

EFFECTS OF COLLABORATIVE EXPRESSION USING LEGO® BLOCKS, ON SOCIAL SKILLS AND TRUST

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In this study, we investigated the psychological effects of an activity for collaborative expression using LEGO® blocks. In particular, we focused on the issues of social skills and trust in 39 high school students. Each participant was asked to answer questionnaires concerning social skills and trust before and after the activity. The results showed that, although trust in oneself did not increase significantly, both social skills and trust in others increased considerably with the help of the activity.

Keywords: LEGO® blocks, social skills, trust, art therapy, collaborative expression.

Although blocks were originally developed as toys for children, they are now used as a medium of communication and a material for expression in art therapy. With regard to the use of blocks during individual art therapy, we examined previous fundamental and case studies. Irie and Ohmori (1991) describe how blocks were used as a means of communication between mute children and therapists in therapy sessions. During these sessions, the child's expressions gradually increased in both content and creativity, reducing their muteness. Kato

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(2006) compared the effects of block creations using scores gained on the Profile of Mood States (POMS; McNair, Lorr, & Droppelman, 1981) before and after the creation. He found that scores on the POMS after the block technique were significantly lower on the five scales of tension-anxiety, depression-dejection, anger-hostility, fatigue-inertia, and confusion-bewilderment, than were the scores before the block technique was utilized. As shown in these studies, block creation positively affects moods and might be a useful material in art therapy.

Blocks can be used as a material for expression in individual and group art therapy situations. LeGoff (2004) used blocks as a communication tool among a group of autistic children and showed that blocks facilitated their social skills. Kato, Takaki, Katsurada, Hamada, and Wu (2010) conducted an activity using blocks to foster collaborative expression among a cross-cultural communication group comprising students from several countries. The activity not only facilitated group member communication but also positively affected their moods. From this, it is possible to see how blocks are a useful medium for communication that can be used in several areas, such as education and psychotherapy. However, even though these practical studies are important for future application, the number of statistical studies is insufficient. It is, therefore, necessary to examine further the evidence about the psychological effects of block creation.

Collaborative expression can be applied to a range of participants, such as autistic children and international students (LeGoff, 2004; Kato et al., 2010), and it may affect certain psychological aspects, for example, social skills or mood states.

In this study we examined the effects of collaborative expression using blocks, focusing on the psychological aspects of social skills, trust in others, and trust in oneself, during the process of the activity. We focused on high school students as participants and proposed the following hypothesis.

Social skills, trust in others, and trust in oneself will significantly increase through collaborative expression based on block creation.

Method

Participants

Thirty-nine Japanese high school students participated in the study (6 males and 33 females; all participants were aged either 16 or 17 years). The collaborative expression activity was held as part of a psychology class in a university summer school. The participants were randomly divided into groups of three or four.

Materials

LEGO®'s green plastic plates (50cm²) and several types of blocks were provided for each group. Among the basic blocks provided were standard cube-shaped

blocks in the following colors: red, blue, green, yellow, white, black, and brown. We also offered a variety of differently shaped blocks such as animals, plants, wheels, windows, and doors. LEGO® sets generally contain human figures and, for the study, a number of male and female figures were provided for each group. The figures were detailed with uniforms, clothes, and belongings, such as tools and bags, that corresponded with a variety of occupations, such as office workers, carpenters, and police officers.

Procedure

The participants were asked to express collaboratively with other group members anything they desired on the group's plate using LEGO® blocks and figures. They were also asked to answer questionnaires about their social skills and trust before and after the activity. For this we used the 18-item Kikuchi Scale of Social Skills (KiSS-18; Kikuchi, 1988), a scale used to measure a participant's general social skills using one factor. Items include: "I can join in conversation with others smoothly" and "I can express my feeling to others".

We also used a scale developed by Amagai (1995) to measure trust. It includes 24 items that are divided into three factors: trust for others, trust in oneself, and distrust. In the present study, we used only the trust for others (6 items) and trust in oneself (8 items) factors. Both scales have been widely used in studies in Japan and their reliability and validity have previously been confirmed by other researchers. Therefore, we used the original items and factors of these scales in this study.

Results

The scores for social skills, trust in others, and trust in oneself, before and after the collaborative expression, were compared by using a paired *t* test. Comparison of the questionnaire scores before and after the activity showed that the scores for social skills, $t(38) = -4.16$, $p < .01$ and trust in others, $t(38) = -2.28$, $p < .05$, were significantly higher after the activity than before it. However, the difference in trust in oneself before and after the activity was not significant $t(38) = -0.48$, *ns*. Table 1 contains the scores for social skills and trust before and after the activity.

Table 1. Scores for Social Skills and Trust Before and After the Activity

	Before		After	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Social skills	59.9	9.7	65.2	11.3**
Trust in others	34.3	7.1	35.3	7.6*
Trust in oneself	24.1	5.4	24.6	5.6

Note: ** $p < .01$, * $p < .05$.

Discussion

The hypothesis of this study was partially supported by the results gained. Although the scores for social skills and trust in others increased, the score of trust in oneself was unchanged. Social skills significantly increased through the experience of collaborative expression. In this study, although many participants were meeting each other for the first time, they communicated easily using blocks as a medium. Social skills are important for forming positive relationships with others and in this study the experience of collaborative expression had a positive effect on participants.

Being able to join in conversations and express feelings to others, which are aspects of social skills measured by the KiSS-18 (Kikuchi, 1988), are very important in interpersonal communication, and sometimes it might be difficult to use these skills appropriately in a strange situation or when meeting a person for the first time. Moreover, certain participants might have been nervous or anxious before the collaborative expression. To exercise social skills appropriately, it is necessary for an individual to adapt to the group and its members. Kato (2006) showed that block expression significantly reduces tension and anxiety, thereby relaxing participants, helping them adapt to the group, and increasing their social skills.

Trust in others was found to significantly increase after the activity. It is assumed that the participants were interested in meeting the other members of their group and came to know each other through the collaboration. As a result of the facilitation of positive regard for others through collaborative expression and conversation, trust in others increased following the activity. In contrast with this, the score of trust in oneself was not significantly changed through the activity. Trust in oneself is a personal, psychological factor and is strongly concerned with the foundation of one's personality. It cannot be changed in the short term, because an increase in trust in oneself requires engagement in continuous introspection. As in the theory of art therapy or counseling, a continuous therapeutic process is important to facilitate insight into oneself. In this study, the collaborative expression was the first and only time for participants to engage in this activity. Future researchers could examine the effects of continuous practice to investigate additional applications. Also, in order to expand the application of collaborative block creation, practical and statistical studies involving several types of participants and psychological aspects are necessary.

The results gained in this study show that collaborative block creation has positive effects on social skills and trust in others, and can be used in education, therapy, and cross-cultural groups as a medium of communication. For further application, the multiple effects of this method should be examined.

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