
Reviews

COOPERATIVE LEARNING IN JAPAN

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1. A history of the practical applications of cooperative groups to school learning in Japan

(1) The outlines

Small groups in the class have been used for a long time in cooperative school learning in Japan. There are three distinctive phases of the practical application of cooperative small groups. The first, 1910's to 1920's, the second, a period of several years after World War II, and the third, from 1955 to now.

The phase from 1910's to 1920's was a short period of social stability after the grave political change in 1868, and was a period of quickening democracy. But the phase had been soon usurped by the phase of militarism and totalitarianism. The second phase was the important turning point of the political organization of Japan from totalitarianism to democratism. The third phase started as a period of having much concern of improving academic achievement in each pupil and student. The people who has studied and made practice of cooperative small group learning in this phase has been giving much concern about it's functions of not only forming democratic attitudes of learners' but also improving academic achievement.

The first phase

In the first phase of the application of cooperative small groups to school learning, Heiji OIKAWA had made the leading studies. He published his work, "Dynamic educational method using groups" (Kohgakkan) in 1912. In that book, he adopted Dewey's theory promptly, and completed systematically the way of

educational practice to maintain pupils' active learning. He advocated the effectiveness of ability grouping, evaluated negatively the competition of only aiming at winning against others, and related that the cooperative interaction in the group process was desirable. We can find a similar point of issue in Yukinori SANADA's work ("Basic principles in group instruction", 1918, Meguroshoten) and in Gunji NAGARA's work ("Practical study of dynamic education", 1920, Kohgakkan). The following important works were made by Takeji KINOSHITA ("Principles of learning", 1923, Meguroshoten, and "Practice of the principles of learning", 1926, Meguroshoten). He clearly mentioned that the mutual interaction of learners was the significant factor to promote their achievements. It was noticeable that the authors of these books were the practitioners of school education.

The second phase

In the second phase, the method of the application of cooperative small groups in school learning at that time was called BUNDAN GAKUSHUH (Group Learning). After the defeat in World War II, theories and methods to materialize democratic education were introduced from U.S.A., such as the Project Method. The theories developed by Dewey or Kilpatrick considerably affected the practice of Japanese school education. A cooperative small group was often used as the opportunity of democratic activity. In the academic lessons, learning tasks were selected on the basis of learners' own concerns or experiences, and divided into several parts. Each small group was assigned a part of the task, then the group members studied cooperatively, and announced or published the results to the whole class. This practice was evaluated meaningful as "The New Education" at first. It might be one of the ideal methods of education to make much of learners' experience in learning. In those days, it was said that the learners studied more actively, and teachers could give full play to their individual character and creativity. But some debates on the effectiveness had aroused gradually in the process of transition of society.

The third phase

Studies and practices on the third phase had been intended to correspond the criticism on education in the second phase. Researches conducted in the first half of 1950's showed an obvious fall of the pupils' and students' academic achievement. The view of the achievement that it must be done in response to actuality is not always right, but there are also significant problems of too much concern to learners' interest. And it was required to give great regard for the sequence and system of learning materials. In this phase, the main concern of researchers and practitioners has been the development of the application of cooperative small groups to whole class instruction. Whole class instruction is the form applicable to heighten the efficiency of teaching. And teachers can show learning materials sequentially and systematically to learners. But, on the other hand, that form often makes stragglers. So, cooperative small groups have been introduced to make up for the defect of whole class instruction.

Next, I will explain the content of the third phase concretely.

(2) Two standpoints of the cooperative learning method in recent Japan

We can divide the methods into two types. BAZU or SHOHSUHDAN GAKUSHUH (small group learning) is the one type of the methods. The other is called SHUHDANSHUGI KYOH-IKU (education of collectivism).

The standpoint of making the educational objectives of the former method is based on the Fundamental Law of Education in Japan. This law is one of the symbols of the democracy in Japan and it aims at the completion of personality of a peaceful citizen. Teiji SUEYOSHI (emeritus professor of Hiroshima University) and Tokuo KATAOKA (professor of Hiroshima University) are the main promoters of SHOHSUHDAN GAKUSHUH, and they and their joint workers have been studying and practicing vigorously. BAZU has been studied and practiced by the founder Yoshihisa

SHIOTA (emeritus professor of Nagoya University) and his joint workers. The relationship of these two methods is interdependent. They resemble each other much in contents. Each of them has nation-wide association. The main concern of those methods focuses on the improvement of academic achievement of learners, and the simultaneous attainment of the wide and beneficial attitudes. Cooperative small groups are applied effectively in the process of learning. Of course, these cooperative methods are applied also to the non-academic field of school activities because of the consistency of the principles of education.

The theoretical basis of the latter method, SHUHDANSHUGI KYOHIKU, is on A. S. Makarenko's and N. K. Krupskaya's works. It aims at the organization of "democratic groups". The goal of education in this method belongs to the group, not to an individual. It intends to bring up morality and behavior of socialism, and is supported in Japan by teachers who are concerned about more or less political reformation. Practice of the method spreads as wide as the former two methods. However, some great anxiety was proposed whether it is effective for building up pupils' and students' active personality and democratic attitudes, because of the encouragement of the intergroup competition and of the rigid rules in group management. In the recent conditions of Japanese education, it has been unavoidable for teachers who practise this method to pay attention to the personal academic achievement, so it has showed a resemblance to the former two methods.

2. Actual conditions of the application of cooperative small groups to school learning in Japan

(1) Data from the fact-finding researches

We the researchers of BAZU had made studies on the actual conditions of the application of cooperative small groups. In the paper of Kajita, Shiota, et al. (1980), the conditions of the application of them to academic lessons were reported, and in Kajita, Sugie, et al. (1980), those in non-academic field in school activities

were reported.

The data consisted of 246 answers of elementary school teachers and of 323 junior high school teachers.

From the table 1 to the table 3, the data on the question whether the cooperative small groups are applied to each academic lesson of elementary school in lower grade (1st and 2nd grades), middle grade (3rd and 4th grades), and upper grade (5th and 6th grades) is shown. The data of junior high school is shown in the table 4. We can see that, as the form of learning, the cases of the small group form only are seldom except the science in the middle and upper grade in elementary school. As a whole, when the cooperative groups are applied, they are combined with the form of whole class and/or personal learning.

Referring to each table, quite a few teachers apply small groups in their teaching of science, social studies, and physical training. As the case of arithmetic, over 30% of teachers use small groups in the upper grade of elementary school, but not so many in the lower and the middle grades. We can see in junior high school that small groups are often applied in almost every subject except mathematics.

We do not compare our data with the foreign ones, but it will be seen that the application of cooperative small groups to school learning is fairly popular in Japan.

