Recognition of facial expressions by socially and emotionally disturbed children

Janice E. Bollman
La Roche College

Follow this and additional works at: https://scholar.utc.edu/mps
Part of the Psychology Commons

Recommended Citation
Available at: https://scholar.utc.edu/mps/vol2/iss2/5

This article is brought to you for free and open access by the Journals, Magazines, and Newsletters at UTC Scholar. It has been accepted for inclusion in Modern Psychological Studies by an authorized editor of UTC Scholar. For more information, please contact scholar@utc.edu.
Recognition of Facial Expressions by Socially and Emotionally Disturbed Children
Janice E. Bollman
La Roche College

Abstract
Twenty-two children, 18 boys and 4 girls, classified as socially and emotionally disturbed (SED) were compared with 19 children, 6 boys and 13 girls, without social and emotional disturbances on their ability to match pictures depicting six basic emotions (as identified by Ekman and Friesen, 1975) which were accompanied by a story about that emotion. The children were matched by chronological age ranging from 8.1 to 12.4 years of age. A difference between the two groups was noted and was significant at the .04 level for a one-tailed test. A Tukey test of pairwise comparisons was also performed and a strong difference between happy and sad was noted for the partial-hospitalization SED group. The normal group showed a difference among many of the emotions. The results of this study support research showing a significant difference between normal children and those with various mental handicaps in their ability to correctly recognize six basic facial expressions.

Being able to recognize and respond to the facial expressions of others is an essential social skill of all human beings. Of all the nonverbal communications, the face is the most complex and complicated to read and comprehend. The face is a multi-message system that conveys messages about emotion, mood, attitudes, character, attractiveness, intelligence, age, sex, and race (Ekman & Friesen, 1975; Scherer & Ekman, 1982).

Recognizing and correctly responding to facial expressions is difficult even for a normal child although it becomes easier with maturation (Camras et al., 1990; During & McMahon, 1991; Missaghi-Lakshman & Whissell, 1991; Profyt & Whissell, 1991; Whissell & Nicholson, 1991). Children classified as normal are able to understand and respond to complex facial expressions. However, a child experiencing difficulties in correctly receiving and responding to facial expressions and their underlying meanings may thus have difficulties that result in communication failure. Such failure indeed has a wide range of implications (Adams & Markham, 1991; Baron-Cohen, 1991; Camras et al., 1990; Camras et al., 1988; During & McMahon, 1991; Izard, 1990; McAlpine, Kendall & Singh, 1991).

Charles Darwin was the first to recognize "the universality of the expressions of a limited set of basic emotions" (Izard, 1990, p. 487). Ekman and Friesen (1975) have determined that there are universal expressions recognized by all or many cultures, i.e., happy, sad, frightened, angry, disgusted, and surprised. These researchers also found that facial expressions can be accurately and consistently labeled. By isolating the minute details of expressions, a better understanding of the complex components can be obtained (Camras et al., 1988; Ekman & Friesen, 1975; Missaghi-Lakshman & Whissell, 1991).

Reading the emotional expressions of others is not a skill that is taught to children (Ekman & Friesen, 1975). Through trial and error and observation a child develops the skills to communicate both in sending and receiving emotional signals. Some children are more able to read and understand facial expressions than others. Other children have problems identifying these expressions. A wide variety of problems may arise if a person incorrectly interprets another person's expressions and responds inappropriately.

Researchers (Adams & Markham, 1991; Baron-Cohen, 1991; McAlpine, Kendall, & Singh, 1991) have conducted experiments with children and adolescents diagnosed with various mental problems such as mental retardation and autism and their difficulty in relating socially to their peers and to others. Results of these studies have shown these children are less accurate in their ability to correctly identify universal facial expressions as compared to
normal children. This misunderstanding of facial expressions may be a leading cause in the difficulty of mentally handicapped people to successfully enter into intimate relationships with others. Those with autism are the most blatant example of this difficulty in entering a close relationship with another person (Baron-Cohen, 1991).

Other populations of interest are children who suffer with less severe mental handicaps such as learning disabilities, socially and emotionally disturbed children (SED), and abused children. Many of these children are able to function to some degree in society but have obvious difficulties relating to others. Specifically, SED children have been brought to the attention of the mental health profession because of their inability to relate properly to the world around them. It is possible that some of their difficulty stems from the inability to recognize facial expressions. Misreading facial expressions can further inhibit communication thus exacerbating many of the child's existing problems.

This study compares the ability of children who have been diagnosed as socially and emotionally disturbed to identify facial expressions with children classified as normal (who have not been diagnosed as SED or placed in an SED classroom). I hypothesize that the SED children will score significantly lower than children of normal mental development on the task of recognition of facial expressions.

