

A Preliminary Study on Evaluation of Interpersonal Relationships between a Child with Severe Multi-handicap and a Teacher in the Teaching Situation

Taeko Teramoto

Tokyo Medical and Dental University

Michiyo Kobayashi

National Institute of Special Education

Abstract :Although the importance of good teacher-child relationships or rapport has been emphasized previously in the teaching of children with language and communication disorders, little effort has been made to analyze and evaluate the structure of these relationships. In the present study, a preliminary evaluation of the interpersonal relationship between a child with severe multi-handicap and a teacher in a teaching situation was made.

The relationship was defined as an encoding ("feeling" and "expression") and decoding ("perception" and "interpretation") process in the teacher-child interaction and was based on previous research by Tickle-Degnen and Rosenthal (1992). In this preliminary study, focus was only on the encoding process and the relationship between the teacher's subjective impression of the teaching interaction with the child (that is, the "feeling" process) and the corresponding behavioral aspects of teacher and child (that is, the "expression" process).

Teaching sessions analyzed aimed to promote development of the child's motor skills. Teaching interactions between the teacher and the child in each session were videotaped and classified into three categories (Positive, Negative and Neutral) according to the teacher's self-reports about impressions of the interaction with the child (that is, the teacher's "feeling" process). The Positive interaction was defined as an interaction in which the teacher felt smoothness (unimpeded/ relaxed/ satisfied) in teaching the child and a good relationship was presumed to have been established. The Negative interaction, on the other hand, was defined as an interaction in which the teacher had difficulty in teaching the child and a good relationship was presumed to have not been established.

The behaviors of both the teacher and child in each type of interaction (Positive or Negative) were systematically observed (partial interval recording/ 1 interval = 1 second) and further analyzed by utilizing lag sequential analysis.

Differences in behavioral aspects (that is, the "expression" process) between the Positive and Negative interactions were found in (1) the content of the behaviors exhibited and their frequencies (expressed as a percentage), (2) the relationship and direction of behaviors, and (3) the timing of behaviors. The relationship between the "feeling" and "expression" process was discussed taking into consideration these three points.

Key Words :child with severe multi-handicap, interpersonal relationships in the teaching situation, lag sequential analysis

1. Introduction

Most therapeutic or teaching researches are concerned with outcome and tend to demonstrate the effectiveness of teaching techniques or teaching devices. Interpersonal relationships in the teaching situation, on the other hand, are rarely explored although their importance is commonly recognized. Recently, however, researches about such relationship have focused on the teaching of children with language and communication disorders and the importance of building a good relationship between teacher and child has been emphasized (Nagasawa, 1999; Watabe, 1996).

The concept of a "good relationship", which resembles "reliance" or "rapport" indicating a positive emotional bond between teacher and child, is not completely clear. Although these concepts are important in teaching or therapeutic contexts and easy to understand (Altman,

1990; Bernieri, 1988; Harrigan & Rosenthal, 1986; Koss & Rosenthal, 1997; Tickle-Degnen & Rosenthal, 1990, 1992), they are difficult to operationalize and may lead to more confusion on the issue. Moreover, assessing whether or not a relationship is "good" is purely subjective and the impressions of the teacher, child and observer may not be the same. Difficulty in operationalizing these concepts and disagreement in subjective judgment place limits on our understanding of how to define a "good relationship".

Taking account of the difficulties described above, building a good relationship in the teaching situation is still considered to be one of the important factors in teaching success. Consequently, an effort should be made to evaluate the nature of the relationship.

If this is so, what aspect of the relationship should be focused on? Gelso and Carter (1985) suggested two perspectives: inside states and outside behaviors. The

former is defined as feelings that participants in teaching situations (e.g. child and teacher) have toward one another, and the latter is defined as the manner in which these feelings are expressed.

Tickle-Degnen and Rosenthal (1992) pointed out that the idea proposed by Gelso and Carter (1985) only referred to an encoding process (that is, "feeling" and "expression"), and lacked mention of a decoding process in which the "perception" of behavioral cues of each participant and an "interpretation" of these cues would be included. Tickle-Degnen and Rosenthal (1992) regarded the interpersonal relationship in therapy or in teaching situations as one of interaction between therapist (or teacher) and client (or child), which was supposed to involve their decoding process as well as encoding process. A schematic representation of this model was shown in Figure 1.

Based on previous research by Tickle-Degnen and Rosenthal (1992), the interpersonal relationship in teaching situations was defined as an "encoding and decoding process in the teacher-child interaction", and relationship between a girl with severe multi-handicap in pre-linguistic stage and a male teacher was analyzed in the present study. A "good relationship" was defined as one in which positive impressions such as "easy to interact with a partner" would be gained in the "feeling" process. In this study processes corresponding to the positive "feeling" process, that is, the case of a "good relationship," were examined and evaluation of the teacher-child relationship in teaching situations was made. Although all processes shown in Figure 1 should be analyzed to achieve a complete evaluation, only the encoding process, that is, "feeling" and "expression" was the focus of this preliminary study.

To analyze the teacher's encoding process, two

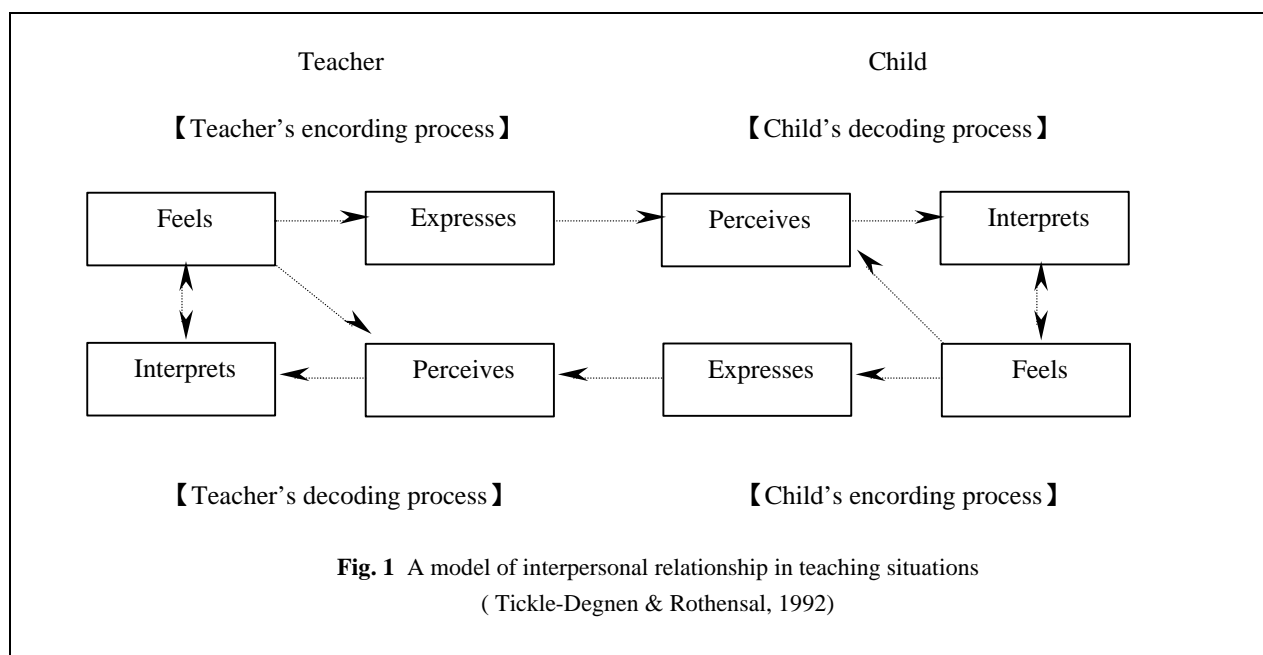
methods were used: self-reports and systematic observation. The former was regarded as a relevant method to clarify the teacher's impression of the interaction with the child and was used to analyze his "feeling" process. The latter was regarded as a relevant method for objective measurement of the teacher's behavior and was used to analyze his "expression" process. These observed behaviors were examined sequentially, namely they were examined in temporal relation to the child's behaviors. For this purpose, lag sequential analysis (Bakeman & Gottman, 1997; Bakeman & Quera, 1995) was utilized.

As for the child's encoding process, her "expression" process was analyzed and examined by systematic observation and lag sequential analysis in the same way as the teacher's encoding process. The child's "feeling" process, on the other hand, could not be analyzed by utilizing self-reports in which verbal responses were required, because the child was at the pre-linguistic stage. As the only accessible process for the child was "expression", it is suggested that her "expression" process be analyzed cautiously to compensate for the failure of analyzing her "feeling" process.

After analyzing and examining each process described above, the interpersonal relationship between the teacher and the child in teaching situations was discussed.

2. Purpose

Most children with severe multi-handicaps have problems in development of language and communication as well. They are at the pre-linguistic stage in many cases and their non-verbal cues are not clear so that communication with others is difficult. To establish a good relationship with these children in



teaching situations is regarded as one of the most important teaching objectives and the first step is to evaluate and understand the relationship properly.

In the present study, analysis of the interpersonal relationship between a child with severe multi-handicap and a teacher in the teaching situations was made according to the theoretical framework outlined in the Introduction to this paper. That is to evaluate and understand the relationship. The purpose of this study was to clarify the teacher's subjective impressions of the interaction with the child (i.e. the teacher's "feeling" process), and to illustrate corresponding behavioral aspects in the teacher-child interaction, that is, their "expression" process.

3. Methods

3-1. Subjects

3-1-1. Child

A girl with severe multi-handicap in the second grade of an elementary school for children with disabilities participated in the teaching sessions. The child's intellectual and motor skill development was severely delayed. She was paralyzed on the left side and had poor coordinated movement of arms and legs. Her means of communicating was mainly non-verbal (e.g. vocal expressions, pointing, nods, and touch). Although she sometimes nodded or shook her head indicating "yes" or "no", these responses were not stable. She hit herself or banged her own head on the wall when her intentions were not clear to others. She could understand routine verbal cues (e.g. "sit down on the chair" and "go to the toilet") and preferred initiating interaction with others. Results of the Enjyoji Developmental Test for this child could be seen in Table 1.

Table 1 Result of Enjyoji Developmental Test

Motor skills	Moving	2:09
	Manipulating	1:09
Social skills	Daily routines	2:03
	Interpersonal relationship	2:00
Language	Utterance	0:10
	Understanding	1:09

3-1-2. Teacher

A male teacher with 15 years of experience in the field of special education participated in the teaching sessions. He had been teaching the child for 1 year.

3-2. Procedure

3-2-1. Teaching sessions

Teaching sessions aimed to promote the development of the child's motor skills. The teacher attempted to touch and tap the child's arms and legs in time with music with the objective of synchronizing the child's responses. As the child disliked being touched on her paralyzed left arm, the teacher had to be careful not to upset her. Each session lasted for about 10 minutes and sessions were conducted several times per week. When the child showed strong refusal to participate in the session, the teacher stopped the session immediately.

3-2-2. Self-report

The teacher made a self-report on relationship with the child after each session. The self-report was made according to a newly constructed questionnaire for this study and consisted of twelve 5-point rating items (1-Not at all, 2-Not so much, 3-Neutral, 4-A little, 5-Very much) and two open-question items as shown in Table 2.

Results of 5-point rating items were scored from 1 to 5 (e.g. 1-Not at all, 5-Very much). High scores were seen

Table 2 Contents of Teacher Self-reports

Items	Format
1 I (Teacher) enjoyed interaction with child.	5-point rating scales 1 – Not at all 2 – Not so much 3 – Neutral 4 – A little 5 – Very much
2 Child seemed to enjoy interaction .	
3 Teacher could regulate behaviors according to rhythm and pace of child.	
4 Teacher could understand intention and feeling of child.	
5 Child seemed to pay attention to surroundings (persons and objects).	
6 Teacher could stimulate child after careful observation .	
7* Teacher experienced difficulty in communicating with child.	
8 Teacher could wait for child's initiation of interaction.	Open questions
9 Teacher frequently talked to child.	
10 Teacher frequently gave non-verbal cues to child.	
11 Teacher initiated and led interaction in most cases.	
12 Teacher could adjust behavior to child's by doing same thing.	
13 Condition of child during session?	
14 Did interaction with child proceed smoothly?	

Note: In Item 7 rating scores were reversed: For example, "Very much" scored 1 point.

as an indication of a good relationship between the teacher and the child (Note that in Item 7, rating scores were reversed: e.g. 1-Very much and 5-Not at all). Judging from these rating results and the descriptive contents of Items 13 and 14, teaching interactions were classified into three categories: Positive interactions in which a good relationship was presumed to have been established, Negative interactions in which a good relationship was not presumed to have been established, and Neutral.

3-2-3. Video recording

Each teaching session was videotaped (SONY, CCD-SC55NTSC) and video recordings were made five times. From these sessions typical Positive and Negative interaction were selected and the first 4 minutes of these tapes were systematically observed.

3-2-4. Systematic observation and lag sequential analysis

In setting coding categories, verbal and non-verbal aspects of behaviors were taken into account and three levels ("Vocal or Verbal cues", "Approach-Avoidance", and "Attention") were specified. Although such classification seemed to be rather simplistic, it was considered to be appropriate for measurement of the child's primitive behaviors and exploration of the relations between the teacher's and child's behaviors. Coding categories and their definitions were shown in Table 3.

As for sub-categories of the child's "Vocal cues", "Negative vocal cues", "Positive vocal cues", and "Others" were settled. "Approach to" and "Avoidance of" the teacher and "Others" were specified for "Approach-Avoidance". "Attention" to the teacher and "Others" were specified for sub-categories of the child's "Attention".

As for the teacher's "Verbal cues", two sub-categories were specified: "Speech" and "Others." Sub-categories of the teacher's "Approach-Avoidance" and "Attention" were specified in the same way as those of the child.

According to the coding categories shown in Table3, behaviors of both the teacher and child were coded using partial interval recording (1 interval = 1 second) (Bakeman & Gottman, 1997). Coded data were taken into further analysis using lag sequential analysis (Bakeman & Gottman, 1997; Bakeman & Quera, 1995).

Lag sequential analysis is commonly regarded as a useful method to capture the dynamic temporal aspects of inter-individual interaction. In the present analysis the *p* value was set at .05 and lag positions were settled from 0 to 5, which meant that the temporal gap between behaviors was examined from 0 to 5 seconds.

4. Results

4-1. Results of self-report

Positive contents of open questions in self-report (Item 13 and 14) (e.g. "the child's condition was good" or "interaction with the child was smooth") were regarded

Table 3 Coding Categories

	Categories	Definition
Child	Vocal cues	
	Negative vocal cues	Cry or unpleasant vocal expressions
	Positive vocal cues	Laugh or pleasant vocal expressions
	Others	No vocal expressions
	Approach-Avoidance	
	Approach	Approach, reach, or touch teacher
	Avoidance	Avoid or refuse teacher
	Others	Others
	Attention	
	Attention	Pay attention or turn head toward teacher
	Others	Others
Teacher	Verbal cues	
	Speech	Verbal expressions directed to child
	Others	No verbal expressions
	Approach-Avoidance	
	Approach	Pull, embrace, or approach child
	Avoidance	Avoid or go away from child
	Others	Others
	Attention	
	Attention	Pay attention or turn head toward child
	Others	Others

as indicators of the Positive interaction. On the other hand, negative contents (e.g. "the child's condition was not so good" or "interaction with the child did not go smoothly") were regarded as indicators of the Negative interaction.

Results of items on the 5-point rating scales (Items 1-12) were shown in Figure 2. Higher scores (i.e. greater than 4) were gained on all items in the Positive interaction. Lower scores, on the other hand, were prominent in the Negative interactions, especially on items concerning "the child's enjoyment in interaction" (Item 2), "difficulty in communicating with the child" (Item 7 in which rating scores were reversed), and "waiting for the child's initiation of interaction" (Item 8). Items in which the same scores were gained both in Positive and Negative interactions were concerned with "understanding of the child's intention" (Item 4), "talking

to the child" (Item 9), and "the teacher's lead in interaction" (Item 11).

4-2. Results of systematic observation

As for the coded data, 90% intra-observer agreement and .65 Cohen's kappa were achieved, so it was suggested that the data was reliable for this preliminary study (see Cohen, 1960; Fleiss, 1981; Hartmann, 1982, 1984; Martin & Bateson, 1993).

Observed frequencies and percentages of each behavioral category were shown in Table 4. Frequencies in Table 4 indicated total number of observed intervals and percentages indicated observed intervals divided by total intervals (i.e. 224 intervals). The teacher's "Avoidance" which was not observed at all and "Others" were omitted from this table.

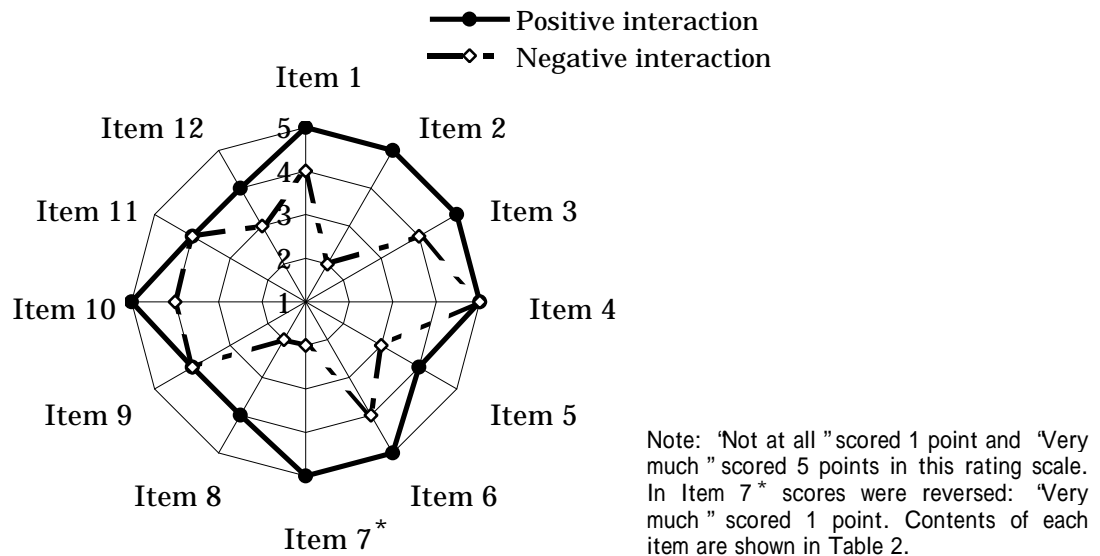


Fig. 2. Result of Items for 5-point Rating Scales in Teacher Self-reports.

