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# Improving Social Skills through Collaborative Artwork and Group Activity

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## Abstract

In this chapter, we introduce the framework and practice of collaborative artwork and group activity. In particular, we focus on the collaborative block creation method and show its psychological evidence. The first section introduces the theoretical background underlying collaborative work and overviews recent studies concerning social skills, especially from psychological perspective. The second section introduces this study, in which we demonstrated the effectiveness of collaborative LEGO® block creation work as a medium of communication in group therapy and investigated the effects of fostering communication, especially for developing social skills and trust. The third section focuses on interpersonal relations. We examined the psychological effect of collaborative block creation from the perspective of *Ibasho*, a Japanese term for one's whereabouts or a place of our own. Next, we show a case study of collaborative LEGO block creation for Japanese adolescents with autism spectrum disorder (ASD). Finally, we introduce a new type of group approach in the area of student counseling.

**Keywords:** social skills, art therapy, group approach, adolescents, LEGO blocks

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## 1. Introduction

Several group approaches have been developed to facilitate individuals' social skills in the psychology domain. Collaborative art session is one of the effective mediums for developing social skills. Some fundamental studies and studies based on clinical settings have explored collaborative art session as a medium for developing social skills. The first section overviews these evidences from previous studies.

Art-based social skills training is useful for students with maladaptation or for those facing difficulty in social communication. For example, Walsh [1] proposed a short-term intervention in social skills training for adolescent students with social-emotional development delays. Most group members showed some improvements in social skills. Chin et al. [2] provided an innovative combination of treatment—art therapy, social skills training, and video therapy—for dropout adolescents. The results suggested that the combination significantly elevated their feelings of self-worth and self-esteem. In clinical situation, art-based program is employed for clients with brain disorder. Agnihotri et al. [3] examined the effect of art-based programs for adolescents with childhood brain disorder. They revealed that intervention participants showed improvements with regard to pragmatic communication skills and social and participation goals. Furthermore, Agnihotri et al. [4] showed the feasibility and effectiveness of a theater skills training program to facilitate social skills and participation for adolescents with childhood brain disorder.

Art-based activity is effective in the area of social skills training for people with developmental disorders. Autism spectrum disorder (ASD) is one of the core symptoms of developmental disorders. According to the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, a central feature of ASD is a persistent deficit in both social communication and interaction. Another trait involves restricted and repetitive patterns of behavior, interests, or activities. Activities involving group approaches help facilitate social skills in children and adolescents with ASD. Martin [5] categorized art therapy approaches used for clients with ASD. The categories include object relations [6], developmental approaches [7], developmental/behavioral approaches [5], and psychotherapy [8, 9]. Schweizer, Knorth, and Spreen [10] reviewed case studies based on the Context and Outcomes in Art Therapy (COAT) model. The results indicated that art therapy may add to a more flexible and relaxed attitude, a better self-image, and improved communicative and learning skills in children with ASD. Moreover, Gazeas [11] reviewed the outcomes of art therapy from previous studies. Gazeas [11] found that art therapy improves the ability to relate, socialize, and improve joint attention skills of individuals with ASD. Individual case studies have supplied evidences of increasing social skills. For example, Emery [7] presented the art therapy treatment of a boy diagnosed with autism without mental retardation. The case study explored the value of art therapy interventions in the young boy's development and his ability to relate to others. The boy's growth is highlighted by discussing three of his drawings that reflect his progress in developing object constancy. Durrani [12] conducted the case study and proposed that an art therapy intervention may facilitate sensory modulation and self-regulation. This would help lower anxiety levels, aid attachment to the therapist, and improve social engagement in general. Schleien et al. [13] organized a group of children with autism and nondisabled peers at a children's museum; they participated in monthly art activities. The results of this investigation supported the use of inclusive art classes as a means for promoting social interactions directed toward children with autism by their nondisabled peers. Kempe [14] applied drama to teach social skills in special school setting and suggested that it can be a powerful learning medium for children with ASD.

Several materials such as painting and drama are used as mediums for communication. Collaborative block creation has been found to be effective in addressing deficient social skills. The approach used by LeGoff [15], known as "LEGO® therapy," has been extensively

used in groups with children diagnosed with ASD. The participants are assigned roles of “engineer,” “supplier,” and “builder,” and they are encouraged to work together to solve a particular task. The engineer is asked to give instructions to other group members. The supplier is in charge of choosing appropriate blocks and providing them to the group. Finally, the builder follows instructions and constructs the figures. Efficient collaboration and division of roles facilitate both verbal and nonverbal communication. In addition, the participants are more likely to share their creativity and problem-solving skills with others throughout the process, thereby enhancing their social skills.