Method

Subjects

Two SED groups were used. The first consisted of 10 children ranging in age from 8.5 to 12.3 years with a mean age of 10.6 years. There were 7 boys and 3 girls. The children attended a partial hospitalization program at a mental health center where they received classroom instruction and counseling. Written permission from a parent or guardian for participation in educational research is on file at the mental health center. The second SED group consisted of 12 children ranging in age from 8.5 to 12.3 years with a mean age of 10.4 years. There were 11 boys and 1 girl. The children attended a local elementary school where they spent at least 50% of their day in a resource room. Written permission from a parent or guardian for participation in educational research is on file at the elementary school. The severity of the disability for each child was not available to the researcher for either group of children.

The normal group of children consisted of 19 children ranging in age from 8.1 to 12.6 years with a mean age of 9.5 years. There were 6 boys and 13 girls. The children attended a local Catholic elementary school. A written permission slip was signed by a parent or guardian and was returned to the researcher.

Materials

Six photocopied pictures depicting "primary expressions" identified by Ekman and Friesen (1975) were used for this study. The photocopies were placed on 4 x 6 index cards. The six expressions were happy, surprised, frightened, sad, disgusted, and angry. The pictures were initially placed randomly in two rows of three; however, after placement through random selection, the children were presented the pictures in the same order.

While viewing the pictures, the children listened to a tape recording of six simple stories created specifically for this experiment by the researcher describing each of the emotions (see Appendix A).

Procedure

Subjects were individually tested in vacant rooms at three locations. The contents of each room varied, but all contained at least one desk and two chairs. Only the examiner and the child were present for each session.

The six pictures were placed on the desk in front of each child. Before starting the tape recorder each child was informed that all instructions would be given to him/her on the tape recording. The taped instructions were as follows:

"Here in front of you are some pictures of faces I want you to
look at. Some of them are angry, disgusted, surprised, happy, frightened, and sad. You will hear a story about each picture. At the end of the story, you will be told to point to the picture that best fits the person in the story. Do you have any questions? Okay, let's begin."

If at any time the child had a question, he/she would indicate this and the tape would be stopped and the question would be answered, if possible. Each child was also assured that he/she could terminate the session at any time.

Each child listened to the instructions and the stories for each picture. The tape was paused at the end of each story if the child had not already indicated his/her choice. After a selection of a picture the child was given an encouraging statement (e.g., "good" or "okay") before going on to the next story.

Results

The potential range of scores for both groups was 0 for the minimum score and 6 for the maximum number correct. The group of SED children at the partial hospitalization center scored the lowest overall with a mean score of 3.60. The range of scores was from 1 correct answer to 6 correct answers. The group of SED children mainstreamed at the elementary school had a mean score of 4.67 and a range of scores from 2 correct answers to 6 correct answers. The mean score at the Catholic elementary school was 4.68 with a range of scores from 2 correct answers to 6 correct answers.

Due to the lack of difference in scores between the normal children and the partially mainstreamed SED children, subsequent analysis will primarily focus on the partially hospitalized SED children and the normal children.

A t-test was performed between the partial-hospitalization SED and the normal group and the test was significant at the .04 level using a one-tailed test, $t(27) = -1.85, p < .05$. The subjects' ability to identify specific emotions in the two groups was measured and compared. Happiness was correctly identified by 100% of both groups. Disgust was the second most recognizable emotion by both groups. Fifty percent of the partially hospitalized SED children correctly responded and 89% of the normal group.

Recognition of the remaining emotions varied for both groups. The normal group recognized angry equally as well as disgust, 89%; sad was recognized correctly by 74% and surprised and frightened were recognized with only 58% accuracy. For the partial-hospitalized group surprise, frightened, and angry were recognized equally by 60% of the children. The emotion sad was the least recognized by this group with only 30% correctly identifying it.

In order to determine if there was a significance within group comparison between any of the emotions, the Tukey test of pairwise comparisons was performed. The partial-hospitalization SED group showed a strong difference between happy and sad (see Table 1). The normal

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukey Test for Partial-Hospitalization SED Group</td>
</tr>
<tr>
<td>Proportion of Correct Responses</td>
</tr>
<tr>
<td>Happy</td>
</tr>
<tr>
<td>Surprised</td>
</tr>
<tr>
<td>Frightened</td>
</tr>
<tr>
<td>Sad</td>
</tr>
<tr>
<td>Disgusted</td>
</tr>
<tr>
<td>Anger</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukey Test for Normal Group</td>
</tr>
<tr>
<td>Proportion of correct responses</td>
</tr>
<tr>
<td>Happy</td>
</tr>
<tr>
<td>Surprised</td>
</tr>
<tr>
<td>Frightened</td>
</tr>
<tr>
<td>Sad</td>
</tr>
<tr>
<td>Disgusted</td>
</tr>
<tr>
<td>Anger</td>
</tr>
</tbody>
</table>
FACIAL EXPRESSIONS

The results of this experiment support other research (Adams & Markham, 1991; Camras, et al., 1988; During & McMahon, 1991; McAlpine, Kendall, & Singh, 1991) showing a significant difference between normal children and those with various mental handicaps in their ability to correctly recognize six basic facial expressions. The partially hospitalized SED children have serious problems identifying facial expressions, other than happy ones. This difficulty may result in more severe problems in communication.