Next, the reasons of applying small groups in academic lessons are shown in the table 5 (elementary school) and in the table 6 (junior high school). According to these data, "acquisition of cooperative personality", "to deepen personal thinking", "to increase each pupil's participation", and "insufficiency of experimentation tools" are the reasons chosen by comparatively many teachers. The results in junior high school resemble those of elementary school. Considerably many teachers think that the form of whole class is an effective procedure to obtain better achievement. This tendency is stronger in junior high school. And many teachers think that the personal learning is more desirable to respond to the individualities of pupils and students.

TABLE 1 The Form of Learning in Each Subject (1 st & 2 nd grades—elem. school)

subject / form	W	G	P	W & G	G & P	W & P	W, G & P	the rest
Japanese language (N=67)	25 (37.3)	2 (3.0)	0	10 (14.9)	1 (1.5)	22 (32.8)	5 (7.5)	2 (3.0)
arithmetic (N=67)	14 (20.9)	1 (1.5)	4 (6.0)	1 (1.5)	1 (1.5)	39 (58.2)	6 (9.0)	1 (1.5)
science (N=66)	8 (12.1)	10 (15.2)	0	39 (59.1)	2 (3.0)	1 (1.5)	5 (7.6)	1 (1.5)
social studies (N=67)	17 (25.4)	1 (1.5)	0	37 (55.2)	1 (1.5)	2 (3.0)	7 (10.4)	2 (3.0)
drawing (N=65)	4 (6.2)	0	8 (12.3)	9 (13.4)	8 (12.3)	28 (43.1)	8 (12.3)	0
music (N=61)	17 (27.9)	0	0	6 (9.8)	0	19 (31.1)	19 (31.1)	0
physical training (N=66)	11 (16.7)	0	0	15 (22.7)	3 (4.5)	5 (7.6)	32 (48.5)	0

W: whole class G: small group P: parsonal

TABLE 2 The Form of Learning in Each Subject (3 rd & 4 th grades—elem. school)

subject / form	W	G	P	W & G	G & P	W & P	W, G & P	the rest
Japanese language (N=77)	43 (55.8)	0	0	14 (18.2)	0	14 (18.2)	5 (6.5)	1 (1.3)
arithmetic (N=77)	11 (14.3)	0	0	5 (6.5)	1 (1.3)	52 (67.5)	7 (9.1)	1 (1.3)
science (N=74)	4 (5.2)	24 (31.2)	0	35 (45.5)	6 (8.1)	0	4 (5.2)	1 (1.4)
social studies (N=75)	11 (14.7)	3 (4.0)	0	50 (66.7)	0	2 (2.7)	8 (10.7)	1 (1.3)
drawing (N=67)	7 (10.4)	1 (1.5)	10 (14.9)	9 (13.4)	9 (13.4)	20 (29.9)	11 (16.4)	0
music (N=55)	21 (38.2)	0	0	7 (12.7)	0	11 (20.0)	14 (25.6)	2 (3.7)
physical training (N=73)	10 (13.7)	0	0	24 (32.9)	3 (4.1)	11 (15.1)	24 (32.9)	1 (1.4)

W: whole class G: small group P: parsonal

TABLE 3 The Form of Learning in Each Subject (5 th & 6 th grades—elem. school)

subject form	W	G	P	W & G	G & P	W & P	W, G & P	the rest
Japanese language (N=72)	38 (52.8)	2 (2.8)	0	13 (18.1)	0	10 (13.9)	8 (11.1)	1 (1.4)
arithmetic (N=72)	2 (12.5)	3 (4.2)	2 (2.8)	5 (6.9)	1 (1.4)	38 (52.8)	13 (18.1)	1 (1.4)
science (N=65)	2 (3.1)	22 (33.8)	0	32 (49.2)	2 (3.1)	1 (1.5)	5 (7.7)	1 (1.5)
social studies (N=68)	7 (10.3)	3 (4.4)	0	46 (67.6)	0	4 (5.9)	7 (10.3)	1 (1.5)
drawing (N=54)	3 (5.6)	1 (1.9)	7 (13.0)	6 (11.1)	6 (11.1)	23 (42.6)	7 (13.0)	1 (1.9)
music (N=29)	8 (27.6)	1 (3.4)	1 (3.4)	7 (24.1)	1 (3.4)	4 (13.8)	7 (24.1)	0
physical training (N=62)	6 (9.7)	6 (9.7)	0	17 (27.4)	4 (6.5)	9 (14.5)	20 (32.3)	0
home project (N=37)	2 (5.4)	3 (8.1)	0	12 (32.4)	1 (3.1)	5 (13.5)	14 (37.8)	0

W: whole class G: small group P: parsonal

TABLE 4 The Form of Learning in Each Subject (junior high school)

subject form	W	G	P	W & G	G & P	W & P	W, G & P	the rest
Japanese language (N=48)	9 (18.8)	0	1 (2.1)	15 (31.3)	1 (2.1)	13 (27.1)	9 (18.8)	0
mathematics (N=52)	14 (26.9)	0	0	8 (15.4)	0	21 (40.0)	7 (13.5)	2 (3.8)
science (N=56)	4 (7.1)	4 (7.1)	0	35 (62.5)	1 (1.8)	1 (1.8)	8 (14.3)	3 (5.4)
social studies (N=51)	12 (23.5)	1 (2.0)	0	24 (47.1)	0	3 (5.9)	7 (13.7)	4 (7.8)
English (N=48)	9 (18.8)	1 (2.1)	0	9 (18.8)	0	17 (35.4)	11 (22.9)	1 (2.1)
art (N=15)	1 (6.7)	1 (6.7)	2 (13.3)	0	1 (6.7)	6 (40.0)	4 (26.7)	0
music (N=15)	2 (13.3)	0	0	4 (26.7)	0	3 (20.0)	5 (33.3)	1 (6.7)
physical training (N=16)	0	2 (12.5)	0	6 (37.5)	0	0	8 (50.0)	0
home project (N=15)	1 (6.7)	1 (6.7)	0	5 (33.3)	0	0	8 (53.8)	0
total (N=316)	52 (16.5)	10 (3.2)	3 (0.9)	106 (33.5)	3 (0.9)	64 (20.3)	67 (21.2)	11 (3.5)

