation factor in the ASQ questionnaire and questions about mixed emotions with surprise, $r(32)=0.35$, $p=.049$ (transference questions).

Discussion

Research results show that children who participated in the study developed emotional expression ability that includes the expression of mixed emotions. Moreover, they used their acquired knowledge in coping with new situations by better transference and adaptation in kindergarten. Research results show that it is very important to teach young children with a method based on repetition and use of images and contents close to the world of the children. The results affirm the need for a follow-up study that will address the development of emotion comprehension in kindergarten-aged children. Based on the results we recommend to the Ministry of Education to offer this intervention program to kindergartens. Additionally, there should be a discussion of simple and mixed emotions in kindergartens.