Table 4 Observed Frequencies and Percentage of Each Behavioral Category

Behavioral categories		Positive interaction		Negative interaction	
		Frequency	(%)	Frequency	(%)
Child	Negative vocal cues	0	(0.00)	206	(91.96)
	Positive vocal cues	13	(5.80)	0	(0.00)
	Approach	14	(6.25)	33	(14.73)
	Avoidance	0	(0.00)	52	(23.21)
	Attention	78	(34.82)	17	(7.59)
Teacher	Speech	52	(23.21)	40	(17.86)
	Approach	7	(3.13)	92	(41.07)
	Attention	173	(77.23)	125	(55.80)

Note: Frequencies indicate total number of observed intervals and percentages indicate observed intervals divided by total intervals (224 intervals). Teacher's "Avoidance" was not observed at all, and "Others" are not included.

Specific behaviors of two types of interactions, for example, the child's "Positive vocal cues" in the Positive interaction and the child's "Negative vocal cues" and "Avoidance" in the Negative interaction, were prominent. The child's "Approach" to the teacher in the Negative interaction and the child's "Attention" to the teacher in the Positive interaction were more frequent. Although the teacher's "Approach" to the child in the Negative interaction was more frequent than in the Positive interaction, the teacher's "Speech" and "Attention" did not differ prominently in frequencies between two types of interactions.

4-3 .Results of lag sequential analysis

4-3-1 .Relation between behaviors

The results of lag sequential analysis were shown in Figure 3, in which temporally related behaviors ($p < .05$) were connected by solid or dotted arrows (difference between these arrows were explained below). Numbers in Figure 3 indicated lag positions with statistic significance ($p < .05$), which was also explained below.

In the Positive interaction, temporal relations were seen between the teacher's "Approach" and the child's "Approach" or "Attention", and between the teacher's

"Attention" and the child's "Attention". In the Negative interaction, on the other hand, these relations were seen between the teacher's "Approach" and the child's "Negative vocal cues" or "Approach" or "Avoidance" or "Attention", and between the teacher's "Attention" and the child's "Avoidance" or "Attention".

These findings showed that, (1) temporal relations between behaviors were more prominent in the Negative interactions than in the Positive interactions and, (2) the teacher's "Speech" was not related to any behaviors of the child in either type of interaction.

4-3-2 .Directions of behaviors

Arrows in Figure 3 indicated direction of behaviors ($p < .05$). Dotted arrows to the right indicated uni-directional temporal patterns in which only one-way behavioral cues from the teacher to the child were prominent. Dotted arrows to the left, on the other hand, indicated uni-directional patterns from the child to the teacher. Solid arrows indicated bi-directional temporal patterns in which behavioral cues were mutually exchanged between the teacher and the child.

Bi-directional temporal patterns were prominent in the Negative interactions and uni-directional temporal patterns from the teacher to the child were prominent in

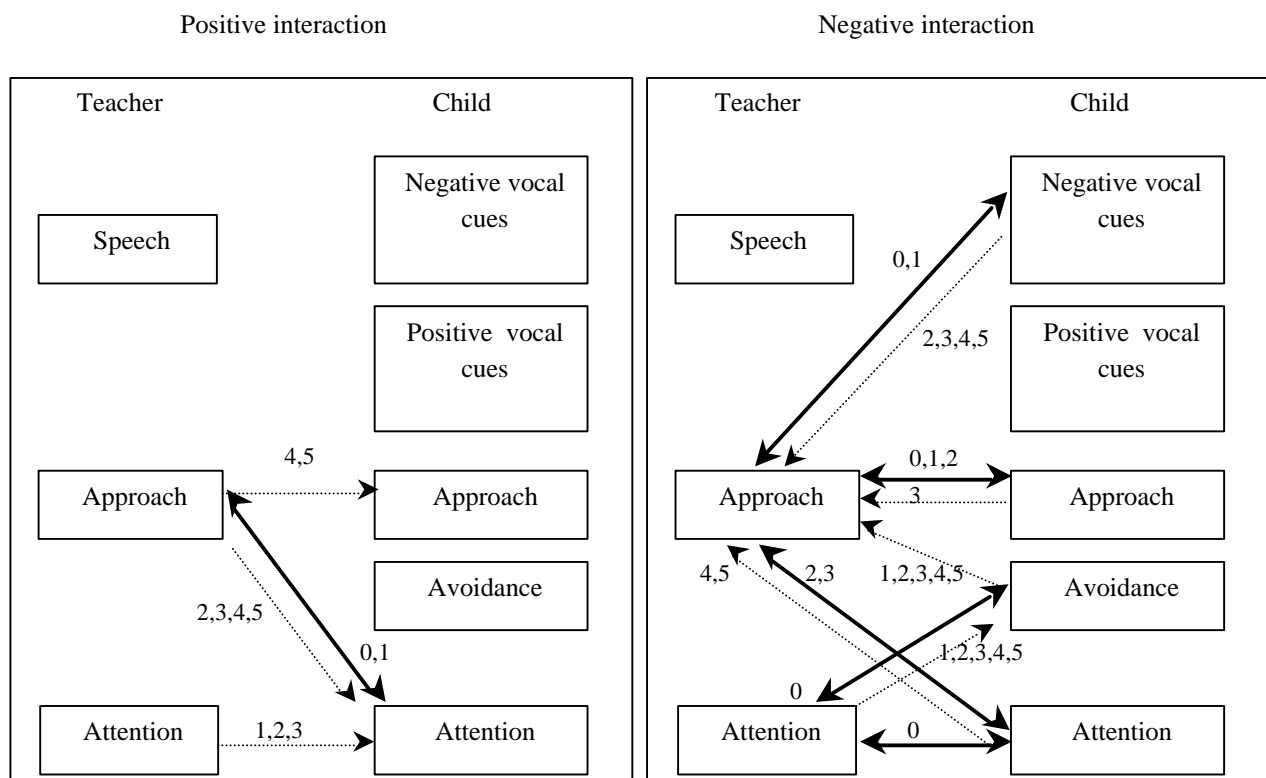


Fig. 3. Temporal Relationship of Behaviors Detected by Lag Sequential Analysis.

the Positive interactions. In the Negative interactions, most uni-directional temporal patterns were from the child to the teacher with the exception of the pattern from the teacher's "Attention" to the child's "Avoidance".

4-3-3 .Timing of behaviors

Temporal patterns shown in Figure3 were re-examined in terms of lag positions, that is, timing of behaviors (Table 5).

Arrows in Table5 indicated the direction of interactions. Filled-in circles indicated bi-directional temporal patterns and open circles indicated uni-directional interactions ($p < .05$).

Most bi-directional temporal patterns expressed with filled circles in both types of interaction were seen in lower lag positions from 0 to 2, except the pattern between the child's "Attention" and the teacher's "Approach" in the Negative interactions. This finding showed that the timing of most bi-directional temporal patterns was fast.

Most uni-directional temporal patterns expressed with open circles in both types of interaction, on the other hand, were seen in relatively higher lag positions (i.e. greater than 2), with the exception of the pattern from the teacher's "Attention" to the child's "Attention" in the Positive interactions, the pattern from the child's "Avoidance" to the teacher's "Approach" and from the teacher's "Attention" to the child's "Avoidance" in the Negative interactions. This finding showed that timing of most uni-directional temporal patterns was delayed.

In conclusion, significant trends in lag positions were not observed within types of interaction (Positive or

Negative), but within directional patterns (i.e. uni-directional or bi-directional).

5. Discussion

From results of this study the differences in behavioral aspects (the "expression" process), between types of interaction (Positive and Negative), classified according to the teacher's subjective impression ("feeling" process) were found in (1) the content of behaviors and their frequencies (or percentages), (2) relations and direction of behaviors, and (3) timing of behaviors. The relationship between the "feeling" and "expression" process was discussed taking these three points into consideration.

5-1 .Content of behaviors and percentages

Differences in behavioral aspects between the two types of interaction were found in the behavioral contents and their percentages (Table 4). Generally frequencies and percentages are familiar information about behavioral aspects of interaction. For example the child's "Positive vocal cues" in the Positive interaction, or "Negative vocal cues" or "Avoidance" in the Negative interaction were direct indicators of each type of interaction and seemed to be understandable cues for the teacher. Such information about frequencies, however, only showed times of occurrence and did not refer to the relationship between the teacher's and child's behaviors. Moreover, frequent behaviors were not always influential in the relationship with others. Therefore, efforts to evaluate and understand the interpersonal

Table 5 Temporal Patterns of Behaviors and Lag Positions

Temporal patterns of behaviors				Lag positions					
				0	1	2	3	4	5
Positive interaction	Bi-directional	C's Attention	T's Approach						
		T's Approach	C's Approach						
	Uni-directional	T's Approach	C's Attention						
		T's Attention	C's Attention						
Negative interaction	Bi-directional	C's N vocal cues	T's Approach						
		C's Approach	T's Approach						
		C's Avoidance	T's Attention						
		C's Attention	T's Approach						
		C's Attention	T's Attention						
	Uni-directional	C's N vocal cues	T's Approach						
		C's Approach	T's Approach						
		C's Avoidance	T's Approach						
		C's Attention	T's Approach						
		T's Attention	C's Avoidance						

Note: 'C' indicates the child and 'T' indicates the teacher. Arrows indicate direction of the interaction. Filled circles indicate bi-directional temporal patterns and open circles indicate uni-directional temporal patterns ($p < .05$).

relationship between teacher and child should not be done only from frequencies of their behaviors. Following further analysis about relation between the teacher's behaviors and the child's would be appropriate and necessary.

5-2 .Relationships and direction of behaviors

The relationship between the teacher's and the child's behaviors was observed and differences in the direction of the interaction were found between two types of interaction (see Figure 3). The direction of interaction was either bi-directional or uni-directional. The former patterns were prominent in the Negative interactions, which seemed to indicate that the teacher-child interaction was more reciprocal, active, and web-related in this type of interaction.

As for the latter, patterns from the teacher to the child were prominent in the Positive interactions and the reversed pattern, that is, patterns from the child to the teacher were prominent in the Negative interactions. These findings suggested that teacher-initiated patterns, in which the teacher initiated the interaction and smoothly influenced the child, were prominent in the Positive interactions. The reversed pattern, that is, child-initiated patterns, on the other hand, seemed to develop in the Negative interactions and the teacher appeared to follow the child.

Although bi-directional interaction and child-initiative patterns are commonly considered to be preferable in teaching situations, these patterns were seen in the Negative interactions in the present study. Commonly preferable patterns could be found in negative interpersonal relationships, which seemed to be one example of the gap between subjective impressions (the "feeling" process) and behavioral aspects (the "expression" process) of interaction. Therefore, these gaps should be taken into account and treated cautiously in evaluating interpersonal relationships in teaching situations.

5-3 .Timing of behaviors

Differences in temporal aspects of interactions, that is, timing of related behaviors were found between bi-directional and uni-directional patterns, but not between two types of interaction (Positive or Negative) (see Table 5).

Bi-directional temporal patterns were seen in lower lag positions, which implied that these patterns were in fast tempo. Uni-directional temporal patterns, on the other hand, were found in higher lag positions, which implied that responses to others were delayed in these patterns.

Timing is an important aspect in interaction. Tune in tempo with each other and synchronization of behaviors

are regarded as indicators of good interpersonal relationship (Tickle-Degnen & Rosenthal, 1990). To respond immediately to others is one example of these indicators. Such responding patterns in fast tempo were found in bi-directional temporal patterns in this study. Bi-directional temporal patterns were immediate patterns in terms of timing of the interaction and both patterns were regarded as indicators of a good interpersonal relationship. These patterns, however, were found in the Negative interactions in this study, which also implied one of gaps between the subjective impressions (the "feeling" process), and behavioral aspects (the "expression" process) of interaction. The need to interpret the nature of these gaps with care was again emphasized here.

6. Conclusion

From results of the present preliminary evaluation of interpersonal relationships in teaching situations according to the theoretical framework proposed by Tickle-Degnen and Rosenthal (1992), implications about the relation between components of the encoding process, that is, "feeling" and the "expression" process were gained.

Although only the encoding process of interpersonal relationships was investigated in this preliminary study, considering that the only accessible process to the child at the pre-linguistic stage is her "expression", the teacher's high-developed ability to "perceive" and "interpret", that is, high decoding ability of the child's "expression" was required. Therefore, to promote better understanding of interpersonal relationship in teaching situations, further analysis of the decoding process as well as encoding process is necessary.

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Self-Efficacy, Coping Behavior, and the Health Locus of Control in Junior High School Students with Renal Disease

Tetsuro Takeda

Department of Education for Children with Health Impairments

Abstract: The purpose of this research was to investigate the relationship between perceived self-efficacy, coping behavior, response to stress, and the health locus of control (HLC). Subjects were 44 junior high school students who were hospitalized for renal disease and 61 healthy students as controls. The results of the analysis were as follows:

1. There was no significant difference in self-efficacy, coping behavior, responses to stress, and HLC between students with renal disease and healthy students.

2. There was a positive correlation between self-efficacy and active coping as well as a negative correlation between self-efficacy and passive coping in the renal disease group. There was a significant positive difference in active coping between subjects with high scores and those with low scores in self-efficacy, and a significant negative difference between the two groups in passive coping.

3. A negative correlation was found between self-efficacy and response to stress (irritation and anger) in the renal disease group. A positive correlation was found between self-efficacy and response to stress (cognition and learned helplessness in the renal disease group). The ratings of stress response of subjects with high self-efficacy were significantly lower than subjects with low self-efficacy in the renal disease group.

4. A positive correlation was found between self-efficacy and HLC in the renal disease group. The HLC rating of subjects with high self-efficacy was significantly higher than those of subjects in the low self-efficacy group.

Based on these results, the effect of self-efficacy on the coping behavior and responses to stress in students with renal disease was discussed. The relationship between self-efficacy and HLC was also discussed.

Key Words: Renal disease, self-efficacy, coping behavior, responses to stress, health locus of control

I. Introduction

Students with renal disease make up 8% of those receiving education for the children with health impairments.²³⁾ Renal disease requires strong self-control and self-management over a long period of time. It also requires a similar regime of drug treatment such as the use of steroids and its concomitant side effects, daily living habits such as eating and exercise restrictions, and cares to prevent relapse and infection.⁹⁾ Students with renal disease are susceptible to a variety of problems, for example, problems in school such as slow academic progress due to hospitalization, or going to hospital for treatment. They are also susceptible to psychological problems such as anxiety regarding side effects, inferiority complexes about their self-image of low height and obesity, and frustration caused by pervasive restrictions in their daily lives like eating and exercise.⁹⁾ Therefore, medicine and education should support these students in a cooperative manner. Education for students with health impairments, in cooperation with medical staff such as physicians, includes teaching how to develop self-management ability mainly during “educational therapeutic activities, *” with the aim of obtaining an understanding of the disease and the appropriate psychological adaptation.

After students leave hospital and return to their ordinary school, however, many of them end up being re-hospitalized due to weak self-management of exercise and eating. For students with renal disease to develop self-management ability, it is necessary to provide them with appropriate guidance which is tailored to the psychological characteristics of individual students during school periods such as educational therapeutic activities.

Bandura²⁾ coined the word ‘self-efficacy’** to represent the individual’s belief as to how successfully he or she can perform a course of behavior needed to produce certain results. He also named the level at which an individual becomes aware of their acquired self-efficacy as “perceived self-efficacy.” In short, perceived self-efficacy means the sense of possible accomplishment perceived by an individual before he or she initiates a certain behavior. It is a sense of expectation felt by an individual about attaining certain results. It is also a kind of confidence, which develops when an individual becomes aware of such an expectation. It is said that high self-efficacy promotes appropriate behavior for maintaining and improving an individual’s health.³⁾ There are also reports that in the stress management process, high self-efficacy promotes active coping behavior and eases the responses to

stress.^{6) 14)} Regarding the relationship between self-efficacy and HLC, it was reported that students with chronic disease who had high self-efficacy expectancy had a higher internal locus of control than those who had low self-efficacy expectancy.¹⁶⁾

HLC is a cognitive factor, which predicts health behavior. Rotter¹²⁾ proposed a concept of “locus of control,” as a variable representing a personality that relates to how an individual recognizes the relationship between results are controlled by the behavior and reinforcement. The concept is divided; one is an internal locus of control, the idea being that results are controllable by the behavior of an individual, and the other is an external locus of control in which the environment and other people, regardless of one’s own behaviors. HLC is this concept of locus of control applied to health behavior. In other words, those with a strong internal locus of control believe that health can be attained by their own efforts while those with a strong external locus of control believe that proper health can be attained through dependence on medical care providers, or by sheer luck. That is, they feel that proper health is a consequence of their environment, or other people, independent of their own behavior. To evaluate HLC is to conduct a cognitive evaluation on whether-students with renal disease are trying to manage their lives on their own initiative or tend to depend on others. This kind of information will be important for supporting their self-management. If their HLC is rated objectively, it is possible to provide guidance to meet their cognitive characteristics attitudes toward their disease, serving as a significant source of information when providing guidance. There exist only a few studies of the relationships among self-efficacy, coping behavior, and HLC in students with chronic disease. There have been no such studies for students with renal disease.

This study investigates the circumstances of students with renal disease with the objective of supporting their self-management. Investigation was done to ascertain what kind of awareness of the disease the students had in their daily lives, what was the biggest problems they faced in their daily lives, and what kind of coping behavior they used. At the same time, we examined the effects of self-efficacy expectancy on coping behavior against the disease and the related stress, as well as its relationship with HLC.

II. Subjects and Methodology

1. Subjects

We conducted a questionnaire-based study of 44 junior high school students with renal disease (24 males and 20 females) who were receiving education at special

schools for the health impaired while under hospitalization in seven hospitals, including national sanitariums, and 61 healthy students (28 males and 33 females) at ordinary public junior high schools. The study was conducted in June and July 1999. Of the 44 students with renal disease, 21 students had chronic nephritis, 13 students had nephritic syndrome, 5 students had IgA nephropathy, and 5 students had purpura nephritis. The mean/average length of hospitalization at the time of the questionnaire was 16.00 months (the standard deviation was 16.99 months). The number of students rehospitalized for relapses was 28 (63.6%).

2. Methodology

[1] Survey of the Consciousness of Renal Disease

To investigate what kind of consciousness students with renal disease have of their own disease, we adapted part of a questionnaire on kidney disease utilizing special items in the KDQOLTM (Kidney-disease-targeted measures of quality of life questionnaire).⁵⁾ The items were:

1. Renal disease is a big obstacle in my life.
2. Renal disease takes up too much of my time.
3. I am irritated by renal disease.
4. I feel that I am a burden on my family.

Students were asked to select the response that best matched their feelings from the five responses “I strongly agree,” “I somewhat agree,” “I cannot say either,” “I somewhat disagree,” and “I strongly disagree.”

[2] Causes of Stress and Coping Methods

We asked the students with renal disease to write freely what was their biggest problem while hospitalized and how they were trying to solve that problem.