The “block technique” [16] has also been used in group therapy settings. The technique was originally developed as a tool for individual psychotherapy. Using blocks and figures, the clients were given the tools to express anything that came to their minds based on the structures of both sand play and collage therapy. The therapists observed the creative process and noted that it had certain therapeutic effects. This framework was also found to be useful in group therapy. In our study, we used this technique with groups and divided participants into groups of 3 and 5. The facilitator observed each group, and the emotional expression process is involved. First, we provided a green LEGO® plate (which combined four pieces of 25 × 25 cm plates) for the group expression task. Then, the facilitator instructed participants to create anything they wanted while collaborating with other group members.

After the task was completed, the members and the facilitator discussed why members chose to express themselves in the ways they did. Although this technique was originally developed as a medium for individual psychotherapy and art therapy, this technique was effective in the group setting. Considering this positive outcome, we decided to use this method with a group of adolescents previously diagnosed with developmental disorders such as ASD. Further, we introduce the fundamental study of the collaborative block creation and the case study in the following sections.

## **2. Effects of collaborative block creation on social skills and trust**

In this study, we examined the effects of collaborative block creation from the perspective of social skills and trust. The evidence is based on Kato et al. [17]. We focused on the psychological aspects of social skills, trust in others, and trust in oneself, which were examined during the activity. It is important to examine the effect using control group when we apply new technique in the clinical settings. The participants of this study were healthy high school students without any diagnosis of developmental and mental disorders. Our hypothesis proposed that social skills, trust in others, and trust in oneself would significantly increase through collaborative expression through block creation.

### **2.1. Participants**

Thirty-nine Japanese high school students participated in this study (6 males and 33 females; all participants were either 16 or 17 years old), and they were randomly divided into groups of 3 or 4.

## 2.2. Materials

Green LEGO® plastic plates (50 × 50 cm) and several types of blocks were provided to each group. We prepared the cube-shaped blocks (in red, blue, green, yellow, white, black, and brown colors) and specific blocks such as animals, plants, wheels, windows, and doors. The human figures and its accessories were also prepared.

## 2.3. Procedure

The collaborative block creation was held as part of a psychology class in a university summer school. The participants expressed anything they desired collaboratively with other group members using LEGO® blocks and figures on the plate. They were asked to answer the questionnaires about social skills and trust before and after the activity.

## 2.4. Measures

### 2.4.1. Social skills

The 18-item Kikuchi Scale of Social Skills (KiSS-18; [18]) was used to measure social skills. It measures a participant's general social skills and includes items such as "I can join in conversation with others smoothly" and "I can express my feeling to others."

### 2.4.2. Trust

Trust scale developed by Amagai [19] is used as an index of the trust of the participants, and it includes 24 items. The items are divided into three subgroups of trust for others, trust in oneself, and distrust. In this study, we only used the trust for others (six items) and trust in oneself (eight items).

## 2.5. Results and discussion

The scores of each scale before and after the block creation were compared. The result showed that the 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. In contrast, the score of trust in oneself was not changed significantly ( $t(38) = -0.48, ns$ ). **Table 1** showed scores of social skills and trust before and after the activity.

The collaborative block creation facilitated social skills. Social skills include many aspects of skills, and the abilities to join in conversations and express feelings to others are necessary in communication with others. Many of the participants were meeting for the first time, and they are not familiar to each other; certain participants may be anxious before the activity. It is considered to be difficult to use appropriate social skills in a new or strange situation without any help. The block expression reduced participants' tension or anxiety, and it might be a good medium to help them to adapt to the group.

Trusting other people in the group was found to increase significantly after the activity. We assume that the participants were interested in meeting all the other members of

	Before		After		
	Mean	SD	Mean	SD	
Social skills	59.9	9.7	65.2	11.3	**
Trust for others	34.3	7.1	35.3	7.6	*
Trust in oneself	24.1	5.4	24.6	5.6	

\*\*p < .01.  
 \*p < .05.