W: whole class G: small group P: parsonal

TABLE 5 Reasons of The Practical Use of Each Learning Form——elem. school

reasons form	W (N=278)	G (N=83)	P (N=32)	W & G (N=399)	G & P (N=50)	W & P (N=320)	W, G & P (N=236)
good understanding of pupils	123 (44.2)	6 (7.2)	0	57 (14.3)	8 (16.0)	63 (19.7)	24 (10.2)
good retention of pupils	15 (5.4)	3 (3.6)	2 (6.3)	28 (7.0)	0	35 (10.9)	16 (6.8)
improvement in academic achievement	6 (2.2)	1 (1.2)	0	5 (1.3)	0	13 (4.1)	19 (8.1)
relief of low achievers	5 (1.8)	6 (7.2)	4 (12.5)	13 (3.3)	3 (6.0)	155 (48.4)	43 (18.2)
to fit each aptitude	0	4 (4.8)	20 (62.5)	32 (8.0)	14 (28.0)	139 (43.4)	99 (41.9)
to decrease a difference of achievement	1 (0.4)	0	1 (3.1)	11 (2.8)	2 (4.0)	29 (9.1)	13 (5.5)
to reduce inferiority complex	4 (1.4)	1 (1.2)	1 (3.1)	1 (0.3)	0	5 (1.6)	7 (3.0)
to promote human relations	4 (1.4)	10 (12.0)	1 (3.1)	70 (17.5)	7 (14.0)	9 (2.8)	60 (25.4)
to avoid a competition	1 (0.4)	2 (2.4)	2 (6.3)	1 (0.3)	0	0	3 (1.3)
acquisition of cooperative personality	3 (1.1)	7 (8.4)	0	63 (15.8)	11 (22.0)	5 (1.6)	33 (14.0)
effective intercourse	4 (1.4)	12 (14.5)	1 (3.1)	51 (12.8)	7 (14.0)	4 (1.3)	20 (8.5)
application of competition	0	2 (2.4)	0	17 (4.3)	3 (6.0)	4 (1.3)	23 (9.7)
to deepen personal thinking	17 (6.1)	16 (19.3)	0	89 (22.3)	4 (8.0)	10 (3.1)	25 (10.6)
mutual criticism	2 (0.7)	3 (3.6)	0	12 (3.0)	4 (8.0)	4 (1.3)	24 (10.2)
to promote group consciousness	1 (0.4)	9 (10.8)	1 (3.1)	49 (12.3)	4 (8.0)	3 (0.9)	30 (12.7)
to improve satisfaction	2 (0.7)	0	0	22 (5.5)	2 (4.0)	5 (1.6)	14 (5.9)
to increase each pupil's participation	6 (2.2)	30 (36.1)	1 (3.1)	80 (20.1)	8 (16.0)	12 (3.8)	40 (16.9)
to promote subjectivity	1 (0.4)	7 (8.4)	7 (21.9)	47 (11.8)	8 (16.0)	21 (6.6)	53 (22.5)
insufficiency of experimentation tools	38 (13.7)	33 (39.8)	0	77 (19.3)	10 (20.0)	20 (6.3)	33 (14.0)
efficient and smooth teaching	98 (35.3)	2 (2.4)	0	45 (11.3)	0	31 (9.7)	15 (6.4)
easiness to make teaching plans	35 (12.6)	2 (2.4)	0	15 (3.8)	0	10 (3.1)	6 (2.5)
easiness to change teaching plans	40 (14.4)	1 (1.2)	0	11 (2.8)	0	17 (5.3)	6 (2.1)
the rest	11 (4.0)	0	1 (3.1)	0	0	1 (0.3)	3 (1.3)

W: whole class G: small group P: personal

TABLE 6 Reasons of The Practical Use of Each Learning Form—junior high school

reasons form	W (N=52)	G (N=10)	P (N=3)	W & G (N=106)	G & P (N=3)	W & P (N=64)	W, G & P (N=67)
good understanding of students	22 (42.3)	0	0	29 (27.4)	0	26 (40.6)	26 (38.8)
good retention of students	5 (9.6)	2 (20.0)	0	23 (21.7)	0	11 (17.1)	17 (24.5)
improvement in academic achievement	10 (19.2)	2 (20.0)	0	9 (8.5)	0	7 (10.9)	6 (9.0)
relief of low achievers	2 (3.8)	2 (20.0)	2 (66.7)	19 (17.9)	2 (66.7)	25 (39.1)	29 (43.3)
to fit each aptitude	0	2 (20.0)	2 (66.7)	10 (9.4)	2 (66.7)	31 (48.4)	38 (56.7)
to decrease a difference of achievement	1 (1.9)	0	0	4 (3.8)	0	4 (6.3)	7 (10.4)
to reduce inferiority complex	1 (1.9)	0	1 (33.3)	4 (3.8)	0	4 (6.3)	3 (4.5)
to promote human relations	0	3 (30.0)	0	25 (23.6)	1 (33.3)	1 (1.6)	17 (25.4)
to avoid a competition	1 (1.9)	1 (10.0)	2 (66.7)	1 (0.9)	1 (33.3)	6 (9.4)	4 (6.0)
acquisition of cooperative personality	1 (1.9)	2 (20.0)	2 (66.7)	25 (23.6)	3 (100.0)	6 (9.4)	15 (22.4)
effective intercourse	0	2 (20.0)	0	16 (15.1)	1 (33.3)	1 (1.6)	8 (11.9)
application of competition	2 (3.8)	3 (30.0)	0	3 (2.8)	0	0	6 (9.0)
to deepen personal thinking	4 (7.7)	5 (50.0)	1 (33.3)	44 (41.5)	1 (33.3)	5 (7.8)	26 (38.8)
mutual criticism	0	0	0	7 (6.6)	0	1 (1.6)	5 (7.5)
to promote group consciousness	0	5 (50.0)	0	27 (25.5)	0	0	6 (9.0)
to improve satisfaction	0	0	0	6 (5.7)	1 (33.3)	4 (6.3)	6 (9.0)
to increase each pupil's participation	5 (9.6)	8 (80.0)	0	55 (51.9)	1 (33.3)	7 (10.9)	25 (37.3)
to promote subjectivity	2 (3.8)	3 (30.0)	0	23 (21.7)	0	3 (4.7)	22 (32.8)
insufficiency of experimentation tools	13 (25.0)	5 (50.0)	0	26 (24.5)	0	5 (7.8)	10 (14.9)
efficient and smooth teaching	34 (65.4)	1 (10.0)	0	32 (30.2)	0	19 (29.7)	8 (11.9)
easiness to make teaching plans	20 (38.5)	1 (10.0)	2 (66.7)	9 (8.5)	1 (33.3)	17 (26.6)	5 (7.5)
easiness to change teaching plans	18 (34.6)	0	0	10 (9.4)	0	11 (17.2)	3 (4.5)
the rest	2 (3.8)	0	1 (33.3)	3 (2.8)	1 (33.3)	2 (3.1)	0

W: whole class G: small group P: personal

It must be added and presented that the number of pupils or students in the class is too many (about 40 to 45) in Japan, so the small groups are often used to make up for the insufficiency of teaching.

In addition to the application of cooperative groups to academic field, it is shown that they are often applied to the activities in non-academic field in Japanese school learning (Kajita, Sugie, et al. 1980). At the time of class conference, 37% of teachers use small groups in the lower grades in elementary schools, 46% in the middle grades, 65% in the upper grades, and 82% in junior high schools. The cleaning and scrubbing of the classroom is carried out in small groups in almost every grade. Still more, the school excursion is thought to be a good chance of training the self-government ability in small group.

Generally, members of a small group in academic learning differ from those in non-academic learning. So pupils and students can experience two sorts of relationships.