[3] Rating of Self-Efficacy Expectancy

We used the self-efficacy expectancy rating system proposed by Shimada¹⁴⁾. That is, a general self-efficacy expectancy rating scale consisting of 12 items. Questions include, “If I try hard, I will be good at a subject I am currently weak at,” and “No matter how hard I try, I don’t think I will be able to lead the life that I wish to lead.” We asked students to choose a response from the four options available which best represented their opinion, namely, “I strongly agree,” “I somewhat agree,” “I somewhat disagree,” and “I strongly disagree.” We used Shimada’s rating scale, providing 4 points for the highest level of self-efficacy to 1 for the lowest.

[4] Rating of Coping Behavior

We used the rating scale of coping behavior designed by Sakano, Miura, and Shimada ¹³⁾. Coping behaviors, which individuals take against a stressor, have been noted as one of factors, which is effective in minimizing the damage caused by the stressor and lessening the response to stress. Sakano and others induced two factors, active and passive coping behaviors, from the results of factor analysis. Items such as, “to make efforts to change it,” “to make efforts to change myself,” “to find causes,” and “to come up with a countermeasure,” are listed as active coping, while items such as, “to accept it as bad luck,” and “to try not to think about it,” are listed as passive coping. The rating consists of four levels with 16 items. Following the rating method by Sakano *et al.*, we used the four levels method (from “Do often,” to “Don’t do at all”), and gave points between 4 and 1 from the highest frequency downwards.

[5] Rating of Stress Response

We used the stress response rating scale for junior high school students developed by Okayasu and others ¹¹⁾. This rating scale consists of four factors (46 items): viz. 7 items regarding irritation and anger, 19 items regarding physical responses, 8 items regarding depression and anxiety, and 12 items regarding cognition and thoughts of helplessness. Regarding their state of health and mind, we asked respondents to choose the best-fit response from, “does not apply to my case at all,” (1 point) “applies a little to my case,” (2 points) “applies well to my case,” (3 points) and “applies quite well to my case,” (4 points) using the assessment measure devised by Okayasu and others.

[6] Rating of HLC

We used the rating scale of the Health Locus of Control developed by Watanabe ²⁰⁾, with minor simplifications of Chinese characters into hiragana (Japanese phonetic syllables), so that junior high school students would not have trouble understanding the questions. Regarding health issues, we asked students to choose the response that best fitted their opinion from, “I agree,” “I agree a little,” “I disagree a little,” and “I disagree.” We allocated 4, 3, 2, and 1 point from the highest to lowest internal locus of control. Question items included, “When you get sick, do you tend to think you are responsible for causing it?” “Do you think you cannot avoid getting sick even though you try?” and “Do you think you can lead a healthy life if you take an appropriate course of action?”

Table 1. “Renal disease is a big obstacle in my life.”

Response	No. of students (%)
“Applies exactly to my case.”	17 (38.6)
“Applies to my case by and large.”	9 (20.5)
“Cannot say either.”	7 (15.9)
“Hardly applies to my case.”	2 (4.5)
“Does not apply to my case at all.”	9 (20.5)

Table 2. “Renal disease takes up too much of my time.”

Response	No. of students (%)
“Applies exactly to my case.”	15 (34.1)
“Applies to my case by and large.”	11 (25.0)
“Cannot say either.”	4 (9.1)
“Hardly applies to my case.”	5 (11.4)
“Does not apply to my case at all.”	9 (20.5)

Table 3. “I am irritated by renal disease.”

Response	No. of students (%)
“Applies exactly to my case.”	11 (25.0)
“Applies to my case by and large.”	4 (9.1)
“Cannot say either.”	7 (15.9)
“Hardly applies to my case.”	13 (29.5)
“Does not apply to my case at all.”	9 (20.5)

Table 4. “I feel that I am a burden to my family.”

Response	No. of students (%)
“Applies exactly to my case.”	21 (47.7)
“Applies to my case by and large.”	9 (20.5)
“Cannot say either.”	9 (20.5)
“Hardly applies to my case.”	3 (6.8)
“Does not apply to my case at all.”	2 (4.5)

III. Results

1. Investigation of consciousness of Renal Disease

Tables 1, 2, 3, and 4 presented the responses in investigation of consciousness of renal disease with four question items listed below:

1. Renal disease is a big obstacle in my life.
2. Renal disease takes up too much of my time.
3. I am irritated by renal disease.
4. I feel that I am a burden to my family.

Table 5. Biggest Stress Perceived by Students with Renal Disease

Regarding the disease
Restrictions for eating and exercise
Taking drugs
Regarding hospital life
Strict observance of time
Inability to go out freely
Inability to do what students like to do
Living with people students don't like
Regarding personal relations
(Within a limited environment of the hospital)
Worrying about relationships with hospital
roommates and school friends
Getting along with hospital staff
Getting along with people students don't like
Regarding studies
Getting behind the study for an entrance
examination
Getting behind other students in learning due
to a long absence from school

Table 6. Coping Methods of Students with Renal Disease against Stressors

-
- Try to sleep well.
 - Do not think about it because nothing can be done anyway.
 - Try to forget everything.
 - Pretend nothing is happening.
 - Do not think about a problem much.
 - Do not think about a problem too deeply.
 - Seek advice from family members and others because I don't know what to do.
 - Avoid people and stay alone because I can't solve it anyway.
 - Let things develop how they may, but want to run away from it.
 - Try to be careful as to what I say in front of people.
 - Express how I feel to my friends, or family.
 - Seek advice from doctors, or nurses as to how to solve the problem.
 - Try to find something else good because worrying about it doesn't help.
 - Solve it by actively encouraging a discussion on my own initiative.
 - Blame myself because I am responsible for it.
 - Try not to exhibit my own feelings.
-

2. Cause of Stress and Coping Method

We asked the students to respond to a question on the biggest current problems in their lives, that is, the source of stress, and we classified into four categories the contents of freely written answers using the KJ Method, namely, "Regarding disease," "Regarding hospital living," "Regarding personal relations," and "Regarding studies." (see Table 5). At the same time, we present students' comments on ways to solve such stressors in Table 6.

3. Relationship between Self-Efficacy and Coping Behavior as well as between Self-Efficacy and Stress Response

[1] Comparisons between Students with Renal Disease and Healthy Students

We formed two clusters of students with renal disease and healthy students and conducted a one-factor analysis of variance with points obtained from ratings of self-efficacy, coping behavior (active coping and passive coping), and stress response (irritation and anger, physical response, depression and anxiety, and cognition and thoughts of helplessness), as a dependent variable. There was no significant difference between students with renal disease and healthy students. In other words, no difference was found between students with renal disease and healthy students in terms of points obtained on ratings of self-efficacy, coping behavior, and stress response.

[2] Relationship between Self-Efficacy and Coping Behavior as well as between Self-Efficacy and Stress Response

(1) Correlation between Self-Efficacy and Coping Behavior as well as between Self-Efficacy and Stress Response

Table 7 shows a correlation between self-efficacy and coping behavior as well as between self-efficacy and stress response in students with renal disease and healthy students. In case of students with renal disease, there was a positive correlation between self-efficacy and active coping while there were negative correlations between self-efficacy and passive coping as well as between self-efficacy and stress response (irritation and anger, physical response and cognition and thoughts of helplessness).

In the case of healthy students, there was a positive correlation between self-efficacy and active coping and a negative correlation between self-efficacy and stress response (irritation and anger, physical response, cognition and thoughts of helplessness).

four subordinate categories of stress response (irritation

Table 7. Pearson correlation between Self-Efficacy and Coping Behavior as well as between Self-Efficacy and Stress Response

Variable	Coping behavior			Stress response		
	Active coping	Passive coping	Irritation & anger	Physical response	Depression & anxiety	Cognition & thoughts of helplessness
Students with renal disease	.605**	-.532**	-.349*	-.148n.s	-.162n.s	-.551**
Self-efficacy						
Healthy students	.432**	-.204n.s	-.478	-.558**	-.237n.s	-.547**

* $p < .05$, ** $p < .01$ **Table 8. Mean, Standard Deviation, and F Value of Coping Behavior and Stress Response among the High and Low Self-Efficacy Groups**

Students with renal disease				Healthy students			
Variable	High group (N=24)	Low group (N=20)	F value	Variable	High group (N=36)	Low group (N=25)	F value
Coping behavior				Coping behavior			
Active coping	25.00 (5.78)	20.15 (4.40)	9.36**	Active coping	26.86 (5.71)	20.04 (5.35)	22.17**
Passive coping	12.61 (3.93)	15.5 (3.43)	6.52*	Passive coping	12.69 (3.93)	14.04 (3.43)	2.29 n.s
Stress response				Stress response			
Irritation & anger	14.65 (5.53)	17.60 (6.40)	2.63 n.s	Irritation & anger	13.64 (5.18)	18.72 (6.91)	10.79 **
Physical response	34.13 (9.19)	36.05 (9.50)	0.45 n.s	Physical response	33.39 (10.08)	45.44 (13.61)	15.79**
Depression & anxiety	14.39 (5.08)	15.55 (5.91)	0.48 n.s	Depression & anxiety	14.36 (4.35)	16.40 (6.60)	2.12 n.s
Cognition & thoughts of helplessness	22.39 (7.46)	27.65 (7.51)	5.27*	Cognition & thoughts of helplessness	24.17 (6.82)	31.56 (8.60)	13.99**

* $p < .05$, ** $p < .01$ **(2) Comparison between High and Low Self-efficacy Groups**

Based upon the self-efficacy mean (36 points) of students with renal disease and healthy students, we assigned students into four groups; students with renal disease with high or low self-efficacy and healthy students with high or low self-efficacy. Those in high self-efficacy groups totaled 24 students with renal disease and 36 healthy students. Those in low self-efficacy groups numbered 20 students with renal disease and 25 healthy students. We conducted a one-factor analysis of variance using high and low self-efficacy groups separately among students with renal disease and healthy students, with two subordinate categories of coping behavior (active and passive coping) as well as

and anger, physical response, depression and anxiety, and cognition and thoughts of helplessness) as a dependent variable. Results are shown in Table 8.

Among students with renal disease, there was a significant difference between high vs. low self-efficacy groups in active and passive behaviors. That is, the high self-efficacy group earned significantly higher points for active coping than the low self-efficacy group while earning significantly lower points for passive coping than the low self-efficacy group. In the stress response, there was a significant difference in, "cognition and thoughts of helplessness." That is, the low self-efficacy group scored significantly higher than the high self-efficacy group in terms of, "cognition and thoughts of helplessness."

Among healthy students, there was a significant difference in positive coping between high and low self-efficacy groups. That is, the high self-efficacy group scored significantly higher than the low counterparts in active coping. In the stress response, there were significant differences in, “irritation and anger,” “physical response,” and “cognition and thoughts of helplessness.” That is, the low self-efficacy group scored significantly higher than the high counterparts in, “irritation and anger,” “physical response,” and “cognition and thoughts of helplessness.”

4. Relationship between Self-Efficacy and HLC

In HLC, there was no difference between students with renal disease and healthy students. Table 9 shows the correlation between self-efficacy and HLC among students with renal disease and healthy students. There was a positive correlation both among students with renal disease and healthy students.

Table 9. Pearson correlation between Self-Efficacy and Health Locus of Control

Variable	Health Locus of Control
Self-efficacy	Students with renal disease .581**
	Healthy students .585**

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

When the high and low self-efficacy groups are compared, the high score groups both among students with renal disease and healthy students exhibited a higher internal locus of control as shown in Table 10.

We then grouped by gender and conducted a one-factor analysis of variance with points obtained from and HLC as a dependent variable. As a result, among students with renal disease, we found either a significant difference, or a different tendency in self-efficacy ($F [1,42] = 5.35$, $p < .05$), active coping ($F [1,41] = 3.14$, $.05 < p < .10$), and depression and anxiety ($F [1,41] = 3.06$, $.05 < p < .10$). That is, girls scored significantly higher than boys in self-efficacy and girls tended to

score higher than boys in active coping. Similarly, girls tended to score higher than boys in depression and anxiety in stress response. Among healthy students, there were significant differences in self-efficacy ($F [1,59] = 12.19$, $p < .01$), active coping ($F [1,59] = 6.35$, $p < .05$), and HLC ($F [1,59] = 6.86$, $p < .05$). Girls scored significantly higher than boys in self-efficacy, active coping, and internal locus of control.

We also analyzed the relationships between hospitalization length and scores obtained from ratings of self-efficacy, coping behavior, stress response, and HLC, but no correlations were found.

IV. Discussion

1. Opinions on Renal Disease

Disease diagnosed by a physician refers to a biological state, or an objective state where there is damage in the whole, or a part of the living body as well as in physical or mental function. Twaddle¹⁸⁾, however, states that an illness is something a person recognizes subjectively with three symptoms. First sensuous changes that some serious pain or fatigue is occurring, second, an inability to perform ordinary actions, and finally, major physical changes and symptoms which can influence future activities. That is, the judgment criterion for “an illness,” is not only symptoms, but also the level of influence of a disease over ordinary life. When we examined the survey results from this perspective, in three question items omitting the item, “I am irritated by renal disease,” we found 60 to 70% of the students have self-awareness that they have an ‘illness’ and experience various restrictions in daily life subjectively (Tables 1, 2, 3, and 4). Thus, it is important for education personnel dealing with/catering to the needs of the health impaired, as well as medical staff, to understand what students are going through and provide emotional and practical support. Education personnel for the health impaired in particular need to support students. This includes using activities such as educational therapeutic activities so that they can understand their illness and treatment, as well as the

Table 10. Mean, Standard Deviation, and F Value of Health Locus of Control in the High and Low Self-Efficacy Groups

variable	Students with renal disease			Healthy students		
	High group (N=24)	Low group (N=20)	Fvalue	High group (N=36)	Low group (N=25)	Fvalue
Health Locus of Control	42.29 (5.16)	36.70 (7.51)	8.50**	44.39 (4.27)	36.24 (4.75)	42.94**

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

required life style and develop a self-management ability to establish desirable life habits in order to get along with their own “illness” in daily living.

2. The Biggest Problem in Daily Life and Coping Method

We classified the causes of stress into four categories: Those regarding, (1) disease, (2) hospital life, (3) personal relations, and (4) school studies. There were many comments particularly regarding hospital living and personal relations.

We classified the free response comments on how to cope with stress using the eight coping factors proposed by Aldwin and Revenson ¹⁾ as follows:

- A. Escape from Reality
 - Sleep well.
 - Avoid people and stay alone because of the inability to solve problems.
 - Let things develop how they may, but run away from the results.
- B. Cautious Behavior
 - Try to be careful as to what to say in front of people.
- C. Taking an Action toward a Solution
 - Solve problems by actively encouraging discussions on my own initiative
- D. Minimization of a Problem
 - Do not think about a problem too deeply.
 - Do not think about a problem much.
 - Try not to exhibit my own feelings.
 - Try to forget everything.
- E. Mobilization of Support
 - Express how I feel to my friends or family.
 - Seek advice from doctors or nurses as to how to solve a problem.
- F. Self-Criticism
 - Blame myself because I am responsible.
- G. Negotiation
 - Try to find something else good to think about because worrying about (the problem) doesn't help.
- H. Search for Meaning
 - There were no applicable comments.

Among the eight coping factors, “minimization of a problem,” “escape from reality,” and “negotiation,” received most comments. These can be categorized as responses relating to so-called passive coping. It is thought that disease, hospitalization, and personal relations in an isolated hospital environment are perceived as difficult problems for students to solve by themselves.

In this study, there were no comments regarding, “a search for meaning,” such as, “I tried to find a new conviction or an important fact,” or “tried to rediscover the meaning of life.”

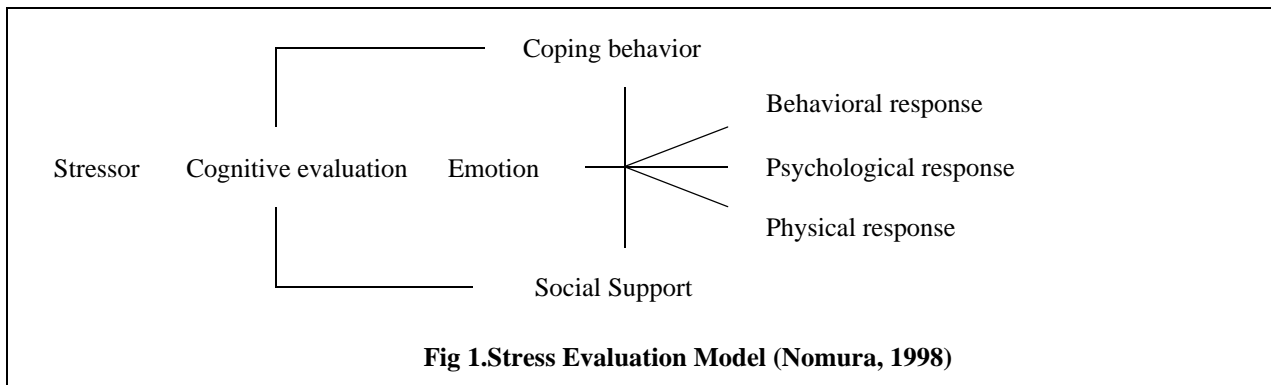
3. Comparisons between Students with Renal Disease and Healthy Students

There were no significant difference in self-efficacy, coping behavior, stress response, and HLC between students with renal disease and healthy students.

In a study comparing students with renal disease and healthy students, Nakamura and others ⁸⁾ found that students with renal disease received significantly higher stress scores than healthy students on three stress items, namely, “I was forced to quit what I started to do,” “I had to do things I didn't like or I disliked,” and “I didn't understand what was happening around me.” Nakamura and others, however, did not find a significant difference in these the items, “I had too many things to do,” “I couldn't do what I really wanted to do,” “I was troubled about my outlook (face and figure),” “I was troubled with my grades in school,” “I couldn't get along with a teacher in school,” and “I get into a quarrel with my parents more frequently.” Regarding the three stress items with significantly high scores, Nakamura and others emphasized the possibility that students were stressed by restrictions in daily life caused by their disease, treatment and examination schedule, and that they were not well-informed about their disease and treatment. Even among healthy students, stress such as worrying about outlook and school grades are high stress items at similar levels to students with renal disease. We believe that no significant difference was found between the two student groups because this study did not include question items on daily life restrictions caused by disease. Stress ratings of students with renal disease whose daily regime includes daily restrictions related to the disease needs to be developed in the future. At the same time, ratings of self-efficacy and coping behavior should be made more suitable to patients with renal disease. Finally, it is necessary to understand the recognizable characteristics of students with renal disease more accurately.

4. Relationships between Self-Efficacy and Coping Behavior as well as between Self-efficacy and Stress Response

Coping behavior refers to attempts to solve, prevent, or avoid a certain problematic situation. Therefore, coping behavior implies efforts to eliminate, or minimize the influence of a stressor by actively taking countermeasures. In the case of a disease perceived by a patient that is not easily resolved, the patient often does



not necessarily use active coping behavior, but rather takes passive coping behavior. Coping behaviors which students with renal disease wrote about in their free style comments included many different descriptions of passive coping such as escape from reality and minimization of a problem. Coping behavior is repeated until influence of a stressor is lessened or disappears.