**Table 1.** Scores of social skills and trust before and after the activity.

their group and that they came to know each other through a collaborative exercise. The facilitation of positive regard for others through collaborative expression and conversation resulted in participants' trust in others increasing after activity completion. In contrast, scores for trust in oneself did not change significantly following activity completion. Trust in oneself is a personal, psychological construct and is strongly connected to the foundation of one's personality. It cannot be changed in the short term because it cannot significantly increase without continuous introspection. As with the theory of art therapy or counseling, a continuous therapeutic process is sometimes necessary to facilitate self-insight. In this study, collaborative expression was the first and only opportunity for participants to engage in this activity. Future research should examine the effects of block creation over a period of time to investigate additional clinical applications. In addition, expanding the range of applications for collaborative block creation will require practical and statistical studies including several types of participants and assessments of various psychological aspects.

The results obtained in this study show that collaborative block creation has positive effects on participants' social skills and trust in others. It also suggests that collaborative block creation could be useful in education, therapy, and cross-cultural group settings as a medium for communication. In future studies, the multiple effects of this method should be examined.

### 3. Collaborative block construction on the sense of acceptance

The effect of collaborative block creation especially focused on the sense of acceptance is overviewed in this section based on Kato et al. [20]. Examining the effects of group cooperation and group therapy are important research topics in educational and clinical psychology. For example, the self-categorization theory was developed (Turner et al. [21]), and it indicated that collaborative group work could improve social identity. It also promotes reciprocal positive evaluations, trust among group members, and sense of acceptance by others. The role of peer groups and gender in adolescents' task values and physical activity were examined (Yli-Piipari et al. [22]), and the study mentioned that it was important to investigate the effect of group dynamics on adolescents as a research



topic. The results also reinforced the importance of peer group membership as a determinant of future activity.

Blocks are a useful medium for self-expression not only in individual art therapy but also in group settings as mentioned before. LeGoff [15] found that collaborative problem-solving activity using blocks was useful to developing social skills of autistic children. In addition, both social skills and trust were increased through the collaborative block creation (Kato et al. [16]) as shown in the previous section.

The Japanese term “Ibasho” means “whereabouts or a place of my own” literally, and it is one of the key terms of Japanese psychological studies. In the psychological context, the sense of Ibasho is defined as the sense of being accepted by others unconditionally (Ishimoto [23]). Norisada [24] developed the scale to measure the sense, and it includes four subscales: sense of authenticity, sense of role, sense of perceived acceptance, and sense of relief. In addition, the friendship styles are also influenced by the sense of Ibasho. For example, school adjustment in Japanese female adolescents is related with the respectful friendships (Ishimoto et al. [25]). As these previous studies showed, the sense of Ibasho concerns the cognition of individuals’ relationship with others. Therefore, it is hypothesized that the experience of engaging collaborative block increases the sense of Ibasho.

The participants of this study were also healthy students without any developmental and mental disorders. The purpose of the study is to examine the effect of the collaborative creation work using healthy samples and show useful evidences for the future application.

### 3.1. Method

#### 3.1.1. Participants

Twenty Japanese female university students participated in this study (Mage = 20.15 years, SD = 0.37). They were randomly divided into groups of between three and four people.

#### 3.1.2. Materials

We provided green LEGO® plastic building plates (50 × 50 cm) and several types of blocks and figures to each group. The detail of the material is same as the previous section.

### 3.2. Measures

#### 3.2.1. Sense of Ibasho

The general sense of Ibasho scale for university students [26] is used. The scale is developed based on the sense of Ibasho scale for adolescents [24] and includes four subscales: sense of authenticity, sense of role, sense of perceived acceptance, and sense of relief. It also measures the general sense of Ibasho as the sum of the four subscales. It consists

of 20 items such as “I have a place where I can express myself as I am,” “I am useful to someone,” and “I have a person who accepts me unconditionally,” and they are rated from 1 (disagree) to 5 (agree).

### 3.3. Procedure

The collaborative block creation was held in psychology class in the university, and the activity was held in 60 minutes. Participants were asked to express anything they desire on the plate using blocks and figures with group members. They were also asked to answer the questionnaire before and after the activity.

### 3.4. Results and discussion

The scores of the sense of Ibasho scale before and after the collaborative creation were compared. First, the general sense of Ibasho (the sum of the four subscales) score after the activity was significantly higher than the score before the activity ( $t(19) = -1.81, p < .10$ ). Second, the score of subscales before and after the work was compared to examine which aspect of the sense of Ibasho was influenced by the collaborative work. Result of the analysis showed that the score of the sense of role was promoted significantly after the work ( $t(19) = -3.18, p < .01$ ). There was no significant difference in any other subscales (the sense of authenticity ( $t(19) = 0.71, ns$ ), sense of perceived acceptance ( $t(19) = -1.14, ns$ ), and sense of relief ( $t(19) = 0.66, ns$ )). **Table 2** shows scores of Ibasho before and after a collaborative task.