In two researches presented here, we made many more detailed questionnaires of e.g. in what conditions the teachers use small groups, I must exclude them because the space is insufficient.

(2) The cultural background of the application of cooperative small groups in Japan

A tendency of interdependence is rather general in Japanese human relations. Japan has much population, but the variety of race is very little and the people speaks almost the same language. Therefore, the barrier of feeling and mentality of each person is probably weaker than in most of foreign countries. There is the national character that makes Japanese enter into relation with each other easily. But the uniformity of culture restricts deviation. When the formation of group is attained readily, the character of the group becomes often conservative and the main function of it becomes maintaining the stability of emotions of each member. So, it is not easy to make a task-oriented group in Japan.

As explained later, we have gained the fruits of positive and

practical studies of the application of cooperative small groups to school learning in Japan. And the most of school teachers in Japan think that the improvement of human relations in the class and in the small group is indispensable to the management of school learning. But the traditional view of group functions in Japan inclines to the affective domain, and the teachers' recognition of the meaning of group function is generally restricted to the expression of "getting along well" and/or "helping each other". Therefore even if the small groups are applied frequently, it does not mean the wide spread of the substantial studies to practical activities.

3. The theory and the practice of BAZU

(1) The origin and the development of BAZU

The first publication of BAZU in 1962 had an extensive public response. The name of the book was "BAZU learning method : education of no straggler", and the editors were Yoshihisa SHIOTA and Takashi ABE (the school master of HACHIKAI Junior High School). The contents of this book were the theoretical references of BAZU, the reports of the practices of the dissolution of delinquency and of low achievement in students on the basis of reliance in human relations, and positive studies using control group method. In 1965, Shiota published again the positive studies and the practice to develop effectiveness in achievement in TOYOKAWA CHUHBU Elementary School. There the same principles in HACHIKAI were used, and he reported the effectiveness of BAZU by using a scientific analysis.

Since then, positive and practical studies on BAZU have been continued. An example of recent big practical research on BAZU was made in Yutaka-Cho and Toyohama-Cho in Hiroshima Prefecture from 1977 to 1984. The locations of the area where the research had been conducted were in solitary islands, and there were many problems to solve. Low achievement in pupils and students was one of the problems. There were important other

problems of the industry of shipbuilding and agriculture of mandarins. They were in dark clouds and the young people left the islands. As one of the ways of solution of those problems in that area, substantial education for all pupils and students was planned. BAZU was accepted by most of the schools in that area as the principles of improving education not only in academic domain but also in human relations.

In 1980, ZENKOKU BAZU GAKUSHUH KENKYUHKAI (National Association of the Study on BAZU) was established. About 15 scholars and 500 school teachers are the members of this association now. Annual convention has been held since 1969 and the 23rd convention will be held in Kasugai-City (in Aichi Prefecture) this year.

Shiota has studied educational evaluation, and in one of the leading scholars who introduced the studies of group dynamics into Japan. Moreover, he introduces J. Bruner into Japan and has a profound knowledge of the psychology of learning and cognition.

The origin of the name of BAZU is in buzz-session. In BAZU, the technique of small group interactions is used appropriately in the process of whole class teaching. So, it was called Buzz-Learning Method at first and the name of Buzz had strongly fixed in the educational world in Japan. But this method cannot be characterized by only one technique of buzz-session. Consequently, we decided to spell "BAZU" as its contents may not to be grasped narrowly. We adopted only the pronunciation of buzz (the pronunciation of "buzz" in Japan is [bazu]).

(2) The possible extent of the application of BAZU in school education

We can apply the principles of BAZU to every learning subject. BAZU offers principles applicable to elementary, junior high, and senior high schools. It is evident seeing the variety of themes that have been reported in each annual convention. Sugie, et al. (1981), and Sugie & Uda (1987) arranged those reports

according to the following categories.

- (a) The study of the principles and their application
- (b) The study of educational objectives and learning tasks
- (c) The study of the method of assistance and teaching
 { learning strategy (in Japanese, social studies, science,
 arithmetic or mathematics, English, physical training) / group
 composition / buzz session for a review }
- (d) The study of evaluation
- (e) The study of the education in non-academic fields
 { group composition / guidance / club activities / education for
 the handicapped / relationship between BAZU and community }

As an example in non-academic field, Sugie, et al. (1986) reported the practice of the training of ski which was enforced as a school excursion in senior high school. Still more, the principles were applied repeatedly to junior high schools which had the problems of the students' delinquency, and the cases of success were not a few.

(3) Research methods in BAZU

Many of substantial researches have been conducted in BAZU under close cooperation between researchers and practitioners. The material problems and the important hypotheses have been found frequently in the practice in schools. We have engaged ourselves in Action-Research, and if it is necessary, carried back the unsolved or unclear problems to the laboratory. We have made close examinations too, and applied the principles found there to the practice of education again.

We cannot guarantee sufficient control of experimental situation in practical studies. Of course we should pursue exactness in the experimentation, but in the studies which includes practical activities, we should rather pursue the validity of interpretation of the results. In the case of practical studies, aims of the study should be given priority to exactness of conditions of a research.

(4) **Basic principles of BAZU**

In BAZU, there are four basic hypotheses on the premise of researches and practice (Shiota & Yokota 1981). The contents of them are as follows.

- (a) A human being exists as an individual, and as a member of society at the same time. Therefore, the relationship between individual and group (or society) is not contradictory. But the basic problem in practice is how to integrate these two elements.
- (b) Education is the process of giving assistance to pupils and students for their self-comprehension, self-integration, self-guidance, and self-training. Therefore, the aim of education exists in bringing up the persons who are able to attain self-education, self-guidance, and self-training. This description means the importance of the independent, cooperative and creative personality as the aims of education.
- (c) Human relations lie in the base of education. The first step of the foundation of human relations begins from reliance to others. And next, the relations of interdependence are established and membership consciousness is heightened. Education is realized only when these conditions are satisfied. We cannot conduct educational activities without considering human relations in the class.
- (d) Pupils and students learn ordinarily in group or social situation. They exchange various contents of social interactions and develop the relationships between them. The condition of interactions and relationships in group influences considerably on pupils' and students' achievement. The existence of difference in members' ability is evaluated negatively on one hand, but on the other, we can find the essence of humanization in the process of cooperation of various ability and individuality in school

learning. We cannot get satisfactory fruits through compulsion and competition.

In addition to these hypotheses, five points of view of the orientation of the practice are listed by Shiota.