This study found that relationships between self-efficacy and coping behavior and between self-efficacy and response to stress among students with renal disease exist, and that self-efficacy has influence over coping behaviors (active coping and passive coping). Those with high self-efficacy tended to handle the causes of stress in a more active manner and not to use passive methods. They also tended to have low response to stress toward, “cognition and thoughts of helplessness.”

Among healthy students, we found relationships between self-efficacy and coping behavior as well as between self-efficacy and response to stress, and that self-efficacy influences coping behavior (active coping). Those with high self-efficacy tended to handle causes of stress in a more active manner, and to have low response to stress toward the three subordinate categories, “irritation and anger,” “physical response,” and “cognition and thoughts of helplessness.”

Among students with renal disease, however, even those with high self-efficacy who cope actively against a stressor were not found to lessen their response to stress of “irritation and anger,” and “physical response,” unlike healthy students.

From these results, we can conclude that active coping by students does not necessarily lead to lessening of the response to stress on, “irritation and anger,” and physical response.” This was especially true in response to stressors, which were all difficult to resolve by the students themselves such as disease, hospitalization, or personal relationships in an isolated environment. Nomura¹⁰⁾ presented the stress evaluation model shown in Chart 1 and concluded that coping behavior and social support are important in minimizing stress.

When a stressor such as a disease or hospitalization is serious and cannot be avoided, there are cases where

social support rather than coping behavior plays a larger role in lessening stress response. Takeda¹⁵⁾ investigated the relationship between response to stress and perceived social support to the support source such as families, friends, and hospital staff. He found a relationship among the four responses to stress. For example, the higher the support expectation from a mother, siblings, friends, and hospital staff was, a decrease in the stress response of, “irritation and anger,” resulted. At the same time, the higher the support expectation for hospital staff, the less a stress response of, “physical response,” resulted.

5. Relationship between Self-Efficacy and HLC

We found a positive correlation between self-efficacy and HLC both among students with renal disease and healthy students. Similarly, in both groups, the high self-efficacy group was found to have a tendency toward a strong inner locus of control in comparison with their lower self-efficacy counterparts. This supports research findings by Takeda and Hara.¹⁶⁾ Those with a strong inner locus of control have a strong awareness that their health is a result of their own effort. They exhibited active, independent self-care behavior toward their own health. In contrast, those with a strong external locus of control sought an external manager such as medical staff, drugs, or tended to rely on sheer luck. They also tended not to undertake independent self-care behavior and to depend on medical staff, or family members.

Therefore, those with a high inner health locus of control can improve their self-management skills so that medical and education staff around students in hospital should cater to teaching the students the knowledge and skills for self-management while at the same time respecting their independence to maintain their own health.²¹⁾ In contrast, for those with a strong external locus of control, support from people around them such as families and medical staff is important. Junior high school students are still in the middle of growing up and in some cases, they may have to live with renal disease throughout their long lives. It is crucial for them to raise their inner health locus of control as well as self-

management skills during this period of development. As Ueda ¹⁹⁾ states, a high self-management ability means a higher quality of life (QOL) at several different levels; First, life in terms of existence level, second, living at an individual level, third, lifetime at a social level, and finally, leading to quality of life as experience from a subjective perspective.

According to Bandura ²⁾, self-efficacy is not something, which develops naturally. It is improved through information in four areas, that is, accomplishment of targeted behaviors, substitute experience, oral persuasion, and biological and emotional states. Accomplishment of targeted behaviors as information to raise self-efficacy means accumulation of successful experiences in which action is taken and tasks are accomplished by oneself. Bandura ²⁾³⁾ states that the accomplishment of targeted behaviors is information that can increase self-efficacy most. Substitute experience means to learn a problem solving method through listening to the successful experiences of people in the same circumstances and with the same goals. Oral persuasion means to be praised or evaluated by people with expert knowledge or charm. Biological and emotional states mean to become aware of biologically and mentally favorable responses raised when a goal is accomplished. Bandura ²⁾ states it is important to integrate the above mentioned four information sources ("integration of efficacy information").

We also grouped students in this study by category of renal disease (chronic nephritis, nephritic syndrome, IgA nephropathy, and purpura nephritis) and conducted a one-factor analysis of variance with data obtained from self-efficacy, coping behavior, stress response, and HLC as a dependent variable. There was, however, no significant difference. Takeda and Hara ¹⁶⁾, however, found that depending upon disease type, the HLC level differs. For example, students with obesity scored significantly higher than students with asthma in inner locus of control. It is obvious that disease type may influence HLC because some diseases are controllable more easily than others. Yet, despite our prediction that HLC was higher among those with nephritic syndrome who tend to have more efficacious convalescence than students with chronic nephritis, we did not find a significant difference between them. This is because students with nephritic syndrome still have to follow eating and exercise restrictions and individual differences exist in how the disease will evolve in the future. Also this study unfortunately had only a few subjects in most renal disease categories (13 with nephritic syndrome, 5 with IgA nephropathy, and 5 with

purpura nephritis), so therefore, we need to continue the study to obtain valid results.

We believe we need to conduct a study on relationships between the convalescence of renal disease and HLC, between disease condition and self-efficacy, and between disease condition and HLC. At this point of time, self-efficacy ratings for cancer and diabetic patients ¹⁷⁾²²⁾ as well as HLC for asthma patients ⁴⁾ have been developed, but there are almost none have been developed for children. In addition, no rating system has been developed for patients for renal disease. We would like to continue this study to develop a self-efficacy rating and HLC for children with renal disease and to provide guidance, which meets their cognitive characteristics.

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Footnotes

* Educational therapeutic activities; provide "educational therapeutic activities" for the children to improve and overcome their activities limitation (disabilities).

**Self-efficacy; As defined by Bandura (1977), self-efficacy expectancy is the individual's belief that he or she can successfully perform a course of behavior in a given situation. Individuals with weak self-efficacy beliefs would be expected to coping efforts, whereas individuals with strong self-efficacy would persist in the face of obstacle.

The Role of Resource Rooms in Educational Counseling of Children with Special Needs

Michiyo Kobayashi and Shigeki Kuboyama

Department of Education for Children with Speech and Hearing Handicap

Abstract: This paper aims to examine the roles resource rooms for the speech impaired can play in terms of community-based educational counseling for preschool children. To understand the current situation, surveys were conducted on whether or not resource rooms offer services to preschool children and what expectations parents have of them. We found more than half of the resource rooms surveyed offered services to preschool children. At the same time, based on the findings of a study on parental requests as well as a literature review of recent trends regarding parents of infants and toddlers with special needs, it was found that resource rooms play a primary role, not only in child guidance, but also in serving the needs of their parents.

For resource rooms to effectively conduct educational counseling for young children, the following is recommended: The resource room should inform related institutions of the requirement in local communities for preschool service provision. All related institutions already providing services in the community, such as early intervention systems, the mother-child health care system, and other educational institutions should communicate with each other. The separate roles each institution will play should also be clarified.

Key Words: Educational counseling for young children, resource rooms (for the speech impaired), early intervention system, parents, preschool children

1.Introduction

It has been long since the call for early disability detection and intervention was voiced in Japan. The initial report published by the Conference of Researchers and Collaborators for the Improvement of Special Education¹⁸⁾ listed the following as significant reasons for early educational counseling: (1) To support parents in the acceptance of their child's disability, (2) to develop favorable parent-child relationships, (3) to promote development during infancy and early childhood, (4) to improve the conditions regarding a disability, and (5) to help parents understand special education. Ikeda and Kanno²⁾ also listed the following four points as significant reasons for early education: "(1) To help parents accept their child's behavior, (2) to help prevent secondary disabilities from arising, (3) to reduce future cost in educating children with disabilities, and (4) to offer parents necessary support through early education."

While systems and technologies to detect disability are advancing, it is also necessary to consider the negative aspects of early detection, setting aside the positive aspects mentioned above. When and who should check for a disability and how should the finding be communicated to parents? Furthermore, how should the detection of disability lead to intervention and education? It is necessary to examine such issues from a variety of perspectives. We have already reported in earlier research that many parents felt hurt by the

comments of staff when they were told of their child's disability.^{6) 10)} It is necessary for communities to offer a place parents can visit for consultations without hesitation when they have a worry about their child's development, or notice developmental delays.

Depending upon community circumstances and type of disability, the process and methods for early intervention vary. Some communities possess a central early intervention center which parents concerned about their children can visit for consultation without wondering whether or not it is an appropriate place for inquiring about their concerns. In communities without a center, however, parents have to search around for a place to consult with while internalizing their worries. Recently many communities have established a variety of institutions offering child-care support for parents, such as health centers, child consultation centers, and child-care support centers.

The initial report published by the Conference of Researchers and Collaborators for the Improvement of Special Education¹⁸⁾ stated, "In order to increase the frequency of educational counseling in a community, it is desirable that a 'resource rooms' (for the speech impaired) established within a local elementary or lower secondary school offers such service." Examples of services offered to preschoolers in resource rooms have been reported on previously,^{17) 19) 22)} and in such communities, resource rooms are considered to be part of the early intervention system. We are currently in the

midst of a rising demand for community-based early education (intervention) and each community needs to think how to utilize its own resources and how to integrate these resources.

The following issues need to be clarified before resource rooms can take on the role of a community-based educational counseling center for preschool children. Providing services to preschoolers as a community institution implies being part of an early intervention system which is already functioning in the community. Therefore, initially, the early intervention system already in place in a community needs to be clarified. The next issue concerns, that is, who actually deals with preschool children. It is problematic whether or not a teacher in a resource room will assume responsibility for preschoolers in addition to school children, or whether or not a staff member specifically in charge of preschoolers will be provided. Finally, it is necessary to know what kind of expectations parents of children with special needs have.

To find solutions to the issues listed above, it is important to learn how the resource rooms have been dealing with educational counseling for preschoolers in the community, what kind of problems the staff are having, and what kind of improvements parents of children attending resource rooms wish for desire. In this paper, we will examine the roles resource rooms could play in educational counseling for preschoolers in the community and what kind of care should actually be implemented, taking into account the results of: (1) Study 1 in which staff members of resource rooms were surveyed regarding educational counseling services for preschoolers as well as the merits and demerits of offering such services, and (2) Study 2 in which parents of students attending resource rooms in elementary schools were surveyed.

2. Study 1: Educational Counseling and Guidance for Preschool Children

We surveyed resource rooms staff members about whether or not resource rooms in their schools offered educational counseling for preschoolers and what were the characteristics of the services offered.

1) Subjects

The subjects were teachers who had participated in seminars for resource room staff members offered at the National Institute of Special Education (71 teachers in July 1998, 108 in August 1998, and 70 in July 1999).

2) Procedure

A written questionnaire was used. The questionnaire was distributed to participants of the three seminars listed above after explaining the purpose of the study. The completed survey was collected during the seminar.

3) Questionnaire Outline

The questionnaire consisted of 5 topics: (1) implementation of educational counseling and guidance for preschoolers, (2) the age at which preschoolers commenced educational counseling and guidance, (3) the location of the resource room in the community-based early intervention structure, (4) the merits and demerits of educational counseling and guidance for preschoolers, and (5) staff opinion on dealing with preschool children.

4) Results

[1] Overview of Answers

The response rates were 62.0% (44 out of 71) for the July 1998 seminar, 52.8% (57 out of 108) for the August 1998 seminar, and 67.1% (47 out of 70) for the July 1999 seminar. The overall response rate was 59.4% (148 out of 249). The regional breakdown is shown in Table 1.

To understand the current situation of community-based educational counseling for preschoolers offered by resource rooms and the issues faced by staff members of resource rooms, we will summarize the results of, "implementation of educational counseling and guidance for preschoolers" and "the merits and demerits of educational counseling and guidance for preschoolers."

[2] Implementation of Educational Counseling and Guidance for Preschool Children

In the questionnaire, we first asked, "Does your resource room currently offer educational counseling or guidance for preschoolers?" To those who answered

Table 1 . Regional Breakdown of Respondents

Region Year	Hokkaido/ Tohoku	Kanto	Chubu	Kinki	Chugoku/ Shikoku	Kyusyu/ Okinawa	Total
1998	17	25	20	11	16	12	101
1999	7	9	9	12	4	6	47
Total	24 (16%)	34 (22%)	29 (20%)	23 (16%)	20 (14%)	18 (12%)	148 (100%)

"Yes" to that question, we asked what kind of job classification the staff members offering such services possessed (the possible replies were 'elementary school teacher', 'kindergarten teacher', 'nursery teacher', 'speech therapist', and 'Other'). The results were as follows.

Educational counseling for preschoolers was being offered by 64.9% of the resource rooms (n=96) in comparison 35.1% (n=52) not offering such services. Among those offering counseling, staff backgrounds included 'elementary school teacher' (n=76), 'kindergarten teacher' (n=14), 'nursery teacher' (n=3), 'speech therapist' (n=3), and 'Others' (n=7). Resource rooms offering services can be divided into those where elementary school teachers also deal with preschoolers in comparison to those where additional staffs are allocated to handle preschoolers.

Based on the above results, we can classify resource rooms into three groups based on whether or not counseling services are offered, and whether or not staff members specifically in charge of preschoolers are allocated.

Group A: Educational counseling and guidance provided by staff specifically in charge of preschoolers.

Group B: Educational counseling and guidance provided by elementary school teacher without any additional staff.

Group C: Educational counseling and guidance not provided.

The distribution of replies was 18.9% (n=28) for Group A, 46.0% (n=68) for Group B, and 35.1% (n=52) for Group C (See Fig.1).

Approximately 65% of resource rooms (Groups A and B) offer services for preschoolers, but in many of them, elementary school teachers without any additional staff are dealing with preschoolers in a manner that does not interfere with their main job handling schoolchildren.

[3] Characteristics of Educational Counseling and Guidance for Preschool Children

We asked in Question 4, 'Please give your opinions on the merits and demerits of offering educational counseling and guidance for preschool children.' We classified the freely written answers and examined the differences among answers according to whether or not additional staffs were present (Group A vs. Group B).

(1) The Merits of Educational Counseling and Guidance for Preschool Children

The answers regarding the merits of educational counseling were classified into four categories: 'early intervention', 'preparation for schooling', 'regarding parents', and 'other.' The following are the major answers in each category.

The answer category 'early intervention' includes answers such as 'early improvement or quick recovery'

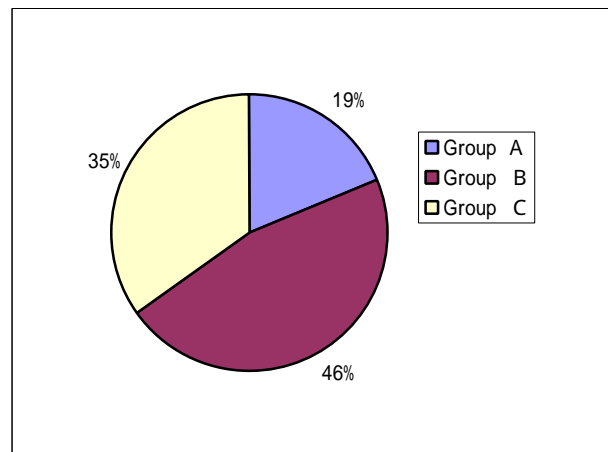


Fig 1: Implementation of Educational Counseling and Guidance for Preschool Children

and 'effective if started early'.

The answer category 'preparation for schooling' also implies 'the ability to offer consistent guidance'. Actual answers include, 'can continue to receive services after entering a school', 'can continue the same guidance policies', 'can cater to the needs of a child via a classroom teacher since the school had known the child before starting school.' There are also answers such as, 'can obtain information for deciding upon a school for a child', and 'can plan the number of children who will attend resource room for a next year.'

Among the merits for parents mentioned by the staff include, 'can consult how to deal with a child', 'can consult regarding child rearing', 'can receive information on disabilities', and 'can receive detailed guidance in choosing a school.'

The 'other' category answers include, 'can meet various types of children and their parents', 'can learn about developmental psychology', and 'can coordinate efforts with other local institutions.'

Regarding the merits of school counseling, there was no significant difference in replies according to whether or not additional staffs were present (Group A vs. Group B); both groups gave similar replies.

(2) The Demerits of Educational Counseling and Guidance for Preschool Children

Answers regarding the demerits of school counseling were classified into three categories in order of frequency mentioned: 'job descriptions and clerical problems', 'guidance content for preschool children', and 'other.'

The category 'job descriptions and clerical problems' includes answers such as 'preschoolers are not officially counted as students who can receive services', 'busy', 'Unable to receive support from school staff (that is, preschool counseling not part of their job description)', and 'budgetary problems.'

The category 'guidance content for preschool children' also includes anxieties and problems such as 'have worries regarding guidance content and the evaluation of preschoolers', and 'am not a preschool children specialist.'

The 'other' category includes 'school placement is difficult if one already knows the parents', 'no need to come to the resource room once preschool training is complete', and 'how to deal with children with a variety of disabilities or marginally handicapped children.'

When the demerits listed are examined according to whether or not dedicated counseling staff are present (Group A vs. Group B), Group A mentioned 'guidance content for preschoolers' often while only one commented 'job descriptions and clerical problems.' In contrast, Group B mentioned 'job descriptions and clerical problems' more frequently while only a few responded with 'guidance content for preschoolers', or 'other'. In response to the question on demerits, 64% of Group A (18 out of 28) wrote nothing while only 32% of Group B (22 out of 68) did so.

5) Analysis and Conclusion of Study 1

[1] Implementation of Educational Counseling and Guidance for Preschool Children

The implementation of educational counseling and guidance in resource rooms of elementary schools revealed that only few offer educational counseling and guidance with a staff specifically in charge of preschoolers and more than half offer educational counseling and guidance for preschoolers by resource rooms teachers in the elementary school within the limitations allowed by their main role. This indicates that a major portion of the educational counseling and guidance for preschoolers in resource rooms are offered because of direct pleas from parents, without a staff specifically in charge of preschoolers being allocated.

After the questionnaires were collected, we interviewed the respondents of Group A (the group with a staff member specifically in charge of preschoolers) on the realities of resource rooms to learn in detail about educational counseling and guidance for preschoolers in resource rooms. As a result, we were able to categorize resource rooms with a dedicated staff member for preschoolers into four types according to the job classification of the staff and the location of counseling and guidance sites.

(1) With a Dedicated Staff Member in the Elementary School Classroom

In this case, the service is not presented officially as 'for preschool children', but services are offered by a teacher dedicated to teaching preschoolers. The staffs are teachers of public nurseries, or municipal employees.

(2) With a Dedicated Staff Member at a Preschool Division Established in an Elementary School

In this case, the service is officially located in the preschool division of the resource rooms and usually has a name like "Preschool Division of the 'Resource room' in Elementary School A." The staff are kindergarten teachers, or those with professional qualifications sent by the Board of Education.