The results showed that the general sense of Ibasho was increased after the collaborative block creation. In addition, especially sense of role was promoted through the work more than other subscales such as sense of authenticity, sense of perceived acceptance, and sense of relief.

When we express something or tackle a task with others, such as a block construction task, the role of each participant is important. Participants perceive their own role through the work, and it may facilitate their sense of role. For instance, self-confidence of participants was enhanced when their idea or proposal was accepted by other group members. This process may improve their sense of role.

Self-disclosure and the ability to understand one another are important in friendship of adolescents [27]. This is also necessary for establishing roles in peer groups and maintains good relationships with others. Participants of the present study expressed their idea to other members, and it promotes their self-disclosure. In addition, they could know the way of thinking of other members at the same time. These interactions may promote the skill of sympathy and understanding one another. The sense of role is also deeply connected with social skills. As shown in the previous section, the collaborative block creation improves social skills, and it might support the establishment of roles among the participants.



	Before		After		
	Mean	SD	Mean	SD	
General sense of Ibasho	4.04	0.69	4.15	0.73	*
Sense of authenticity	4.29	0.83	4.23	0.91	
Sense of role	3.49	0.90	3.87	0.86	**
Sense of perceived acceptance	4.04	0.89	4.11	0.91	
Sense of relief	4.60	0.48	4.55	0.45	
*p < .10.					
**p < .01.					

**Table 2.** Scores of Ibasho before and after a collaborative task.

In contrast, we could not find significant differences in the sense of authenticity, perceived acceptance, and relief. However, the sense of role concerns with social skills, the other factors are more individual factors, and they might relate with the personality of each participant. Therefore, it is considered that they did not change in short time. It is important to examine the effect of the continuous collaborative activity over a longer period of time in future studies.

**3.5. Conclusion**

We examined the effect of collaborative block creation on the sense of Ibasho in this study. The result showed that the collaborative activity increased the general sense of Ibasho and sense of role especially. The findings indicated that the activity can be a useful medium for communication in group therapy or social skills training program. However, this finding is meaningful for future clinical application, and we need to interpret the result of the study carefully because the result is based on the limited setting of healthy samples. The study that includes the view point of both genders, generation, and clinical samples are necessary in the future.

**4. Collaborative block creation for ASD adolescents**

This section will provide examples of the clinical applications of collaborative block creation based on evidence mentioned in previous sections of this chapter. While this method is useful with several clinical subpopulations and ages, we specifically focused on the application of this approach for groups of adolescents with developmental disorders, particularly ASD.

As LeGoff [15] demonstrated, toy blocks are very attractive to children and act as useful materials in the evaluation of children with developmental disorders. His “LEGO® therapy”

method is well structured and effective as a social skills training program for them. However, the “block technique” approach in this study allows for more freedom in expression than other approaches; furthermore, it can be applied in a group therapy setting for children with developmental disorders. We tested the collaborative creation approach with a group of ASD children. We created small groups of three to five children that met with one of the facilitators. Based on Kato et al. [28] study, the effect of the group is reviewed in this section.

#### 4.1. Participants

Six Japanese adolescents with ASD joined the study. Three were junior high school students, and the others were high school students. All participants were male, diagnosed based on DSM, and categorized in the high-functioning ASD.

#### 4.2. Procedure

The study was conducted in a social skills training group for ASD students. The group contain six times program, and it includes several social skills training activities. The collaborative block creation was held in the second time of the group. Participants were divided into two groups. One group consisted of the junior high school students and the other of the high school students. As shown in the previous section, the participants were asked to express themselves collaboratively with the other group members and encouraged to build anything they wanted on the group’s plate using LEGO® blocks and figures. Graduate students majoring in clinical psychology joined each group as facilitators. The creation was completed within 1 hour. Participants responded on the trust scale [19]. This scale originally included three subscales: “trust for oneself,” “trust for others,” and “distrust.” We used “trust for oneself” (six items) and “trust for others” (eight items) in this study. After the entire process was finished, group members presented their works to each other and shared their experience.