- (a) Education is the process of a desirable change of behavior in each learner. In that process, three elements must be contained. They are the establishment and materializing of learning objectives, the organization of learning process, and the evaluation of the results of learning.
- (b) Learning is the inner activity of learners. So, they must have definite objectives, ability relevant to them, and informations applicable to attainment. Moreover, teachers should consider the structure of motivation, cognition, attitude, and self in each learner.
- (c) Learning does not occur without learner's consciousness of task. Definite task situation is indispensable for learning activities. Quality and quantity of the task influence much on learning activities and its results.
- (d) Learning process is the integrative process of cognitive and attitudinal activities. So, cognitive objectives and attitudinal ones should be listed together and their simultaneous attainment should be aimed at.
- (e) The essential meaning of evaluation in education lies in the function of feedback of information about how much the objectives were attained. Evaluation must be conducted not only by teachers but also by colleagues and by learners themselves. Self and mutual evaluation should be made much of.

(5) The application of cooperative small groups in BAZU

The learning situation of cooperative group makes it possible to raise learning motivation of learners and attain effective learning not only in academic achievement but also in learning set, technique of maintaining interpersonal relationships, social attitudes, and so on. In BAZU, we aim at the simultaneous attain-

ment of the educational objectives of cognitive domain and attitudinal domain.

The smooth attainment of educational objectives is difficult in whole class instruction because of its large size. Then small groups are composed in the class, and the close interactions among learners become possible.

The most effective form of learning changes according to learning materials and the conditions of learners. So, teachers must select and combine the whole class and/or personal forms with small group learning to meet suitably to those situations. However, we think in BAZU that the application of small group activities should be intended as much as possible because of the four hypotheses and the five points of views mentioned above. The intention will make it possible to fill up human relations that lies in the base of learning and to reach the effective achievement of cognitive and attitudinal domain simultaneously. At the beginning of the small group learning, the instruction of cooperation (e.g. "Learn in group and aim at the goal of all members' understanding.") must be directed. The application of cooperative small groups has been the definite characteristic of BAZU. Now I will enumerate the effects of the application of small groups in school education from our experiences.

- (a) Children can put themselves at ease and speak freely in the group of small size. Their emotions are stabilized and the defensive set is unnecessary in their participation.
- (b) All of the members must play more or less some of the formal or informal roles because of small number of members.
- (c) Children can learn sociality and solidarity through the experience of cooperation.
- (d) Children can acquire independency, positiveness, and the ability of self-government through the learner-centered small group activity.
- (e) The amount of participation of each member in the

learning process is larger than when they learn in whole class. The difference of the amount of participation among group members becomes smaller.

- (f) A difficult problem which cannot be solved by oneself can be solved through group interactions.
- (g) Efficiency in quality and quantity of results can be heightened through cooperative works.
- (h) In the process of learning in groups, slow learners can be explained minutely by fast learners. On the other hand, fast learners can fix what they have learned in the process of teaching to slow learners.
- (i) The intention or instruction of a teacher can be conveyed more easily to groups than to each learner because of the simplicity of the communication network.

Of course, the application of cooperative small groups are not always successful in practice. The main problems often pointed out are as follows.

- (a) It becomes noisy in the class and idle talk increases.
- (b) Dependency in learners increases, and they think little by themselves.
- (c) Superior learners in academic achievement are compelled to stand still.
- (d) The progress of classwork is delayed.

It is sure that those faults arouse frequently if the teacher use the small groups to expect the fruits from cooperative interactions without consideration of technique of group management. To make sufficient preparations and to get suitable knowledge of group management are indispensable. And above all, it is indispensable for teachers to have attitude to believe the importance and the positive power of human relations and interpersonal reliance. Teachers must have strong confidence in significant meaning of cooperation.

Next, I will show a list of the types of small group works used in practice of BAZU.

- (a) To understand the learning objectives or the content of

- learning tasks at the beginning of learning activity.
- (b) To find out the points of the question for group discussion.
 - (c) Facilitation of understanding of the content of learning material.
 - (d) Problem solving.
 - (e) Examination of the learners' answers.
 - (f) Coordination of the disagreement of opinions among members.
 - (g) To summarize the content of what have been learned.
 - (h) Discussion of the way of collecting informations.
 - (i) The exercise or review.
 - (j) Observation or appreciation.

4. Technique of teaching and learning in BAZU developed by positive studies

In BAZU, the technique of improving school lessons to meet the conditions of learners and the contents of learning subjects have been developed. The studies have taken into consideration the positive application of small groups to cultivate human relations. However, all of the elements in education are related each other in complicated ways, so all the steps of process of teaching and learning should be considered.

Here, I will introduce the technique of teaching and learning in BAZU dividing the educational process into three steps planning, practice, and evaluation.

(1) Planning of lessons

1) Definement of learning task

It has been recognized widely that the learning task must be shown to learners definitely. Especially in the case of learning in groups, good attainment would not be expected if the members' recognition of group task is ambiguous and different. We must not forget to show the learning task definitely especially in the

small group learning.

It is not enough for teachers to recognize definitely the educational objectives for themselves as teaching objectives. They must be showed to learners as the learning objectives they should face. To raise the definiteness of learning objectives, it is required in BAZU to use the procedure "translation to task" when teachers plan lessons. Translation to task is the work of translating teaching objectives into the forms of items in test. An example of this is as follows.

"a teaching objective" To make learners understand the nature of carbon dioxide.

"a learning objective" To understand the nature of carbon dioxide.

"a learning task" Answer the following questions.

1. What happens when you put a fire in carbon dioxide?
2. Is carbon dioxide soluble in water?
3. What happens when you put carbon dioxide to lime-water?
4. Which is heavier carbon dioxide or air?

In this example, if the learners can answer correctly to all of these learning tasks, it means they have attained learning objectives, and for teachers to have attained their teaching objectives. Of course, we cannot translate any of the educational objectives to learning tasks. But we think it necessary in BAZU to make the objectives as definite as possible.

2) Clarity of group goals and group path

In BAZU, it is proposed for an effective learning to have an opportunity of explaining to learners the contents and the order of learning tasks and the procedure of learning in the first lesson of the new learning unit. That is, it is an opportunity to afford them an insight into their learning activities.

Raven & Rietsema (Human Relations, 10, 29-45, 1957) and Ishida (1980) examined the effects of the clarity of group goal and group path. It was shown from those studies that when the

degree of clarity was heightened, groups could get higher performance, group members formed more active attitudes to work together, and the relationships in groups were changed to be more intimate ones.

Another examinations were made by Shiota, et al. (Shiota, et al. 1974c, Shiota et al. 1975) about the practical situations of school lessons. We can find the positive effects of showing the group path of the new learning unit on each group member's achievement and satisfaction, and on the contents of interactions in groups not significantly but consistently.

It is thought that the procedure of giving learners the insight into the path of tasks manifests its good effects by the reasons listed below.

- (a) It gives learners the keys to monitor cognitively their position in the series of steps of learning tasks. Furthermore, when the interactions among group members are based on the knowledge of the group path, the members can give effective information to each colleague's behavior of monitoring.
- (b) It shows the whole map of learning activities in a learning unit. So, it will have almost the same function with that of an advanced-organizer advocated by D. P. Ausbel.
- (c) It makes group goals clear. It is indispensable for the effective small group activities to recognize group tasks in common. Clarity is an important condition to the common recognition in small group members.
- (d) The procedure makes it possible for teachers to comprehend systematically the position of each teaching objective and the whole map of teaching activities.
- (e) It makes easy to evaluate the results of education. It offers useful information not only to teachers but to learners for their self-evaluation or mutual evaluation.