(3) With a Dedicated Staff Member at a Kindergarten adjacent to an Elementary School

In this case, the class is placed in a kindergarten and the service has a name such as 'Resource Room of Kindergarten A'. In some cases, a kindergarten teacher is sent to an elementary school with a resource rooms where it is named 'Resource Room of Kindergarten A'. In other cases, services are offered at a kindergarten next to the elementary school with a resource room. In both cases, close communication is kept between the two resource rooms and the staffs are kindergarten teachers.

(4) With a Dedicated Staff Member in a 'Special Class' conducted by a Municipality

In this case, there are two types. The first type is a 'special class' conducted by a municipality, or a parent association and is established in an elementary school with a resource room. In the second type, an elementary school teacher is sent to the 'special class' of a municipality located outside of the school and he or she provides guidance with the staff for preschoolers. The staffs in both cases are nursery teachers, or municipal employees.

[2] Characteristics of Educational Counseling and Guidance for Preschool Children

For the resource room of an elementary school to offer educational counseling and services for preschoolers means that it provides children, parents, and the staff with a variety of benefits such as early intervention, consistent guidance, information on disabilities, and child-care advice.

The staff listed as demerits in such teaching situations, job descriptions and clerical problems and the content of guidance for preschoolers. Regarding the question requesting comments on the demerits of resource rooms, 64% of Group A and 32% of Group B wrote no comments. If we interpret the lack of comments as 'no apparent demerits', regarding educational counseling and guidance for preschoolers 'no apparent demerits' are perceived more by Group B than Group A staff. This implies that Group B staff are conducting educational counseling and guidance, but under more difficult circumstances.

Group B where resource rooms do not have a staff member dedicated to preschoolers have a variety of

problems: The teacher is over-worked and under stress and there are inadequate teaching resources due to the lack of a separate budget for preschoolers. Yet, we see the reality of those resource rooms offering a service in response to requests from children and parents in the community.

3. Study 2: Requests Made of Resource Rooms by Parents

In Study 1, we clarified how resource rooms offer educational counseling and guidance to preschoolers and what kind of problems they face. In Study 2, we will clarify what kind of opinions parents of students attending resource rooms in elementary schools have regarding the class. Based on their opinions, we will guess what parents of preschool children expect from resource rooms.

This paper will report on a part of the survey we directed toward parents of students attending resource rooms ("Survey on education and intervention during the preschool period"⁷⁾) regarding opinions on their resource rooms and examine their requests made of their resource rooms.

1) Subjects

Respondents were parents of 'resource room' children (speech impairment and hearing impairment) at seven elementary schools. A regional breakdown is two schools in Tohoku, three in Kanto, one in Chubu, and one in Chugoku.

2) Procedure

The survey used a written questionnaire. The questionnaire was distributed to parents via 'resource room' staff. Parents mailed their questionnaires to the authors.

3) Period

The questionnaire was distributed in November 1998 and collected by the end of January 1999.

4) Questionnaire Outline

All six questions of the questionnaire asked respondents for free-form answers. This paper will examine their answers to Question 6, 'Please write what you are thinking about the resource rooms that your child is currently attending.'

5) Results

The response rate was 47.0% (n=117). We classified parents' answers according to their contents.

Most replies expressed the parents' state of mind, conveying a sense of gratitude such as 'thanks', 'much appreciated', 'helpful', 'satisfied', and 'reliable.' In contrast, some replies reflected complaints such as 'anxiety' and 'tiresome report writing' (probably referring to writing the daily communication notebook).

Many parents listed reasons why they felt gratitude toward the resource room: They used expressions such as 'looking forward to', 'joyfully', 'free and easy' in describing the behavior of their children.

The parents' detailed comments could be classified into four categories according to their content: 'for parents', 'for children', 'cooperation', and 'information'. The actual answers are detailed below.

(1) For Parents

First, there are comments mentioning the value of parents getting to know each other: 'It's good to know other mothers with whom one can share problems', 'Discussion with other mothers is quite good', 'Meeting other parents is helpful', 'I enjoy talking with mothers from other schools too', 'We have get-togethers with other parents frequently and we don't have to feel alone with our problems', and 'It's good to exchange information.' In contrast, there were comments longing for exchanges with other parents: 'It's sad that we don't have get-togethers with other mothers and fathers any more', 'It's regrettable that we mothers don't talk much with each other' and 'It's unfortunate that the mothers class was cancelled.'

There were comments indicating that mothers seek advice from resource room teachers regarding issues other than their child's disability: 'Teachers listen to my other problems', 'I consult with teachers about my problems', 'I seek advice for child care problems other than disability-related issues', 'Teachers listen to the mental side of problems also', 'I seek advice for a variety of issues', 'Parents receive mental health care also', 'It is reassuring that I feel I can consult with teachers when a problem arises', 'Since teachers calmly listen and advise me, I feel relieved', and 'Teachers treat my problem as if it were their own.' At the same time, there were comments such as, 'It would be better if teachers had more time to listen to our problems more deeply.' Comments such as these reflect an unfulfilled desire for resource rooms to play a consultation function.

Some comments described the resource room as a place in which they could feel secure, or obtain relief: 'Teachers keep kindly eyes on Child', 'It's a reliable place not only for my child, but also for myself', 'We can be frank there and teachers accept our problems with a warm heart', 'They are a dependable source of support', and 'They are a psychological tranquilizer for my child and myself.'

(2) For Children (Comments by parents)

Many commented on guidance, particularly on what a child is involved in during the resource room period. Most expressed an understanding of the guidance offered at school: 'Teachers introduce what my child needs at the appropriate point in time for his learning', 'Guidance to relax a child's mind through play is helpful', 'My child's pronunciation has improved', 'Teachers develop a curriculum for each child', and 'They teach through what children are interested in.' In contrast, other comments indicated that guidance policies are not well communicated to parents: 'The contents are the same as an ordinary class', 'I felt certain things were questionable', 'It seems that the children are just playing', 'The teaching contents need improvement', 'I want to see the actual training by myself', and 'I feel a little uneasy because the children seem to be just playing.'

Furthermore, there were comments regarding the ways in which staff make contact with children: 'Teachers are patient in listening to what my child is saying', 'I feel encouraged by the teachers' attitude of solving problems one by one together with my child', 'My child can confide anything to the teacher because he can talk to her alone and he trusts her', 'The teacher talks to children from their perspective and deals with them with all her ability', 'In the class, the teacher respects the will of a child', 'The teacher should consider what children want', and 'The teacher needs to capture a child's heart when talking to him.'

(3) Cooperation

Some parents mentioned the utility of having resource rooms as part of the school organization: 'The resource room teacher always lets me know what she asked the ordinary classroom teacher to do for my child', 'The resource rooms teacher plays a strong communication role between the school and me', 'I feel more relaxed with the resource room because it's not a hospital', and 'The classroom teacher, the resource rooms teacher, and myself can openly discuss my child's problems in his ordinary classroom.' In contrast, other parents pointed-out the lack of communication between the classroom teacher and the resource room' teacher: 'I want the resource room teacher and the classroom teacher to communicate more closely', and 'I want the classroom teacher to understand the circumstances of my child.'

(4) Information

Some comments revealed that parents see the resource room as a place for them to obtain knowledge on disabilities: 'Teachers can give me their professional opinions', 'I understood how to accept stuttering', and 'I learn a lot at parent meetings where I can listen to technical talk.' In contrast, some parents expressed their desire for such information: 'I want to listen to what has

been proven academically', and 'I want to know where we can get our child examined.'

6) Analysis and Conclusion of Study 2

[1] Roles Parents Expect the Resource Room to Play

The question we asked respondents was, 'Please write what you are thinking regarding the resource room your child attends.' After answers were analyzed, it became clear what kind of roles parents expect their resource rooms to play.

As Figure .2 illustrates, the content of parents' expectations can be classified roughly into 4 areas; 1) for parents ('get-together of parents,' 'an advisory site for disabilities as well as for a variety of issues', and 'a secure place'), 2) for children ('guidance' and 'appropriate assistance'), 3) cooperation ('located within a school'), and 4) information ('offering professional knowledge'). In other words, parents expect the resource room to play these roles.

[2] The Resource Room from the Perspective of Parents with Preschool Children

Respondents of Study 2 are parents of school-age children and similar findings are expected from parents with preschool children as well. When we consider the contents of Figure 2 from the perspective of parents with preschool children, requests for a meeting site for parents, a consultation site for various issues in addition to disabilities, a place of security, a guidance place for children, and a site for appropriate handling are all appropriate. Regarding cooperation, since the children are preschoolers, it is necessary for the resource room staff to maintain close communication with nurseries and kindergartens, medical institutions, early intervention centers, and child consultation centers. As for information, parents with preschoolers need information on, not only disabilities, but also on welfare programs, or general child care, more than parents with school age children. The roles for the resource room which parents with preschoolers seek converge roughly into the same four areas with the roles parents with school-age children seek seen in Figure 2.

4. Overall Analysis

Study 1 clarified issues involving resource rooms offering educational counseling to preschoolers, while Study 2 examined what parents expect from resource rooms. Based on results of the two studies, we will consider from the following perspectives what kind of place the resource room should be as a community-based educational counseling site for young children. First, we will examine the issues and roles of resource rooms

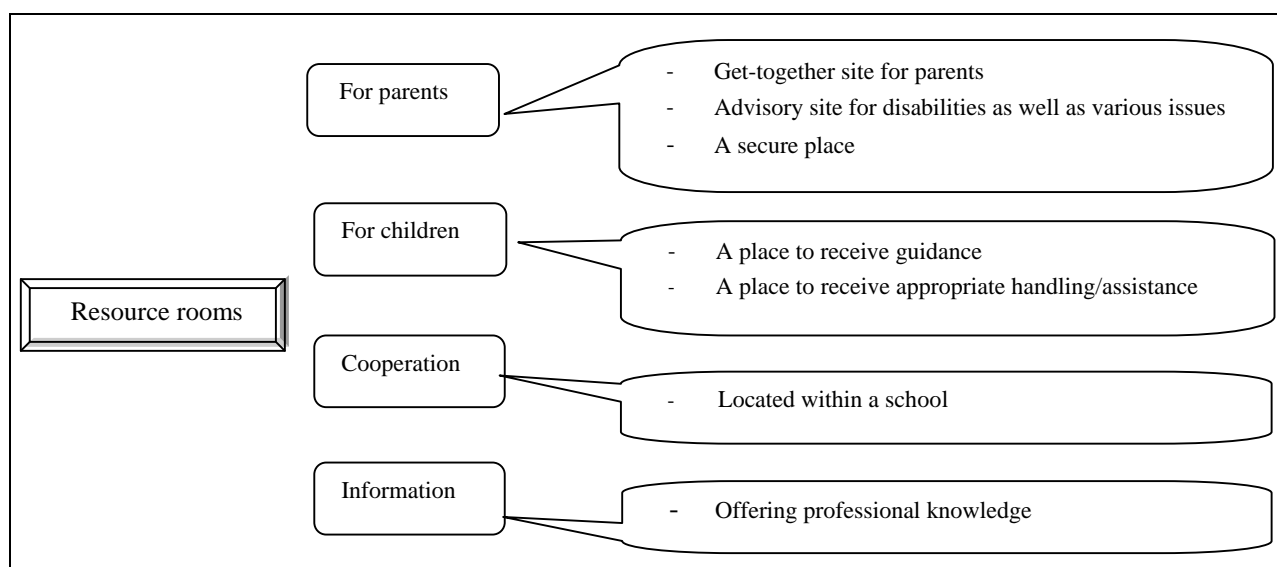


Fig 2: Expectations of the Resource Room

which accept preschoolers. Second, we will examine how resource rooms should act in consideration of the realities of the local early intervention system and mother-child health care system. Then, we will consider what kind of 'community-based counseling center role', each educational institution should play and how educational counseling for young children in resource rooms should be carried-out.

1) Increase of Children Requiring Service

When we consider issues and roles of the resource room when it accepts preschoolers, there are three perspectives; 'parents', 'children', and 'local community.'

Study 2 found that the resource rooms play the role of an exchange site for parents. Many previous studies have pointed-out the importance of get-togethers of parents who have children with disabilities.¹⁶⁾ By widening the range of children attending the resource rooms, get-togethers for parents will have greater significance. Parents of school age children may remember their past and talk about their experiences while parents of preschool children will use such discourse as a reference point for predicting the future of their own children. The resource room will assume an important place as a location for parents with children of different ages to get together.

Parents also see the resource room as a counseling site, not only for disabilities, but also a wider range of topics - as well as a site of security. In Study 1, the staff listed the benefits for parents in that they could discuss how to handle their children, or they could seek advice about bringing-up in general because the staffs have been involved with the same children since they were preschoolers. Thus, the wider the age range of children attending resource rooms, the more important is the care

for parents. Investigated recent research literature on the care of parents whose children are toddlers⁹⁾ and felt the need to actually duplicate their findings, and to emphasize the importance in providing care for parents.

By lowering the age for children to attend the resource rooms, elementary school teachers teaching in resource rooms without personnel specifically assigned for preschoolers will be most likely overburdened. As Study 1 found, elementary schoolteachers are uneasy about guidance and evaluation of preschoolers since they do not have expertise in teaching young children. Yet, they are still required to offer such services. Even with additional staff assigned to preschoolers, resource rooms are expected to face more difficult requests and a demand regarding the professional qualifications of their staff as resource rooms becomes counseling sites for a variety of disabilities as well as topics not limited to disabilities.

Study 2 also found that parents seek professional knowledge and information from personnel in the resource room. With the inclusion of preschoolers in resource rooms, in addition to school-age children, resource rooms teachers need to expand their information and institutional networking to include child care support. A variety of child care support systems are currently being established as Japanese society undergoes major changes, such as a declining birthrate, the trend toward nuclear families, or the increasing number of working mothers. Teachers need to obtain relevant information and offer it to parents.

2) Early Intervention System in a Community and the Resource Room

We use the phrase "community-based", but it is impossible to make general recommendations because

the realities of each community differ. Establishment and practice of an early intervention program in Hokkaido can be used as a point of reference when we think about how to understand a community and how to build a system in that community.²⁰⁾

A unit of an early intervention system is not an administrative, bureaucratic unit, but is a concept constantly changing due to various factors such as availability of social resources, size, distribution and density of the population, accessibility, and the conditions of residential districts. The objectives of community intervention programs are achieved by, "making the best of a layered structure of primary, secondary, and tertiary tiered institutions as well as a flexible approach with respect to related institutions." (Hokkaido Association for the Study of Early Intervention Programs, ed., 1999)²⁰⁾ The primary institutions are characterized by their proximity to locations where services are offered, speed in handling requests, and daily routine, which all are common or shared with services to the general public. Secondary institutions are intermediate technical institutions for professional checkups, diagnosis, continued guidance, and drug administration. They play the role of guidance and support for primary institutions. Tertiary institutions are characterized by advanced and integrated check-up, diagnosis, and test facilities as well as information center capability.

Itoh et al.³⁾ state that the early intervention system in Hokkaido was developed to fit the realities of the community due to the sheer vastness of the area. They wrote:

For example, in communities where the resource rooms are firmly rooted, they play the role of 'a jack-of-all-trades', handling everything from counseling for a variety of issues to early intervention programs for preschoolers. In another case, an institution, which originally started as a training center for polio victims, changed its functions over time to treat children suffering from Down syndrome, mental retardation, and autism. When building an early intervention system in Hokkaido, actual practice was given priority. This is based on the belief that these practices, however insignificant when seen from an idealistic perspective, were needed as long as they were rooted in the community and it was necessary to consider them as centers when trying to develop an early intervention system.

Based on such beliefs, it can be concluded that resource rooms have been playing the role of a primary institution, that is, an institution firmly rooted in the community. In Study 1, we also found that resource

rooms in Hokkaido belonged to Group A. The report, "Realities and Issues of the Iwamizawa 'Resource Room' for the speech impaired"¹³⁾, describes the role the resource room plays as a part of the child care support system.

Ohtsu¹⁾ and Kita-Kyushu Cities¹⁵⁾ are currently carrying-out early intervention programs. As for resource rooms offering counseling services to preschoolers, programs have been reported in Kobe City²¹⁾, Shizuoka Prefecture²³⁾, and Iwaki City⁵⁾. These resource rooms are engaged in community-based educational counseling for young children.

As mentioned previously, educational counseling for young children requires not only taking care of the children but also dealing with their families. It is desirable to establish a system where children with disabilities and their families do not hesitate to ask for counseling and prepare an environment in which they can lead active lives in the community. It is important for the primary institution in particular to offer extensive and flexible services that accept all parents expressing anxiety regarding disabilities or child care, disregarding the boundaries of the current legal framework as well as the vertical administrative system.

3) Mother-Child Health Care System

When integrating the resource room into an early intervention system, it is necessary to consider relationships with existing mother-child health care programs. Figure 3 shows the mother-child health care system from pregnancy to the start of school and this system plays the role of a bridge to the early intervention system. Even before the birth of a child, public health nurses at a health center will start forming relationships with parents on occasions such as parental classes. After birth, the relationship with the health center will continue to strengthen through newborn home visits, infant check-ups, 1.5 yearly check-ups, three year check-ups, and in some communities, dental check-ups. At the same time, parents begin a relationship with a medical institution via pregnancy check-ups, delivery, infant health advice, and vaccinations. Then, at appropriate times, parents are introduced to a child-care support center, an early intervention center, or another guidance center for counseling and guidance.