#### 4.3. Results and discussion

The scores of each item of the trust scale were compared before and after the group work. The scores from after the work were categorized into three groups as “increased,” “decreased,” and “not changed.” The percentages of these three groups were compared to “trust for oneself” and “trust for others.” The results showed that there were significant differences both in “trust for oneself” ( $\chi^2(2) = 13.50, p < .01$ ) and “trust for others” ( $\chi^2(2) = 19.63, p < .01$ ). Multiple comparisons showed that “not changed” was larger than “decreased” ( $p < .05$ ) in “trust for oneself.” In addition, “increased” and “not changed” were larger than “decreased” ( $p < .05$ ) in “trust for others.”

The total number of participants who increased and decreased the scores of the items in the trust scale was counted. As a result, the score increased in the majority of the participants regarding the items “I am worthy of trust” and “I can trust myself” on the subscale “trust for oneself.” In addition, there was an increase in “I can keep trust with others if we face problems” and “I trust others based on my experience.” There were no decreasing items for the majority of the participants.

However, the increased scores did not rise significantly; the category of “not changed” was higher than “decreased” in “trust for oneself.” This means that the collaborative block creation does not have negative effects in regard to their trust for themselves. Participants presented their image on the base plate, and the facilitator watched the process. This secure framework of the block technique contributed to the result. The scores were particularly increased in the items “I am worthy of trust” and “I can trust myself.” These items directly represent self-trust in simple words more than other items, and the increase here might reflect participants’ experience of the collaborative work. The previous research has shown that ASD students have low self-esteem or distrust because of continuous experiences that show them that they are unable to establish relationships smoothly with others. The collaborative block creation is useful in assisting with secondary issues such as low self-esteem and distrust.

In contrast, the category of “increased” was higher than “decreased” in “trust for others.” This means the collaborative work increased students’ trust for other group members. The previous section examined the effect of collaborative block creation on Japanese high school students and showed that the work increased feelings of safety and a sense of acceptance of others. Participants in the present study had the same experience, thus explaining the increased trust for other members. In particular, the scores were increased in the items “I can keep trust with others if we face problems” and “I trust others based on my experience.” Collaborative creation facilitated participants’ communication, and this positive process affected their trust for others. Therefore, blocks are familiar toys for participants and play the role of a medium for nonverbal communication.

The facilitators were responsible for implementing the collaborative creation approach. Although the participants tended to convey a very narrow range of expressions at the beginning, they gradually started to communicate and collaborate more with each other. This process proved effective in helping the participants increase their social skills, self-efficacy, and satisfaction. We are currently preparing to test this approach with a group that includes children with several different developmental disorders, such as ASD and ADHD. Although ASD children prefer to be alone and stay in their own world, ADHD children are often interested in many different things and actively communicate with others. The social differences between these two groups of children may represent a good opportunity for the participants to communicate with each other. Of course, the facilitators will have to closely monitor the group dynamics closely, maintain a good atmosphere, and secure the framework of the approach in order to effectively facilitate the communication.

## 5. Group approach for ASD adolescents in student counseling

In the area of student counseling at universities, the support for students with developmental disorders, including ASD, is an important mission. ASD students often have talents in specific fields, such as an expert knowledge of mathematics. However, while they have special talents in some areas, it is difficult for them to use these talents fully because they have difficulty with social skills. Communication skills are necessary for professors or laboratory members so that

they can use their talents effectively at universities. However, many ASD students are not good at smoothly establishing relationships with others. Such difficulties sometimes cause maladaptation to the university, and this problem is aggravated after the students drop out. Individual student counseling deals with the problem, and until recently it was the only way to help ASD students. Recently, attention has begun to focus on therapy involving a group approach for students with developmental disorders. This section will introduce a case of a new group approach for university students, based on the work of Kato and Yura [29].

### **5.1. Details of the group**

In regard to student counseling, when many students with ASD attend counseling, their main problem is relationships with others. However, while individual counseling can reduce their daily stress, preventive approaches are also necessary. This case study attempted some group approaches from this perspective. One of the groups in the study was named "Collector's Club." Any student from the university could join the group, both students with ASD and students with no such diagnosis. The group was announced by poster and website at the university. In some cases, a counselor would refer students to the group. Such collaboration between individual counseling and the group is important. The main aim of this group was to support improving the social skills of participants through their collections or hobbies. While ASD students have interesting collections and hobbies, it is not always easy for them to find friends with whom to share these interests while at the university. The group was planned in order to provide an opportunity for students to present their hobbies and a chance to make new friends. The group was held in a classroom at the university after class. Every session was approximately 90 minutes long and held once a month. A clinical psychologist and psychiatrist joined the group as facilitators. In each session, one participant took on the role of presenter and introduced his or her own hobby or collection.