Interestingly, over 75% of the partially hospitalized SED children had been physically or sexually abused (Director of children's partial program, local mental health center, March 19, 1993.). However, specific information was unavailable due to confidentiality concerns. The results of this study support the findings of the Camras, et al. studies (1988; 1990) of abused children and their poor performance on identifying the facial expressions of their mothers and others. These abused children "may lack a potentially critical source of environmental information about the morphology and meaning of emotional facial expressions" (Camras, et al., 1988, p. 780). The abused child may receive mixed signals from the abusive parent and be unable to predict what emotion the parent is truly feeling. This confusion may be learned and transferred into other social settings. The child may have learned not to look at certain expressions such as anger. This may cause a lack of understanding of the angry facial expression or other similar emotions.

The normal group of children was slightly younger than both groups of SED children. This may have caused a lower scoring of the normal group as other research has noted that recognition improves with maturity (Missaghi-Lakshman & Whissell, 1991; Proft & Whissell, 1991; Whissell & Nicholson, 1991). The maturity level of this group may also have resulted in the multiple differences among the various emotions noted by the Tukey test. Further research with equally matched age groups is required to verify the maturation hypothesis. It is possible that a stronger significance could be found with more equally age-matched groups.

The SED children who were mainstreamed into a local elementary school scored as well as the normal group of children. In addition to age, this slight difference may be a result of these SED children being able to function better in a normal school setting. Their problems are not so severe as to require them to be removed completely from this setting as the partially hospitalized SED children have been. These SED children were able to better identify the facial expressions at a base level. Problems may arise for these children when the signals and expressions are more complex.

The less accurately recognized emotions were different for the normal group and the SED groups. The normal children evaluated failed to recognize both "surprised" and "frightened" in equal percentages. The low score for the emotion "surprised" may be due to confusion on whether it is a happy surprise or a frightening surprise. The interpretation of the individual child may have caused the poor response.

Both SED groups had the poorest response on the sad emotional expression. The partially hospitalized group scored only 30% for this emotion. This poor recognition may be due to an attempt not to show these emotions at home or in a school setting. An abusive home may be the most threatening situation in which to show sadness and these children may attempt to conceal this emotion. The children from an abusive home may therefore be less able to recognize this emotional expression. "Sadness is a passive, not active, feeling" (Ekman and
Friesen, 1975, p. 114) and this may have caused problems for the SED children in correctly identifying the expression. It may be the child's mental illness itself that prevents the understanding and responding to the emotional signals sent by others.

This and other studies have shown that poor recognition of even the basic emotions occur in children with various mental handicaps. Whether the lack of ability to recognize facial expressions causes many of their social problems or vice versa, it is important that the educators and caregivers of these children be aware that this lack of understanding exists. Therefore, it may be important for SED and other mentally handicapped children to receive intense training in recognizing and understanding facial expressions. Without this first step of understanding these children appear destined to suffer in their social relations. Further, children who relate well with their peers will also do better in other areas of their lives.

Further research with larger populations will need to be conducted in order to isolate where the misunderstanding of facial expressions arise. Testing of the mainstreamed SED children on more complicated facial expressions will provide a clearer picture of areas in which these children are experiencing the most difficulty and what situations that may be most problematic.

References


synonyms for seven key emotions. *Perceptual and Motor Skills, 72*, 1107-1111.

Author Notes

I wish to thank Marie Cini for all of her help and support in the statistical portions of this paper as well as her many suggestions on improvements in the content itself.

I also would like to thank the members of my committee, Dr. Barbara Herrington, Dr. Mary Anne McCarthy, Kris Rosenberg and Dr. Michael Brannigan for their comments and guidance throughout this project.

Reprints of this article can be obtained by writing to Janice Bollman, P.O. Box 371, Ingomar, PA 15127.

Appendix A

Happy story: "If a person was given a present that they had always wanted for their birthday, they would be glad. The person would be very happy. Can you point to the person that is happy?"

Surprise story: "A person is walking down the street and suddenly a large red ball falls out of the sky and bounces at the person's feet. The person would be surprised. Can you point to the person that is surprised?"

Frightened story: "A person has a dream that they are being chased by a monster. In the dream, they would be afraid. Can you point to the picture of the person that is frightened?"

Sad story: "If a person finds out that their best friend is moving to a city far away and they would not be able to see their friend again, this person would be very sad. Can you point to the person who is sad?"

Disgusted story: "If a person was walking in the woods and started to smell a skunk, the person would be disgusted. Can you point to the person that is disgusted?"

Angry story: "A person finds out that a friend has taken their favorite toy and now it is broken. This person would be very angry. Can you point to the person that is angry?"