Shimada¹²⁾ in introducing the early intervention system in Zushi City, Kanagawa Prefecture, wrote:

It is necessary to systematically coordinate the responses of related institutions to respond to the variety of needs that children with disabilities and their families have. In Japan, a vertically administrated bureaucracy produces harmful effects

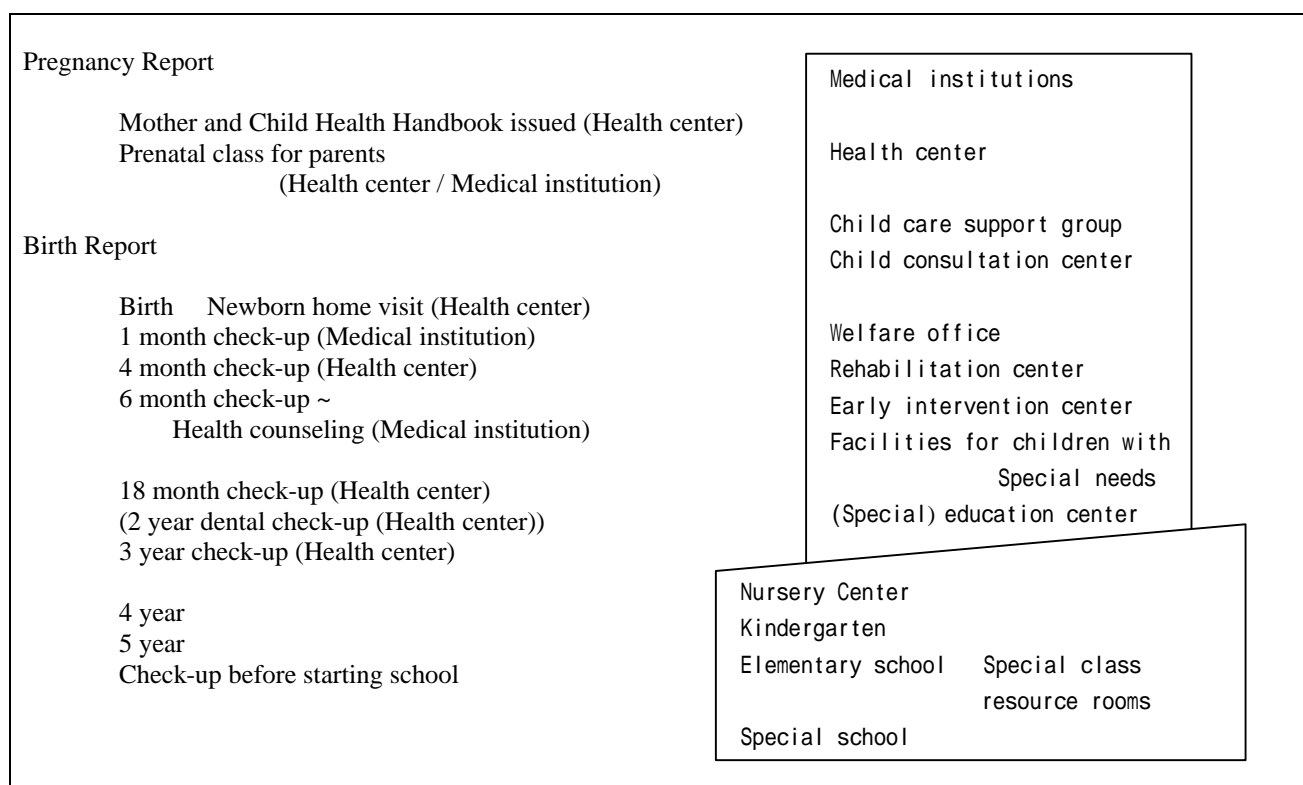


Fig 3: Child's Age and Related Institutions

Note:

Based upon a nationally established system, Mother and Child Health Handbook is issued to a woman who reports a pregnancy. The book is organized to record not only the pregnancy and delivery, but also child care in a consistent manner. It contains not only entries for medical records of a mother during pregnancy and of the child's vaccination and check-up profile, but also instructional materials on child care. The book is widely used.

- Article 16 of the Maternal and Child Health Law
- Latest revision date in April 2002
- Municipalities became the issuing body from September 2000.

and many communities suffer from a lack of coordination among related institutions. For such institutions to be actively coordinated in their activities, a central person who can act as a key manager should be appointed and a treatment committee consisting of members from related institutions should be established.

When a community has many institutions, it is difficult for individual parents to effectively use a variety of institutions and the existence of a key person playing the role of coordinator is important. In Zushi City, public health nurses work as key persons. Since public nurses start a relationship with parents even before a birth of the child, it would appear to be appropriate for them to play that role.

When the resource room opens its door to preschool children, it will enter the realm of an already established system for the mother-child health care. However insufficient the current status of the early intervention

system is, a resource room starting educational counseling for preschoolers independently may give rise to confusion in some communities. The most important criteria when a resource room offers educational counseling for preschoolers is that the staff fully understand the existing mother-child health care system as well as the welfare system, and that they clarify the role divisions with other institutions and maintain coordinating efforts.

4) Coordination with Other Educational Institutions

The Course of Study for kindergarten, elementary, and secondary departments of special schools all state that special schools should "play the role of a special education counseling center in a community."

At the same time, kindergartens are sought to play the role of a preschool education center in the community. The Course of Study for Kindergarten, which was enacted in April 2000, prescribes that, "Kindergartens

should make efforts to play the role of a preschool education center in a community." For example, their management should open its facilities and functions to community residents for child-care support and respond to inquiries on preschool education.

Further, the Course of Guidance for Nurseries which was modified in October 1999 states, "Nurseries should offer counseling and advice on infant and toddler care actively as the child welfare institution most closely rooted in a community with child care experts, to the extent that daily tasks are not effected." It further wrote regarding care of children with disabilities:

Nurseries should coordinate their activities with other educational institutions in the community, which accept children with disabilities and offer educational counseling and advice and seek out opportunities for normal children to have contact with children with disabilities. In addition, nursery teachers should advise other children and their parents to obtain a correct understanding of disabilities. Furthermore, when a child with a disability in a nursery needs to attend an early intervention program, the nursery should make the appropriate arrangements with a center offering such a program.

Educational institutions for toddlers such as kindergarten and nurseries are expected to play a counseling role for toddlers in the community. There has also been a report of a case where an educational center under the control of a local school board is conducting educational counseling for preschoolers.⁸⁾

As described earlier, educational counseling for preschoolers is being sought and is starting at a variety of institutions. Study 1 also found that more than half of the resource rooms offer educational counseling and guidance for preschoolers and that many of them are doing so without staff specializing in toddlers. Such resource rooms, however, are facing a variety of problems although they started offering these services in response to the needs of children with disabilities and the requests of their parents. Their problems should be and will be solved by establishing a community-based early intervention and education system. It is important to clarify the local need for educational counseling and guidance for preschoolers in resource rooms, to build a system which a community can afford, and to establish human, financial, and physical resources for resource rooms.

Study 1 also found that early educational counseling at resource rooms is possible when a variety of resources are available, as is the case for Group A. As yet, we cannot recommend that resource rooms start early educational counseling out of the context of their community. As we discussed earlier, it is necessary to

understand what kind of functions existing various institutions in a community play in counseling and guidance for preschoolers. Resource rooms should increase their networking with other institutions in the community by making the best of their strengths as a part of a school and steadily increasing the range of children for whom they offer counseling services. Simply, an increase in available institutions and programs will only confuse parents, which will not help them in the final analysis.

5. Conclusion

This paper examined the roles of the resource room as a community-based educational counseling site for preschoolers, in consideration of previous research findings on how resource rooms conduct educational counseling and guidance for preschoolers and what kind of expectations parents have of resource rooms.

In our investigation, we found that resource rooms when starting early educational counseling should communicate local needs to related institutions as well as maintain close contact with health, medical, welfare, and educational institutions in their communities. This is because parents will merely be confused if there is no consistency in guidance among related institutions. With a lack of coordination between resource rooms and other existing counseling institutions for preschoolers, it is possible that parents will end-up going from institution to institution. It is not necessarily true that a community with many counseling sites can offer effective services, or appropriate support. Consistent handling of individual children and clear role divisions among the various institutions are issues requiring future investigation.

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An Evaluation of Presentation Methods in Multimedia Applications Designed to Help Teachers of Special Education Choose Appropriate Software Programs¹

Munekata Tetsuya

Department of Educational Technology²

Abstract: The purpose of the present study was to discover a more effective presentation method for making multimedia applications designed to help special education teachers choose appropriate software programs. Two easy-to-evaluate software programs and two different presentation methods such as 1) *text + still image*, and 2) *text + movie + captions* were used. Subjects were 22 teachers of special education who had either developed software programs themselves, or had used software programs in their teaching. Each subject scored the two software programs under two conditions. The amount of time required to view the presentations, install the software program, and to complete evaluation form of it, as well as the evaluation scores and comments made on the programs were analysed. It was found that in terms of time taken, Condition 1 was less than Condition 2 ($t = 3.21, p < .01$), in net scoring time ($t = 2.58, p < .05$), and there was no significant difference between the scores of two conditions. In terms of time efficiency, findings indicate that *text + still image* was more efficient than *text + movie + caption*. However, these findings are limited to restricted conditions of easy-to-evaluate software programs and the subjects were all computer literate. Despite this, most software programs now used in special education are simple to use and the overall level of computer literacy amongst teachers has been increasing. It is hoped that the results of the present study will help enhance the use of computers in special education.

Key Words: Multimedia, presentation methods, evaluation study, DHTML, SAMI, special education

Choosing suitable software programs is a time-consuming task for teachers of special education and is forced to use trial and error to find a program suitable for the needs of the children they teach.

In 1997 Munetaka and Takuma developed and evaluated an HTML (Hypertext Mark-up Language) module introducing 74 educational software programs with movies and text to teachers, but they had not examined the effects of method of presentation. In recent years, media technology has made rapid advances with the emerging technologies. At the present time, Synchronised Accessible Media Interchange Format (SAMI)³ is available which enables users to use text/audio data synchronised with video, and Dynamic HTML, or DHTML⁴, an extension version of HTML enabling either the executing of user programs on web pages, or the addition of multimedia functions to the page. Using SAMI, a format developed by Microsoft Corporation in 1998, various independently developed media such as movies, still images, sound, and text data

can be presented in synchrony. At present, although SAMI runs only Microsoft's Media Player 5.0 or later versions, it can be used on a Web page implemented by DHML so the user can integrate various media, including text, movies, audio narrations, and open captions. Microsoft Corporation suggests that this technology can be effective for the disabled, for example, the adding of explanatory narration to ordinary video programs for people who are blind and representing open captions on the screen of ordinary video programs. In Japan, Takemura (1999) developed a multimedia software program with on-screen captions using SAMI technology for the learning of mathematics at a school for the deaf.

It is suggested that adding text data to visual information is effective, not only for the learning of children with hearing loss, but also it can be useful in a variety of ways for non-disabled children. For example, non-disabled children can use this technology to

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² The name of the department was changed to 'Educational and Information Technology' in April 1, 2001. This paper was originally published in Japanese in February of 2001.

³ There is another similar specification to SAMI called SMIL (Synchronised Multimedia Integration Language), composed by W3C (World Wide Web Consortium). This has been operated in RealPlayer of RealNetworks Inc., as the software program for delivering and playing movie files on the Internet.

⁴ DHTML is used for either executing user programs on a web page or adding some multimedia functions to the page. It was proposed jointly by Microsoft Corporation and the World Wide Web Consortium and utilized on Internet Explore.

augment or render more precise information access in settings such as noisy environments, or if the information is difficult to access in the auditory mode.

While on the one hand, these new technologies are expected to be used in application programs for teacher education, on the other, they require a large number of data files as well as human resources to develop. For the development and effective dissemination of multimedia applications aimed at helping teachers of special education with selecting suitable software programs, there is an urgent need to identify the practicality of multimedia applications using these new technologies.

Purpose

The purpose of the present study was to discover a more effective presentation method aimed at helping teachers of special education choose appropriate software programs. Specifically, the purpose was to develop two introductory programs based on different presentation methods, viz. *text + movie + narrations + open captions* and *text + still images*, and to experimentally test the effectiveness of these programs with teachers of special education.

Method

Subjects

The subjects were teachers of special education who had either developed software programs themselves, or had used software programs in their teaching. The subjects were mainly selected for a list of teachers who had completed Educational Technology in-service training courses at the National Institute of Special Education and had Windows 95 or 98 with Internet access installed in their computers at school or home. 34 teachers were invited to participate in the study, but only 22 responded (male = 20, female = 2). One subject was aged 20 to 29, 14 were aged 30 to 39, and seven were aged 40 to 49. 12 worked in schools for the intellectually disabled, six in schools for the physically disabled, two in schools for the health impaired, three worked for education of children with emotional disturbance, one in a school for the visually disabled, one in a special class in an ordinary school, a school counsellor, and one teacher teaching disabled children in general. 14 subjects had training in the teaching of the intellectually disabled, four in the field of physical disability, three in health impairment, two in emotional disturbance, two in visual disability, and one in multiple disabilities. In terms of computer literacy of subjects, nearly 60% (n = 13) responded that, 'I can make software programs by myself,' and rest of all (n = 9) responded, 'I have no problems in using commercially

available software,' and a nil response for, 'I need someone who could help me with using computers.'

Materials

All subjects were mailed, 1) a letter inviting them to participate in the study, 2) an outline of how the study would be conducted, 3) a sample completed evaluation form, 4) two evaluation forms (one for each program), and 5) a CD-ROM containing introductory programs made using DHML and HTML, movies, text data, and two software programs.

a) The software programs to be evaluated were Software Program 1, *What colour is this part?* and Software Program 2, *The same colour*. Both programs were newly written with the expectation that they could be evaluated in a short period of time. They were interactive and contained voice data about colors and were focussed on use in special education.

b) The introductory programs were based on different presentation methods. Two types of multimedia applications introducing software programs were developed. The first contained text, movie clip(s) with narration and caption for the narration (*movie*) by means of DHTML (Dynamic HTML) and SAMI, The second program written in HTML contained text and still imagery (*still image*), and are described below.

i) *Still image* program written in HTML: An introductory program contained text or explanation, and the *still image* was developed using HTML. (see Figure 1) *Still image* shows a computer screen that runs one of the learning programs, text data provides information about goals, characteristics, how to use, equipment required and the authors names. Text data prepared for software data programs 1 and 2 (see Tables 1 and 2), and *Still image* shows a start screen. And were written in HTML so that they could be used by any browser software on the Internet.

ii) *Movie* program written in DHTML and SAMI: An introductory program using DHTML and SAMI and containing text or explanation, movies, narration, and open captions was the developed. (see Figure 2) Although the movie screen was similar to the still program, the introduction to the movie started by clicking mouse on the picture. There were two movie files each of 72 seconds duration for Software Program 1 and 69 seconds for Software

Program 2. In addition, the introduction program for Software program 1 contained a 19-second movie segment about the actual use of the program. The introductory programs were written in DHTML so the Internet Explorer 4.0 or later versions were required.

Movie and narrations were prepared using RTE-2800, a real time MPEG encoder unit produced by SONY. The narrations were typed to text format and changed to

Figure 1. Screen shot of the introduction program for "text + still image"



Table 1. Text data prepared for software program 1: "What color is this part?"

Purpose:	To learn the names of colors using favourite pictures or photos.
Description :	Display a favorite picture, or photo on the screen, verbalize the name of the color as you locate it with the mouse. Three pictures are prepared in default setting and by clicking outside the picture area and the picture are alternated. By clicking on the file menu you can select any picture on the computer.
How to use :	Simply move the cursor on the screen. The computer will verbalize any color you choose. If you click outside the picture area, the picture/photo will change, and if you click on the file menu, you can choose any picture on the computer (a teacher can help you do this, if required).
Results(trial) :	A child used the mouse and listened to the computerized vocalizations and enjoyed it very much. Using a digital camera, photos were taken of the child's favourite fruit and people with whom she was familiar.
Equipments :	Microsoft Windows, PC with sound card, speakers. Visual Basic ver. 6.0 (for programming language).
Developer :	MUNEKATA Tetsuya & OOMAKI Mariko
Contact Address :	NISE, 5-1-1, Nobi, Yokosuka. Phone :+81(468)48-4121

SAMI format using OTEGARU SAMI, a SAMI file generator program. (Takemura, 1998) This allowed users to choose text colour and display timing. In the present study, different colours were used for different speakers so that it was easier to distinguish who is talking then. DHTML-page designer of Visual Basic 6.0 was used to create DHML files.

c) The evaluation instrument consisted of four sections (see Table 3), namely, 1) time taken to score (related items I-1, I-2, I-3), 2) Face sheet (related items II-1 to II-7), 3) evaluation items (related items III-1 & III-11), and 4) comments.

A previous study by Takuma, Narita, Nakamura and Munetaka (1995) establishing levels of computer literacy of subjects was used as the basis for the form. The level, 'I have never used computers,' however, was deleted from the inventory. The number of criteria for scoring software programs (e.g. III-1 to III-6, and III-10 was based on the research literature (see Gakujo-ken, 1992). The objective statements by subjects (viz. items III-7 to III-9, and III-11 were used because it was believed that these items reflected the actual decision making processes used by teachers in selecting software programs. The objective of the comments section was to not only obtaining evaluation data, but to develop or revise the programs in the future.

Procedure

Each subject was asked to separately evaluate two software programs after examining the introductory program of either the *still image* version, or the *movie* version. Each subject was asked to complete the evaluation form after finishing using the learning software. Subjects were randomly divided into two



Figure 2. Screen shot of the introduction program for “text + movie + captions”

Table 2. Text data prepared for software program 2: "Same Color"

Purpose: To learn names of colors and develop eye-hand coordination through the activity that filling tree squares on the screen in the same color.

Description : Designed to motivate the learners. For example, the color of a square on the screen changing randomly and teacher's voice read aloud the name of the color repeatedly. Background color of the screen set in black so that the squares are highlighted

How to use : Simply touch or click on your mouse at one of the three squares on the screen. Do it until all the three boxes became the same color. If you touch the start button located upper left side of the screen, you can start the program again (A teacher can help doing this part, if needed.)

Results(trial) : A child touched the panel and listen to the voices and enjoyed seeing changing colors on the screen. He liked the voice “Good job! Very good!” as a knowledge of results very much and said “I did it!, I did it!” with satisfaction, further more, he said “Yes !” replying to computer's voice “Let's do it again!”.

Equipments : Microsoft Windows, PC with sound card, touch panel, and speakers. Visual Basic ver. 6.0 (for programming language).

Developer : original MS-DOS program made by UOZUMI Takashi and revised windows version made by MUNEKATA Tetsuya

Contact Address : NISE, 5-1-1, Nobi, Yokosuka. Phone:+81(468) 48-4121

groups, Group A and Group B, to experimentally evaluate the two learning software programs using two different presentation methods.

On the one hand, each subject In-Group A was required to evaluate Software Program 2 by using the *movie* format and Software Program 1 in *still image*. On the other hand, each member of Group B was required to evaluate Software Program 1 by using the *movie* format and Software Program 2 in *still image*.

Although it was felt desirable to conduct each evaluation task in the same setting (e.g. an equipment room, etc.), because it was impractical to gather all 22 subjects together in the same location, all required materials were forwarded to subjects by mail to complete in their own time. Statistical tests used in this study were based on Iwahara(1965) and the computer program EXCEL by Microsoft.

Results

Subjects were randomly assigned to two groups, Group A and Group B. There was no significant difference between groups on level of computer literacy ($n1 = 11, N2 = 11, T1 = 132, U1 = 55$), and on age level ($n1 = 11, n2 = 11, T1 = 117.5, U1 = 69.5$). The sex ratio of the groups was the same.

Scoring time

There were two parts to analysis of scoring time, 1) net scoring time, and 2) overall scoring time. Net scoring time was defined as the time required to evaluate the software program under the run setting. Before the evaluation, each subject viewed either *text + movie + captions*, or *text + still image* applications. The overall scoring time was viewing time plus net scoring time.

Net scoring time ($M = 649, SD = 547$) for *text + still image*, and for *text + movie + captions* ($M = 794, SD = 668$). Net scoring time of *text + still image* was less than net scoring time of *text + movie + captions* ($t=2.58, .1 < p < .05$). The actual difference ranged from -300 seconds to +900 seconds ($M = 145, SD = 263$). Overall the scoring time of *text + still image* was less than *text + movie + captions* ($t=3.21, p < .01$).