### **5.2. Case report**

This section summarizes one of the cases from the Collector's Club. The participant was a male university student with high-functioning ASD (diagnosed based on DSM), majoring in science. He had difficulty forming good relationships with laboratory members, and his professor referred him to the group. He participated in the group with a total of 15 times. He was nervous when he joined the group the first time. He said "Many people talking together looks like fun. However, it is difficult for me to join them; today's experience is exciting" (#2). He brought a book for the club, but he hesitated to show it to other members. The facilitator talked to him and asked about the book. Then, he gradually talked about it (#5). He brought a photo album for the other members. These were his favorite photos, which he collected using the Internet, and he introduced each photo to the other members (#7). He brought a leaflet of the event to the university and presented on it. It was impressive that he voluntarily checked out the event and was able to share his interests with others (#8). He began to talk to other members in a loud voice and said "I want to try things I'm not good at" (#11). He again brought some event leaflets. Other members took an interest in them, and they talked to him. While in the past he had only been able to communicate with other members if the

facilitator mediated their communication, he could now talk to the other members without the facilitator's support (#13). He showed some origami books to the other members. One of the members was interested in origami too; they talked together about origami works while looking at the books (#15).

### 5.3. Discussion

When he first began to attend the group, he seemed to be nervous. It should be noted that he felt conflict because it was the first time he had joined a group with unfamiliar people. For example, in #2, he had a conflict between two emotions: the desire to communicate with other members and a lack of competency concerning his own social skills. His comment "Many people talking together looks like fun. However, it is difficult for me to join them; today's experience is exciting" strongly represents his conflict. The "medium of hobby" had an important role in communication in his case. Origami and photos functioned as a medium for communication. However, if he had had no "medium of hobby," it would have been difficult for him to establish relationships with other members. Common interests or hobbies can thus be a useful medium to facilitate communication. It is important for the facilitator or counselor to notice the medium and share their interest in verbal and nonverbal ways.

This student's positive approach to others could be clearly seen in #7 and #8. He introduced his interest to other members through photos or events. His comment "I want to try things I'm not good at" in #11 represents his growth and confidence. Ultimately, he was able to communicate with other members without the facilitators' support. The experience of the group facilitated his confidence and reduced hesitance.

The good thing about the Collector's Club was that various students could gather with common hobbies. Participants could join the group regardless of age, gender, major, or diagnosis. The role of facilitators was important for the success in their communication. However, it should be noted that the facilitators were not supposed to disturb the natural communication of participants. While directive support was necessary on some occasions, a nondirective approach was more fundamental. The main roles of the facilitator were to watch carefully over the group dynamics and to support the participants where necessary.

Shimoyama et al. [30] suggested that roles within student counseling should resemble "support," "education," and "community." These points were also important in this case study's group approach. First, we focused on the viewpoint of "support." Participants of the group had several difficulties with communication and social skills. In addition, as secondary problems, they lacked confidence or self-esteem. A secure base was necessary for them, and the group served within that role. The facilitator collaborated with the students' tutors to participate with the group as necessary. This collaboration could supply a new realm of support for each participant. Second, regarding "education," the uniqueness of the program featured the curiosity and interests of the participants; however, sometimes, their interests were highly specific, such as stamp collecting or animation. For example, the participant in the case study described above was interested in origami. At first, many of the other members did not have the same level of interest in origami, but after he introduced the details and good points of origami, they gradually became more interested in it. The discussion turned to the relation-



ship between origami and mathematics. This academic communication was something that was original to the group approach at the university, and it could be another medium in establishing relationships among university participants. Finally, we discussed the “community” aspect. This group was organized in a community at a university. Several students of different genders, generations, and cultural backgrounds were learning together at the university; these cultural differences were also able to incorporate developmental disorders. The university diversity was useful for peer support. The group was open to every student, and they could share their interests and hobbies in it. They also strengthened their social skills with each other by sharing their similar interests. This group was a new peer support model that facilitated social skills in the participants, especially those with ASD, at the university.

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