3) Size of task

Size of task means here the time required to solve it. When

small groups are used in a process of whole class teaching, the length of the time of group thinking is generally short, only several minutes. They are ordinarily used to affirm what the learners have learned, not to produce a creative or an original output from group thinking. Such a procedure is more desirable than that of teacher's lecture only. But it is no more than a variation of teacher-centered instruction.

How can we find the way to make the best use of group thinking and to develop each learner through cooperative group activities? In BAZU, it is proposed to give learning groups a large task which needs comparatively long time, and to construct the lessons to lay emphasis on the learners' activity engaged in the task. Learners understand their task definitely, direct themselves to group goals, discuss obscure points among themselves, confirm their achievement, and give assistance to slow learners. If such activities in groups are assured, members in a small group can learn both personally and mutually.

Concretely, the suitable size of a task is 20-30 minutes, and one or two tasks should be prepared for one lesson. What the teacher should do in the lesson are, showing the task, supplying informations for the attainment of the task, and offering, after the phase of group learning, the inclusive explanation on the learning task. Teachers should not give instruction to each learner in the midst of cooperative group learning. Because, such a behavior of a teacher often obstructs the learning pace and/or route of each learner. Misunderstandings or misinterpretations of the learners need not always be corrected at once. If they tackle the task with their whole heart, it is not difficult for them to set right their mistakes through a teacher's inclusive explanation. The main roles of a teacher in the phase of small group learning are to guide the technique of group management and to form good attitude toward learning.

4) The degree of the difficulty of a task

The degree of the difficulty of a task is an important condi-

tion of affecting the effects of learning in small group. In Shiota, et al. (1971), it was reported that when the group task was easy, the amount of interactions among members was a little. An easy task can be attained without intimate interactions. On the other hand, it was shown that when the group task was too difficult, the amount of interactions was also a little. To find out the direction of the attainment of the task was impossible for the group members when the task was too difficult, and the members had no opinion to exchange with each other.

The effects of small group are brought about by adequate interactions among members. Therefore, optimum difficulty of a task is medium. Teachers should make up those optimum tasks through their experiences to facilitate the group interactions.

5) Cooperation as a group task

In BAZU, the instruction that the learners must learn in group in order that all of the members may understand the contents of the learning task is always applied. At least, the basic contents of learning tasks should be understood by all of the members. It is the direction of cooperation. Cooperation itself is the important group task in BAZU.

(2) Practice of lessons.

1) Strategy of group thinking

When pupils and students learn in group, they are often confused by the other members' opinions or behaviors. If the group members have no opportunities to think for themselves in advance of group thinking, they are apt to misunderstand the informations in a task or accept one-sided information from others. Still more, if the power in the group is biased, it incurs possibility of marked conformity.

Accordingly, we employ the method to put the phase of personal thinking in advance of group thinking in BAZU. When such a personal phase is adopted, the content, the main point and questions of the task become clear to all group members. Learners

can more easily orientate themselves and have a prospect to attain their task. That is, the procedure of applying personal thinking makes it possible for learners to extract the suitable problem classification and active initiative responses.

When each member enters group thinking with his opinion formed in the personal phase, interactions among members become substantial. In the studies of Sugie, et al. (1979, 1983a, 1983b) it was reported that the condition of advanced personal thinking to group thinking is superior to the condition of only group thinking, in the quality of interactions and in the members' satisfaction with group learning. Especially, when the type of task was divergent one, it was found that the application of personal thinking raised the number of ideas.

The learning strategy of the combination of advanced personal thinking and following group thinking is a prototype. We must consider and think out the suitable and effective strategies for each type of tasks.

Now, to make the members' interactions active, we must train learners to have a technique of smooth, effective, and friendly interactions. In BASU, each school or class sets up the opportunity of the training of the technique at the beginning of the introduction of BAZU. For example, it has been practiced in some junior high schools for new students to observe skilled group participation of upper grade students. But the regulated training procedure has not been developed yet.

2) Group composition

We apply the results of Group Dynamics to composition of small groups. The best condition of a group composition is not irrelevant to the aims of a teacher. So the teacher should select the condition for himself. In BAZU, the principles of composition of small groups have been studied and introduced to teachers.

homogeneity-heterogeneity

In school education, the main concern is in the degree of attainment of each learner and not in the degree of group perform-

ance. We can find many researches on homogeneity-heterogeneity in Group Dynamics, but most of them treat only the performance of small groups and have rarely concern in personal attainment. We can find only a little studies that furnish us with relevant informations.

Shiota, et al. (1974a) examined experimentally the group effects on personal performance in school. It was found there, that the condition of heterogeneous grouping in members' ability is more effective than that of homogeneous grouping. No difference was found in high-intelligence members between the two conditions of group composition. On the other hand, heterogeneity in ability was effective in middle- and low-intelligence members.

In Sugie (1976), it was reported that the emulation occurred among the members of high ability homogeneous group even when a instruction of definite cooperation was given. High ability members seem often to be motivated emulatively when they are put together, and difficult to cooperate spontaneously. They work in parallel and the effectiveness from the group thinking is hard to expect.

Still more, the advantage of heterogeneous group is not restricted to low-ability members. Sugie & Kajita (1988) found that the learning set to teach another person afterward and the activity of teaching another person has the function of raising the achievement. That is, when high ability members learn personally before group learning with the consciousness of their coming teaching and they teach other members in the process of group learning, they can achieve more. It just proves that "teaching is learning".

On the basis of these fruits, small groups are ordinarily composed heterogeneously in ability in BAZU. We shall be able to expect the positive effects on the learning in affective and social domain in addition to cognitive domain through the contact with various members.

Interpersonal relations

We can find several studies on the effectiveness of group

cohesiveness. Most of them report that high-cohesive group is the condition of high achievement. But in BAZU, it is thought inadequate to compose a small group of friendliness. Because, friendliness is one of the important objectives in education. Shiota & Abe (1962) reported that random grouping has the tendency of superiority to the group of friendliness in the academic achievement and in the positive change in the group structure. The application of high-cohesiveness should be limited to the beginning of a school year, a period of immature interpersonal relationships.

The relationships formed in small groups must be expanded to the whole class. To make good and intimate relationships in the class, changes of small group composition are required after some period of the maturity of groups. It is thought to be desirable to change group composition once a month according to the practical experience in BAZU.

Group size

The practitioner of BAZU uses the group of 4 to 6 persons generally. This size is the cross point of two required conditions of group effectiveness. One is the quantity of group resources, and the other, the positivity of intimate interaction and satisfying participation. But in the lower grade in elementary school, dyad is often used for the reason of learners' inadequacy of the ability of interaction.