Scores

Each subject was asked to complete a Likert scale for each of the first 10 items followed by scoring the software program from 0 to 100 points. Software Programs 1 and 2 were analyzed separately between two conditions, *text + movie + captions*, and *text + still image*. There was no significant difference between two items in Software Program 2; viz. 'Needed operation for the learner was appropriate?' ($n1 = 11, n2 = 11, T1 = 153, U1 = 34, p < 0.1$), and 'Please make rating the

software program 0 to 100,' ($n1 = 11, n2 = 11, T1 = 153.5, U1 = 33.5, p < 0.1$). There were also no significant differences between the two conditions on the total of 22 items of the scale. Differences between the scored data under the two presentation methods are listed in Table 4.

Comments

'It was easy to understand,' 'It was nice to see a learning example,' 'The example may help me with knowing how to use the software program in the classroom,' 'It might be a good hint for the user,' and 'It was good because it was colourful and simple to use by clicking the mouse,' for the movie version.

'It was simple to read,' 'too simple compared with another one (movie version),' 'It will be better if you can put movies of the actual scene or use targeted children,' 'It will be better if you can put an explanation of the programs directly on to the image,' 'You need to put arrows if you want to explain something,' 'There are not very many people to read the text carefully, and impact and fun should be added' for the still image version.

There are comments common to the two programs as follows. 'There are some difficulties in understanding terms if the user is a novice, either in the use of computers or in special education,' 'Hints for instructions are needed,' 'It would be better if you put in many more example lessons,' 'You should describe the needs of the targeted children more clearly,' 'Descriptions of needed equipment require additional information,' 'Please inform available graphic formats for the program,' 'You should add game-like features to the introductory program itself,' 'Titles should be more visible,' and 'Please add information about the location of servers for graphic data.' Even though subjects were asked to comment on only the introductory programs, eight subjects commented on the learning programs.

In summary, there were more positive comments about the movie version compared with the still image version. However there is no indication that this result is reflected in the scores of the programs.

Discussion

This study examined the differences between two presentation methods, movie and still image, implemented by multimedia applications aimed at helping teachers of special education choose appropriate software programs. In terms of time efficiency and needed scoring time, the maxim is 'the

Table 3. Evaluation Form**Name of Software Program: “Same Color Ver. 1.0A”**

-1 Starting time for introduction part { } : { } ; Completing time { } : { }

-2 Starting time for installation { } : { } ; Completing time { } : { }

-3 Starting time for learning part { } : { } ; Completing time { } : { }

-1 Male { } Female { }

-2 Age level 20-29 { } ; 30-39 { } ; 40-49 { } ; 50-59 { } ; 60-69 { }

-3 Disability field of your school { }

-4 Disability field of your profession { }

-5 { } I can make software programs by myself.

-6 { } I have no problems in using commercially available software.

-7 { } I need someone to help me with using computers.

- 1 . Do you understand the purpose/goal of the software?

Yes, very well | | | 0 | | | No, nearly not at all

- 2 . Do you understand the special features of the software?

No, nearly not at all | | | 0 | | | Yes, very well

- 3 . Do you understand how to use the software?

No, nearly not at all | | | 0 | | | Yes, very well

- 4 . Are the operations need to use this software appropriate for your learners?

Yes, indeed | | | 0 | | | No, not at all

-5 Is it easy to understand the graphic representation/audio representation?

Yes, indeed | | | 0 | | | No, not at all

- 6 . Is the feedback given to the learners effective?

Strongly agree | | | 0 | | | Strongly disagree

- 7 . Do you think the software is effective for learning?

Yes, indeed | | | 0 | | | No, not at all

- 8 . Do you wish to use the software programs in your classroom?

No, not at all | | | 0 | | | Yes, indeed

- 9 . Would you recommend this software to your colleagues?

Yes, very much | | | 0 | | | No, never.

- 10 . Is it easy for you to install the software?

It was very difficult | | | 0 | | | It was very easy

-11 Please score the effectiveness of this program on a scale of 100 points. It's 「 」 .

Finally, please write your comments on the introduction program.

Positive points of the introduction program:

Needed improvements:

Thank you very much for your cooperation.

shorter the better, ` if only there was no significant difference in scores between the conditions. As seen in the comments, the movie was the preferred option of some subjects. However, these positive reactions towards multimedia applications did not influence the scoring of the software programs itself.

As the movie contained a 91 second segment in Software Program 1 and a 69 second segment in Software Program 2, the duration of viewing time for this type was, as would be expected, longer than that of the still image. The still image had a slight advantage (viz. 69 sec. and 91 sec.). Raw data indicated that the time difference between *movie* and *still image* was 142 seconds in mean value. This is still longer than 91 seconds. However, from the statistical point of view, for overall scoring time, there was no significant difference between them using data as follows. *Movie*: overall scoring time vs. *still image*:

overall scoring time plus amount of time of movie clips of its counter presentation. Even so, the net scoring time of the still image was significantly less than that of the movie. There could be some possible answer for it, such as effects of some kinds of emotion related issues, redundant activities or cognitive process, and recalling or comparing process of the movie viewed just before. Further research studies are needed for this part.

For overall, because of the fact that *still image* was more effective in time efficiency and there were no significant differences in scores between the conditions, it can be assumed that the *still image* was more efficient than the *movie*.

Table 4. Differences between the scored data under the two presentation methods

Items	Software program 1:"What color is this part?"				Software program 2:"Same Color "			
	"still image"		U value	level of significance	"still image"		U value	level of significance
	Mdn [quartile]	Mdn [quartile]			Mdn [quartile]	Mdn [quartile]		
- 1 . Do you understand the purpose/ goal of the software?	6[6, 7]	6[6, 7]	61.5		6[6, 6.5]	6[6, 6.75]	58.5	
- 2 . Do you understand special features of the software?	6[6, 6.75]	6[6, 7]	67.5		6[5, 6]	6[5, 6.5]	58	
- 3 . Do you understand how to use the software?	6[5, 6]	6[5, 7]	81		6[6, 7]	7[6.25, 7]	43.5	
- 4 . Are the operations need to use this software appropriate for your learners?	6[5.75, 6]	5[3.5, 6]	34	$p < .10$	6[5, 6]	5.5[5, 6]	57.5	
- 5 Is it easy to understand the graphic representation / audio representation?	5[4, 6]	3[2.5, 6]	41.5		3[2, 5]	6[3.25, 6.5]	41	
- 6 . Is the feedback given to the learners effective?	5[3.25, 5.5]	4[3, 5.5]	57.5		5[3.5, 6]	5[3, 5.5]	52.5	
- 7 . Do you think the software is effective for the learning?	6[4.5, 6.5]	5[3.5, 6]	45		6[4, 6]	6[5.75, 6]	48	
- 8 . Do you wish to use the software programs in your classroom?	6[5.5, 7]	5[3, 6.5]	42		6[5, 6.5]	7[5.25, 7]	49.5	
- 9 . Would you recommend this software to your colleagues?	5[4.5, 7]	5[3, 6.5]	46		6[5.5, 6]	6[4.75, 7]	54	
- 10 . Is it easy for you to install the software?	6[5, 6]	5[4, 6.5]	57		4[3, 6]	5[4, 6.25]	46.5	
-11 Please score the effectiveness of this program on a scale of 100 points.	80[73, 85]	60[55, 80]	33.5	$p < .10$	70[65, 80]	75[70, 88]	43	

Conclusion

The presentation method using *text + still image* is better than *text + movie + narration* only if we take account of the limited conditions such as easy-to-evaluate software assessed by computer literate teachers, and so on. In special education, on the other hand, most software programs are simple and the computer literacy of teachers is on the rise. The results of the present study, therefore, should have an impact on increasing the use of computers in this field. According to Monbusho(2000), 59.9% of all special schools were connected to the Internet, but it has been planned by government that before 2005 this proportion will have risen to 100%. While expectations are high at present, the use of movies on the Internet still has limitations. Based on the findings of the present study, it is still reasonable to use still images in preference to movies over the Internet. It is hoped that these results can be used as practical criteria for the development of programs similar to those presented here.

Future Research Issues

Arising from the results of this study there are several issues that require further investigation. First, why the net scoring time of the still image was significantly shorter than the movie, and second, is it still appropriate to use still image for evaluating more complex software programs? Third, is movie format still ineffective for novices (in computer use) teachers?

Acknowledgement

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Perspectives of Research and Service Activities Aiming at the Construction of a Support System for Deafblind Education in Japan

Megue Nakazawa

Department of Education for Children with Multiple Disabilities

Abstract: Due to the rare incidence of deafblindness, education for children with deafblindness is an area in which information, knowledge and skills are insufficient at both the local and prefectural levels. The National Institute of Special Education, being the sole national center of special education in Japan, is expected to provide various services and conduct research activities to support deafblind education. Aiming at the construction of comprehensive support system for deafblind education, the author ^(10,12,13,14,15,16,17,18,19) has been promoting over the past decade needs-driven research projects, educational consultation services, information services, networking among parents as well as developing international ties concerning deafblindness. Details of these research-linked service activities oriented toward establishing comprehensive support systems based at NISE are described and future perspectives are discussed.

Key Words : Deafblind education, support system, NISE, Japan

I Introduction

Since its establishment in 1971, The National Institute of Special Education (NISE) has taken a central role in Japan concerning practical and comprehensive research on special education, advanced in-service training for teachers, consultation to parents of children with disabilities referred to the Clinical Center for Children with Special Needs, overseas research exchanges and the dissemination of these research results through various means. The 30th anniversary in 2001 marked a fresh start for NISE being reorganized as an independent administrative agency instead of an institute directly affiliated to the Ministry of Education, Culture, Sports, Science and Technology (MEXT). As the national center of special education in Japan, greater demands are now being made on NISE to further tackle issues needing research at the national level and to pursue practical research and service activities accountable to the needs of society.

NISE is the only institute in Japan to carry out research on deafblind education. Consequently, it is expected to make a major contribution to the field of deafblindness with the dissemination of its research findings, the development of in-service teacher training programs and in the provision of educational consultation services for parents and related people.

This report provides an overview of the current status of deafblind education in Japan, the changes in social context over the past decade, the details of research and service activities of NISE that the author has been developing and the perspectives of future development of these activities to meet the expectations made of NISE described above.

II Current situation of deafblind education and changes in social context of deafblind persons

Several industrialized nations recognize deafblindness as a distinct disability category, such as the United States and Norway ^(1,6,12,18,25). However, as deafblindness was included into the category of "multiple disability" in Japan without any mention of its special needs, no system of support was developed. As a result, no pre- nor in-service training program for teachers of deafblind education had been developed. NISE had been the only institute in Japan to have provided consultation services on deafblindness. Currently, there are three researchers in the Department of Education for Children with Multiple Disabilities at NISE, including the author, who are engaged in deafblind education research.

1 A Population of deafblind students and children

The first survey on deafblind education was carried out in the 1993-94 school year by the Department of Education for Children with Multiple Disabilities ⁽¹¹⁾. The survey was done through questionnaires sent to all schools for the blind, schools for the deaf and day centers for preschool children with visual or hearing impairment. Three other types of special schools were not included in the first survey. The second survey carried out five years later in the 1998-99 school year covered all types of special schools and day centers for pre school children with visual or hearing impairment ⁽²²⁾. The two surveys defined deafblindness as a concomitant impairment of vision and hearing, with the following criteria for visual and hearing impairment: 1) "corrected visual acuity of less than 0.3" or "not measurable" and 2) "hearing threshold level of more

than 30dB" or "not measurable." For children and students identified as "not measurable," the result of the checklist on visual and auditory behavior was noted to determine eligibility. The criterion of "impairment in visual field and night blindness" was also added to screen progressive visual impairment such as retinitis pigmentosa. Those with severe problem with these two indices were included in the count even when they had visual acuity of more than 0.3, not only because they face potential deterioration of vision but also these two types of visual impairment themselves cause substantial problems in learning and social interaction as well. The number of children and students with deafblindness identified in the two surveys is shown on Table 1. The percentage of deafblind children and students in respective school types is also shown.

In these two surveys, the deafblind population in special education may not yet be fully ascertained. For example, there was a drastic fall in the deafblind population in schools for the deaf in the 1998 survey in comparison with 1993. As this result was not analyzed in the second survey, the author is not in the position to tell what caused this drastic decrease. However, as schools for the deaf in Japan have been increasingly adopting total communication and enrolling more children with multiple disabilities and deafblindness, it is difficult to find a reasonable cause within schools for the deaf that brought about this drastic fall. There is a day center for hearing impaired preschoolers in Japan which carries out an annual ophthalmological screening test ⁽³⁾. Each annual result since 1998 revealed visual problems in more than 25% of the children. Even though many of the children in this day center have additional disabilities which may partly contribute to the high prevalence, it is difficult to believe that only 0.8% of the students in schools for the deaf has

visual impairment.

One reason accounting for the identification of more deafblind population in the first survey might be the conscientious awareness raising done on schools for the blind and for the deaf during the survey through dissemination of information concerning deafblindness.

As there is no disability category of "deafblindness" in Japan, hard of hearing is easily overlooked in schools for the blind as well as low vision in schools for the deaf, particularly such progressive visual impairment caused by Usher syndrome. Usher syndrome is thought to be responsible for about half the adult deafblind population in Japan.

To get reliable results through surveys, awareness raising on deafblindness in all schools is needed. Accurate data on the deafblind population in schools provide the basis and orientation to research and service activities. For the time being, the analysis of referrals on deafblindness made to NISE and visits by researchers to schools where deafblind children are enrolled are necessary to supplement the data obtained through the survey.

Another method to make a reasonable calculation on the deafblind population Japan embraces is to apply the figures of other nations, which have had a long history of deafblind education. The federal definition of deafblindness, which is not medical but functional, in the United States is as follows.

"Deaf-blindness means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness ⁽⁶⁾. "

Table 1 Survey of deafblind students in school years 1993 and 1998

TYPE OF SPECIAL SCHOOLS	DEAFBLIND CHILDEN in 1993/ TOTAL ENROLLMENT* = %	DEAFBLIND CHILDEN in 1998/ TOTAL ENROLLMENT** = %
BLIND	138 / 4,773 = 2.9%	96 / 4,199 = 2.3%
DEAF	128 / 7,842 = 1.6%	54 / 6,836 = 0.8%
INTELLECTUAL DISABILITY	Not surveyed	64 / 53,561 = 0.9%
PHYSICAL DISABILITY	Not surveyed	59 / 18,464 = 0.3%
HEALTH IMPAIRMENT	Not surveyed	39 / 4,395 = 0.9%
DAY CENTER for VISUALLY or for HEARING IMPAIRED CHILDREN	25 / data unavailable	22 / data unavailable
TOTAL NUMBER (DOUBLE ENROLLMENT)	291 (10)	353 (15)

* Ministry of Education. (1994). Special Education Statistics, School Year 1993.

** Ministry of Education. (1999). Special Education Statistics, School Year 1998.

The number of deafblind children differs greatly between the federal count and the census done by the state and the multi-state deafblind program. The former adopts a far more conservative figure. The number of deafblind students aged 6 to 21 in school year 1996-97 submitted to the Congress by the federal government was 1,453⁽³⁴⁾. As the population of Japan is about half that of the United States, we may roughly estimate about 700 deafblind students in Japan if the United States federal definition is applied.

Although the age group it covers does not overlap completely, this figure, however conservative it may be in the United States, is twice the number identified in the second survey in Japan. We would not be too short of the target if we assume a deafblind population of somewhere between 350 and 700 for whom "particular considerations on the disability conditions are needed for instruction"⁽²⁾. In the future, it is important to include regular schools to accurately determine the deafblind school population.

2 A brief history of deafblind education in Japan

Deafblind education in Japan started in 1949 at the Yamanashi Prefectural School for the Blind with two totally deafblind children^(7,33). This pioneering program continued for 20 years, and the Ministry of Education supported it in the last ten years through the Grant to Schools with Experimental Practices⁽⁷⁾. This successful long-term program laid the foundation for deafblind education in Japan as well as giving a lasting influence on the research approach concerning deafblind education.

When NISE was established in 1971, one of the many roles it was expected to play was the promotion of research on and the development of in-service training programs for deafblindness⁽⁷⁾. Nevertheless, when compulsory education system finally encompassed all school-age children in 1979, the School Education Act included deafblindness in the category of multiply disability. It was a time when a big population of children with severe and multiple disabilities who had been exempted from school education until that time flooded schools which had had little or no experience with such a population. To cope, the research and in-service training programs at NISE gave a priority to severe and multiple disabilities that far outnumbered deafblindness in population itself.

Research on deafblindness was barely sustained by the Department of Education for Children with Multiple Disabilities at NISE. Due to the practical influence of the Yamanashi Prefectural School for the Blind, research centered on case studies of a relatively small number of deafblind children who made periodic visits to NISE, employing methods used in schools for the blind. This tradition has been passed down to succeeding researchers and still exists to date.

The system and the contents of education for children with severe and multiple disabilities steadily developed by the early 1990's. It was a time when social context of deafblind adults was undergoing rapid change, stimulating the awareness of the parents with deafblind children. It was also a time when the author began investigating overseas practices and the delivery of education services to deafblind children^(9,10,18). The situation regarding deafblind research and service activities began to take on a new phase in the following. The first survey of deafblind education that was carried out in 1993 was one such manifestation of the new phase.

3 Changes in the social context of deafblind adults

The year 1983 saw the first deafblind person accepted into a university in Japan. He is adventitiously deafblind and has now been working as an associate professor at a university since 1997. Support service programs intended for deafblind consumers, such as interpreter-guide services, were all but nonexistent in both the public and private sectors at the time of his matriculation. A group of volunteers gradually gathered around him to support him in his studies and daily life. The number of volunteers grew and their activities began to draw other deafblind persons who were hitherto isolated in their homes. More and more deafblind persons were identified, the needs of deafblindness clarified and concrete support services were worked out by the volunteers.

In 1991, the volunteer group which had been supporting him served as the parent body to establish the Japan Deafblind Association (JDBA). It is a social welfare corporation dedicated to promoting independence and social participation of deafblind persons, and is run by government subsidies and private contributions. In the same year, parallel to this development, local deafblind clubs were organized in two major cities in Japan, Tokyo and Osaka, and these clubs now act as a focal point for the development of needs-related activities for deafblind persons. Big changes have taken place in the last decade concerning deafblind persons in Japan. At the time of its establishment, JDBA had identified only some tens of deafblind persons. However, as of March 2001, there were 560 deafblind persons registered with the JDBA. Interpreter-guide services which are essential in promoting the independence and social participation of deafblind persons expanded rapidly. The interpreter dispatching project which JDBA started with a minimal number of interpreters now numbers 1700 registered interpreters with an annual delivery load of more than 7000 calls⁽⁵⁾.