Sex

Male and female are mixed in the small group in BAZU. This procedure also aims at the variety of experience in group, and there is no experiential evidence of inferiority in this heterogeneity. Through the experience of intimate interactions, we find rarely the rivalry in opposite sex. We have no anxieties in this problem even in higher grade of elementary school and junior and senior high school. In the 6 persons group in BAZU, it is composed of the pupils or students of high-ability male and female, middle-ability male and female, and low-ability male and female.

Group leader

In BAZU, a regular leader in each small group is not set up. We set up several roles, for example, the chairman, a clerk, a liaison role, and a reporter etc., and exchange the role in turn day by day. Form the short term viewpoint, the regular leader will bring forth the effectiveness to the group. But the ability of good leadership is one of the important learning objectives for every pupil and student. So, teachers should make the opportunity of the experience of leader to each pupil or student. When a pupil or student who has not skilled chairmanship must take the role, another member of skilled chairmanship should give assistance to him. It is an important role of teachers to create such a supportable atmosphere in the class.

(3) Evaluation in the process of lessons

Shiota has taken notice of the function of feedback in evaluation from the beginning of his work in BAZU. And he has introduced the variety of types of evaluation for improvement of school lessons. I will show the utilization and the intention of the procedure of evaluation in BAZU separately according to the domain of objectives.

1) Evaluation of cognitive domain

Pre-test

In advance of the learning activities of new learning unit, the degree of understanding of learning tasks to learn is tested. The results of this test are used by teachers to examine the relevance of learning tasks and the teaching strategies, and to get the scores of improvement from the discrepancy scores between this test and post-test. In some cases, the readiness test is combined. Pre-test is composed of learning tasks in the new learning unit.

Post-test

Post-test is the test conducted immediatery at the end of learning in a learning unit. The content of it is completely the

same as pre-test. From the results of this test, occasionally supplementary lessons to the whole class or some learners are found necessary.

Retention-test

It is desirable to take a chance to conduct a test of same contents to pre- and post-test to evaluate the condition of retention of learned fruits in each learner. The necessity of this test is caused from the results of our studies. That is, the effects of cooperative and positive learning activities are often found in the retention test.

Transference-test

It is also desirable to have the test of applicable and expansive tasks of what the learners have learned. If the learning is attained meaningfully, it will be possible to get high scores in this sort of test.

Summative-test

This test is conducted about twice a school term. It has the same function as the summative test in Mastery Learning.

2) Evaluation of attitudinal domain

Satisfaction

We often use the questionnaire method to evaluate formatively the effects in attitudinal domain. As the base of the questionnaire items, we use in BAZU the items of satisfaction with the content of learning tasks, with learning processes, and with group members. In addition to those items, several items to evaluate learner's attitudinal domain in each specific learning situation are prepared.

Interpersonal relationships

A favourable change in interpersonal relationships in the class is one of the important subgoals for teachers and learners. It is very popular to apply sociometric test in BAZU. Moreover, in some cases, the analysis in the three dimensions of power structure, intimacy structure, and object-orientation structure is made on the basis of the study by Tanaka (1973).

The evaluations mentioned above are useful not only to the improvement of teaching activities, but also to the orientation of learning activities of learners. It is the matter of course to return the results of evaluation to learners as soon as possible.

In BAZU, the mutual evaluation of learners has been paid attention to. Interactions among group members have an aspect of exchanging evaluative informations. So the practitioners of BAZU often set up the time of mutual evaluation of the degree of achievement and the condition of attitude at the end of each lesson.

The informations of evaluation from teachers and/or group members have a function of establishing the standard of self-evaluation. In BAZU, aiming at the ability of self-learning as an educational objectives, it has been thought to make the chance of evaluation as many as possible. It has been also encouraged to prepare the items of questionnaire for self-evaluation.

5. A model of BAZU Unit Learning Method

Recently as an example of practical and comprehensive actualization of the principles of BAZU, a model of BAZU Unit Learning Method has been developed and examined.

The requisites for the model are as follows.

- (a) Teachers must frame the scheme for lessons in every learning unit. The schedule and contents of learning and teaching are prepared adequately in each learning unit.
- (b) At the beginning of the learning of the new unit, the sequence of learning tasks and their relationships are explained sufficiently to learners by the teacher. The learners can understand previously the schedule, content, and meaning of the next learning activities.
- (c) The planning of the learning and teaching process is essentially the teacher's work. But the learning activities must be conducted in learner-centered.

- (d) Evaluation should be applied positively in various opportunities and styles.

Now I will introduce the outline of this model according to the sequence of lessons.

- (a) Teacher's work of selections and arrangements of learning tasks.
- (b) The first hour of lesson (enforcement of pre-test and the explanation of the learning schedule by the teacher)..... The informations about learners' conditions before they learn can be collected by pre-test. The test is constructed in principle from the same tasks which the learners will grapple with afterwards. Following to the enforcement of the test, learning tasks are shown to learners successively and given sketchy explanations of them by the teacher. This is the phase of the lecture by the teacher. He sometimes uses a textbook or the other teaching materials to facilitate learners' comprehension of the learning schedules and of the outlines of the contents. It is also desirable for a teacher to have an intention of awakening learners' interest in learning tasks.
- (c) On and after the second hour of lesson At the beginning of each lesson, the teacher shows the learning task of that lesson definitely and reminds the learners of the learning schedule. The learners grapple with the task personally at first. They get the knowledge required to attain the task from the textbook or the other learning materials by themselves. The teacher does not give a lecture as a rule. After at least every learner has read and understood the outlines of the task, the teacher instructs the learners to learn in group. He gives the instruction of cooperation evidently. In this phase of group learning, the teacher should not give any instructions to the learners. That is, he should not intervene the learners' learning pace. The important point in the

lesson is these phases of personal and group learning. The distribution of time must be sufficient in this phase for the guarantee of learner-centered activities.

When the most of all groups complete their answers, some groups are nominated to announce the answers or results they have made through group thinking. The teacher must select them on the basis of his observations during the group learning phase. On the basis of the content of the announcement of each group, the discussion in the whole class is conducted. The chairman of this phase is the teacher.

At the end of the lesson, the teacher summarizes the content of the learning task and gives the correct answer. The time required for the lecture is usually about ten minutes. In this phase, the teacher intends to correct misunderstandings and to facilitate the systematic understanding of the learners. This is the phase of the lecture of the teacher. He can play the leading role only in this phase.

- (d) The last hour of lesson An inclusive lecture on the learning unit is given to the learners by the teacher. This is the phase of reorganization of what the learners have learned in the unit.
- (e) Post-test The items used in this test are the same as the pre-test. It sometimes contains the several items to evaluate the degree of transference and some questionnaires on attitudinal domain. On the basis of the results of this test, the teacher should occasionally conduct some supplementary learnings.

The BAZU Unit Learning Method is not the method of lacking adaptability. The basic idea of it is in making the optimum planning of the learning and teaching process in response to the conditions of the learners and learning materials. It is rather important to have an attitude to apply this method after due understanding of the principles there.

Yoshihisa SHIOTA mentioned,

..... Pay your attention to simirality rather than to difference.

..... Think much of the logic of coexistence rather than that of exclusion.

We can find several practices on BAZU in order to overcome the delinquency of students. BAZU has been considered as effective principles of those problems too. And some teachers use the principles in tackling the problems of discrimination.

I think that cooperation is one of the most important principles of the way of life. We have been forgotten this fact for a long time. The application of the principle of cooperation to school learning seems to be the attempt extremely significant and natural.

THE LITERATURE ON BAZU

- Ichikawa, C. (ed.) 1987 *The application of free-BAZU to school lessons*. Meijitoshō.
- Ishida, H. 1980 The effects of varied clarity of group goal and substeps upon group problem solving. *Japanese Journal of Experimental Social Psychology*, **19**-2, 119-126. (English Abstract)
- Ito, M., & Sugie, S. 1982 Improvement in the teaching method of Judo in school education. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **23**-2, 65-73.
- Kajita, M., Shiota, S., Ishida, H., & Sugie, S. 1980 Teaching methods in elementary and junior high schools I. *Nagoya University Bulletin of the Faculty of Education*, **27**, 147-182.
- Kajita, M., Sugie, S., Shiota, S., & Ishida, H. 1980 Teaching methods in elementary and junior high schools II. *Nagoya University Bulletin of the Faculty of Education*, **27**, 183-206.
- Shiota, Y. 1965 A study of Buzz group : group structure and productivity. *Nagoya University Bulletin of the Faculty of Education*, **12**, 41-50.
- Shiota, Y. 1967 A study of the task-oriented method in Buzz group learning. *Nagoya University Bulletin of the Faculty of Education*, **14**, 121-132.

- Shiota, Y. (ed.) 1970 *Practical researches on BAZU learning method*. Reimeishoboh.
- Shiota, Y., & Abe, T. 1962 *BAZU learning method : education of no straggler*. Reimeishoboh.
- Shiota, Y., & Kajita, T. 1976 *Theory and practice of BAZU learning*. Reimeishoboh.
- Shiota, Y., Koishi, H., Ichikawa, C., & Sugie, S. 1971 A study of group problem solving I. *Nagoya University Bulletin of the Faculty of Education*, **18**, 123-134.
- Shiota, Y., Nakano, Y., Ichikawa, C., Hayamizu, T., Sugie, S., Tanaka, Y., & Chino, N. 1974a A study of group problem solving II : the effects of grouping and problem solving strategy. *Nagoya University Bulletin of the Faculty of Education*. **21**, 169-192.
- Shiota, Y., Nakano, Y., Ichikawa, C., Sugie, S., & Tanaka, Y. 1974b A study of group problem solving III : On the types of tasks and strategies. *Reports of the 16th Annual Convention of Japanese Association of Educational Psychology*, 276-279.
- Shiota, S., Nakano, Y., & Sugie, S. 1974c A study of group problem solving IV : the effects of the composition of learning tasks and the procedure of the presentation of them. *Reports of the 38th Annual Convention of Japanese Association of Psychology*, 820-823.
- Shiota, Y., & Shinomiya, T. 1970 *Effective practice of BAZU learning method*. Reimeishoboh.
- Shiota, Y., Sugie, S., Shikanai, S., Fujita, T., Nakashima, M., & Yoshida, N. 1975 A study of group problem solving V: the effects of the composition of learning tasks and the procedure of presentation of them. *Reports of the 23rd Annual Convention of Japanese Association of Group Dynamics*, 4-9.
- Shiota, Y., Sugie, S., Shiota, S., & Kajita, M. 1980 A study of group problem solving: an examination of the influence of the difficulty of tasks on group performance. *Academia (Bulletin of Nanzan University)*, **31**, 101-122.
- Shiota, Y., & Toyokawa Chuhbu Elementary School 1965 *BAZU learning in elementary school*. Reimeishoboh.
- Shiota, Y., & Yokota, S. 1981 *Improvement of school lessons through BAZU learning method*. Reimeishoboh.
- Sugie, S. 1976 The effects of group composition upon group problem

- solving : especially on the basis of members' ability. *Japanese Journal of Psychology*, **47-4**, 179-189. (English Abstract)
- Sugie, S. 1980 The effects of group problem solving II : the examination of obstacles in members' interaction. *Japanese Journal of Experimental Social Psychology*, **19-2**, 127-136. (English Abstract)
- Sugie, S. 1981 The effects of group composition upon group problem solving III. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **22-1**, 37-56.
- Sugie, S. 1981 The positive approach in the study of BAZU learning. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **21-4**, 149-190.
- Sugie, S. 1982 Instruction in attitudinal domain in elementary school. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **23-1**, 67-113.
- Sugie, S. 1984 The instructional designs of BAZU unit-initiation method. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **24-4**, 39-60.
- Sugie, S. 1985 A teaching plan for practicing BAZU Unit Learning Method I : on mathematical material "square root". *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **26-3**, 169-184.
- Sugie, S., Ichikawa, C., Fujita, T., & Shiota, Y. 1979 The study of strategies for group problem solving. *Japanese Journal of Experimental Social Psychology*, **18-2**, 105-112. (English Abstract)
- Sugie, S., Ichikawa, C., Fujita, T., & Shiota, Y. 1983a The study of strategies for group problem solving II. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **23-4**, 45-60.
- Sugie, S., Ichikawa, C., Fujita, T., & Shiota, Y. 1983b The study of strategies for group problem solving III. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **24-1**, 151-175.
- Sugie, S., Ichikawa, C., Ishida, H., & Ishida, S. 1981 A list of the reports of instructional practices in BAZU learning. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, **22-2**, 145-164.
- Sugie, S., & Ito, M. 1981 Improvement in the teaching method of Judo in school physical education : the experimental research on the effective use of the small group. *Research Journal of Budo*, **14-1**, 44-50. (English Abstract)
- Sugie, S., & Ito, M. 1983 Improvement in the teaching method of Judo

- in school education III. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, 24-3, 51-71.
- Sugie, S., & Kajita, M. 1988 Mutual teaching in children. (unpublished)
- Sugie, S., Kamiya, T., Sato, M., & Ito, M. 1986 A case study of the school excursion of ski-training in the senior high school : planning, practice, and the results. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, 26-4, 115-169.
- Sugie, S., & Uda, H. 1987 A list of the reports of instructional practices in BAZU learning II. *Chukyo University Bulletin of the Faculty of the Liberal Arts*, 28-3, 261-288.
- Tanaka, Y. 1973 A study on the classroom : the relationships between the attitudes of teachers on his teaching and the group structure of the classroom. (unpublished)