Local deafblind clubs are also spreading steadily, and 31 of 47 prefectures in Japan, that is, two third of the prefectures, now have a deafblind club. Parents of deafblind children, who could not hitherto identify

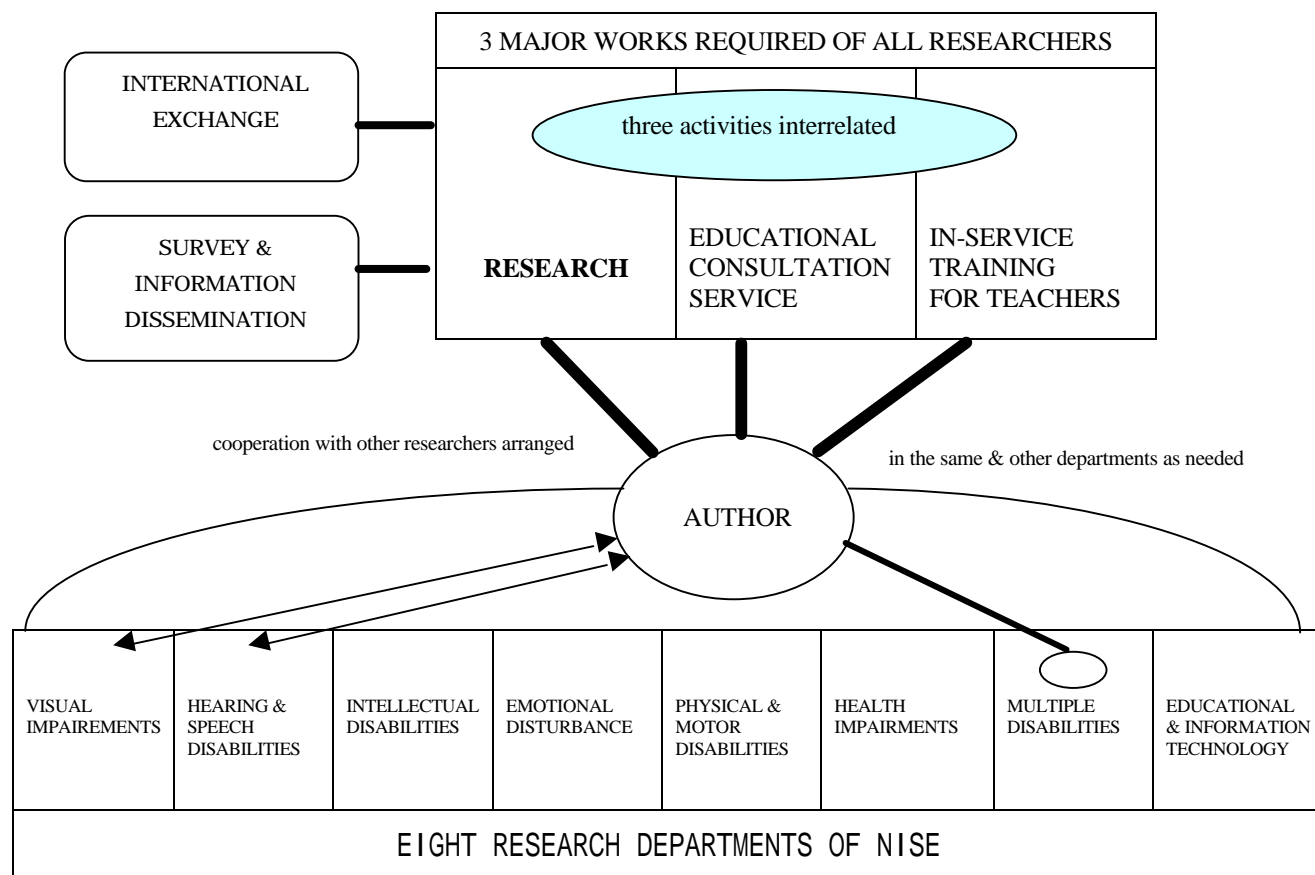


Fig.1 The eight research departments and the activities of NISE

themselves with other disability groups, gradually came to join local deafblind clubs to meet deafblind persons and other families in the same prefecture. Unlike many other countries with separate organizations for deafblind adults and for parents, the two parties in Japan collaborate closely to promote welfare and education for the deafblind.

As a result of continued lobbying, the national government included interpreter training services in 1998 and the interpreter dispatching services in 2000 to its list of subsidies to prefectural governments. As of 2001, 23 prefectural governments are subsidizing interpreter-training services and 11 provide interpreter-dispatching services. An increase in the prefectural governments initiating these services is anticipated, and all prefectures in Japan would most probably be providing these two services in about five to ten years ⁽⁵⁾.

Currently, "deafblindness" is not legally recognized as a disability category in the welfare system of Japan. However, in 1999, the Ministry of Welfare and Labor entrusted the Research Institute of National Rehabilitation Center for the Disabled to launch a 3-year research project on "How Disability Policies Should be for Deafblind Persons ^(23,24)." The result of this project will be used to orient welfare policies specifically geared toward deafblind persons in the near future.

There has not been a census on deafblind population in Japan. Calculated from statistics on overseas deafblind populations, it is estimated that Japan has a deafblind population of somewhere between 13,000 and 20,000 ⁽⁴⁾. Deafblind people are a diverse population, the diversity resulting from the combination of the differences in the degree of sensory impairments, the difference in the onset of impairment, the presence of additional disability and the quality of education provided. The majority of the deafblind population is adventitious, with Usher syndrome assumed to be the etiology accounting for the deafblindness of about half the population.

II The system of NISE and the support needs of deafblind education

In view of the drastic changes taking place in Japanese society as mentioned above, in early 1990's the author began to recognize the need to reevaluate the traditional research approach on deafblind research hitherto undertaken at the Department of Education for Children with Multiple Disabilities. Before going into details, an overview will be presented on the functions of NISE and the identification of support needs for deafblind education.

1 An overview of research and service system at NISE

NISE comprises of nine departments, eight of which are dedicated to research and one to administration. Seven of the eight research departments correspond with the disability categories used in Japan and one is specialized in educational information technology (Fig. 1).

The three major activities carried out at NISE are research, in-service training for special education teachers and consultation services for parents and other related persons.

The research projects at NISE can be divided into three types in accordance with the type of budget and project involved: 1) intra-departmental projects funded on a regular basis, 2) inter-departmental projects on themes of importance and urgency funded by an ad-hoc budget where researchers from multiple departments collaborate and 3) projects funded by grants researcher(s) obtain from outside NISE. Research projects on deafblindness have belonged to the first and the third types.

In-service training programs are offered for teachers throughout Japan who are expected to assume leadership roles in each locality after the program. There are 1-year and 2-month courses and a number of short-term programs lasting from one to four weeks. Each trainee on the 1-year course is assigned to a research department related to his/her interest and a program is tailored to each trainee under the supervision of a researcher. There are eight 2-month mainly lecture-based courses for visual impairment, hearing impairment, speech impairment, intellectual disability, emotional disability, health impairment, multiple disabilities and educational technology. Deafblindness is included minimally in the 2-month course for multiple disabilities, namely, half-a-day lecture and one-day workshop on simulation experience of deafblindness offered by the author.

Consultation services are provided by the Clinical Center for Children with Special Needs upon requests from parents of children with disabilities. The Center assigns each case to the most appropriate research department(s). Educational consultation services were long restricted only to parents who could come to NISE in person, however, in 2001 NISE expanded the service to accept requests from both parents and teachers via e-mail, the telephone and the post, other than a direct visit.

There are currently 51 researchers at NISE, and each one is required to be actively involved in all three functions NISE; namely, research, in-service training and educational consultation. One unique aspect of NISE is that it has a system that enables the formation of a dynamic inter-relationship between these three functions. Another asset is that experts from different disability categories are all housed under the same roof, and multi-disciplinary cooperation may be formed easily if a researcher finds it

necessary. In this regard, the author has maintained close cooperation with experts on visual impairment and hearing impairment. Figure 1 illustrates the eight departments and the major functions of NISE as well as how a researcher is related to these functions, using the author as an example.

The results of these three activities are disseminated through various means. International research exchanges are also actively encouraged at NISE. All researchers take part in these two activities as well.

Under such circumstances, the author sought contributions one researcher could make in research and service provision in response to the needs identified in deafblind education.

2 Needs of research and service provisions in deafblind education

The results of the surveys of deafblind education mentioned earlier identified support needs from the perspective of teachers ^(11,22). On the other hand, the analysis of requests for consultation to Clinical Center and direct contacts to the author through correspondence regarding deafblindness from across the country ⁽¹⁶⁾ helped identify the support needs from the perspective of parents.

The variety of needs for support of teachers and parents found from these two sources of information were summed up in the following five areas to strategically address them in the research and service provision plan:

- 1) Consultation to parents concerning the raising of a deafblind child, adopting a total view of the life.
- 2) Consultation to teachers according to the type of deafblindness and the child's needs.
- 3) Parental needs to meet with other parents.
- 4) The need of parents and teachers for a variety of information about deafblindness.
- 5) Scarcity of information on deafblindness in Japan leading to the need for international investigation and information exchange.

In addition to the above-mentioned areas, the following points also were considered necessary in developing research and service plans.

- (1) Need to solve the problem of distance.

As deafblind children are widely spread across the country, the consultation service must not be restricted to a center-based system, but should include such means as correspondence, visits by researchers, a live-in workshop at NISE, and others.

- (2) Need to work with schools for the deaf as well as schools for the blind.

As mentioned earlier, the Department of Education for Children with Multiple Disabilities has traditionally had close ties with schools for the blind, but has had limited ties with schools for the deaf. The result of the first survey ⁽¹¹⁾ identified almost the same number of deafblind students in

schools for the deaf and schools for the blind. Communication methods chosen by the teachers in two different types of schools differ greatly, particularly as regards sign language. Research and services should be planned with due regard to the difference in culture of different school types, thus promoting them to support each other to widen the communication opportunities for deafblind children. Naturally, special schools for other disabilities which usually lack expertise in both vision and hearing should also be considered.

(3) Need to cope with a variety of sub-groups of deafblind children.

Deafblindness is a rare disability which has its unique needs common to all deafblind children. However, as there is also a great diversity within this small population, research should be made to clarify the needs and support measures for a number of major sub-groups. The Department of Education for Children with Multiple Disabilities has traditionally focused on congenitally deafblind children with additional disabilities. Children

with high cognitive capacity, with progressive vision deterioration or infants with deafblindness have not been included in the research projects. However, parents and teachers have distinct needs in accordance with the different sub-groups. The following seven sub-groups were selected and research was planned in combination with consultation services to these groups.

- (I) Those with congenital rubella syndrome
 - (ii) Those with CHARGE association * and various medical needs
 - (iii) Those with Usher syndrome and other progressive deafblindness
 - (iv) Those with complexities due to premature birth
 - (v) Those with severe motor and intellectual disabilities
 - (vi) Families with deafblind infants and toddlers
 - (vii) Those with high cognitive capacity
- (4) Need to link "education plan" with "total personal plan."

The perspectives of teachers' needs and parents' needs differ greatly. Teachers' are usually restricted to tasks and a

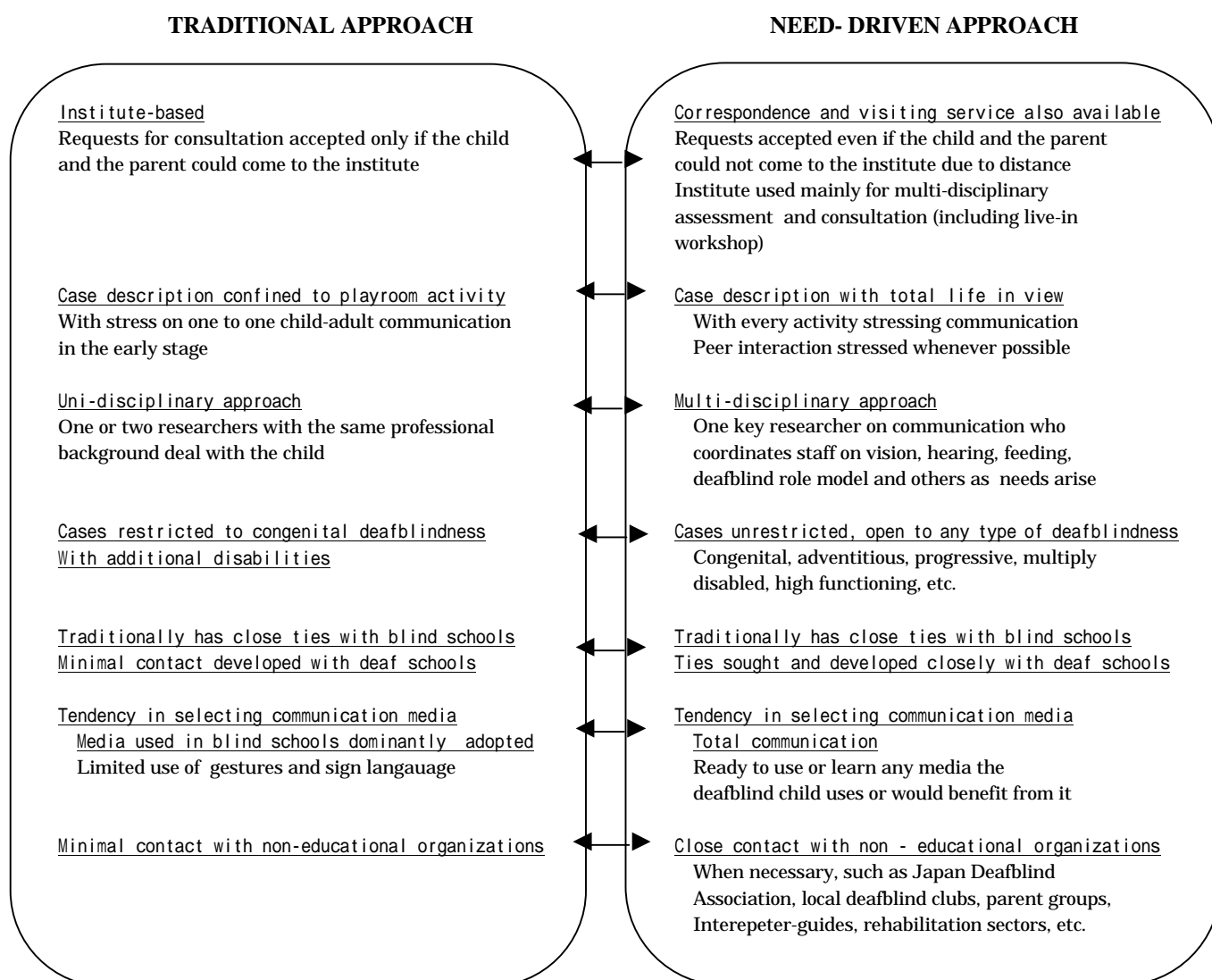


Fig.2 Two approaches for research/support services for deafblindness

activities at school whereas parents have the entire life of the child in view - before and after school, during weekends and vacations as well as life in the community. When both distant senses of a child are impaired, leisure activities, for instance, may be extremely limited, leading him/her easily into self-stimulatory behavior when left alone. Incidental learning through distant senses that takes place without effort in most children is also extremely limited in a deafblind child, and unless a practical and feasible intervention is planned for all the waking hours ⁽⁶⁾, the development of a deafblind child could easily be hampered. The education plan should be dynamically linked with the personal plan and priorities carefully selected to be of benefit to the deafblind child. For teachers and families who have difficulty understanding this special need of deafblindness, a training program to promote empathetic understanding of deafblindness should be developed as well.

(5) Need for multi-disciplinary teamwork and collaboration with different organizations

The needs of a deafblind child covers a wide span - functional assessment of vision and hearing, selection of communication system, adjustment of environment, orientation and mobility, medical needs if any, eating, establishment of regular patterns in sleep and meals, toileting, development of enjoyable leisure activities, formation of sibling and peer relationships, participation in community activities and many more. To cope with these needs in the community, the consultation services provided by schools for the blind and for the deaf, such as support of a multi-disciplinary team at special education centers and welfare organizations in the prefecture or at NISE, contacts with deafblind organizations and parent groups, support of interpreter-guides and volunteers, and other relevant resources must be identified and coordinated. The Department of Education for Children with Multiple Disabilities has traditionally been promoting case studies with uni-disciplinary researcher(s), but the large variety of needs found in deafblind children requires a variety of services to be coordinated by a key person.

3 Change in the approach to research and service activities

The case studies focusing on communication development of congenitally deafblind children based on traditional approach has been actively promoted to date ^(21,26,27,28,29,30,31,32). However, the reevaluation of the traditional approach and recognition of the vast range of needs in deafblind education that are left unattended has driven the author to adopt a different strategic approach to tackle them. The differences in the two approaches are illustrated in Figure 2.

III Strategic development of research and service activities from 1993 to 2001

Based on the five major areas of needs identified in the previous section, and utilizing the resources at NISE to the full, the author strategically developed various research-linked service activities.

1 Responding to the needs of consultation through various methods

Through consultation at NISE, by telephone, fax, e-mail (after 1997), receiving videos from parents and teachers, home and school visits and others, the author made contact with approximately 160 deafblind cases spread throughout Japan since 1993. About one sixth of these cases were catered for in live-in consultation workshops held at NISE for a period of 3-4 days. A combination of assessment, consultation, guidance and in-service training are carried out in the workshops. Each workshop is coordinated in such a way so that a group of 2-5 children with similar needs were invited together with their parents, siblings, teachers and other related staff. The number and the types of participants over the past decade is shown on Table 2.

Researchers from the Departments of Education for Children with Multiple Disabilities, with Visual Impairments, and with Speech and Hearing Disabilities worked closely during the workshop. Ad hoc collaborators to meet the various needs of the children were invited to join the workshop, such as teachers of the National Kurihama School for Children with Disabilities involved with deafblind education (the school is adjacent to NISE). Figure 3 illustrates a multi-disciplinary team organized for a certain workshop.

These workshops were one method of educational consultation service provided for deafblind referrals, but they were also directly linked to research to deepen understanding of the seven sub-groups and to clarify the needs and necessary support for these groups ^(12,13,17,20).

At the same time, these workshops provided opportunities for parents to meet other parents sharing similar needs and anxieties who had often been isolated in the locality. The encouragement and relief gained by the families through these encounters constituted one of the most important aspects of the workshop. As for teachers, the workshop served as an on-site training program covering the total life activities of the child. Also, the encounter with other teachers working with similar children in different types of special schools (particularly schools for the blind and for the deaf) gave them the chance to share respective experiences and to have insight into the advantages and disadvantages each school culture possesses regarding deafblind education.

Tabel 2. Live-in workshops between 1993 and 2001

*CRS: congenital rubella syndrome

year	target sub-group, number of children sex, age or school dept., type of school	who came with the child
1993	<u>usher syndrome</u> , 2boys, elementary dept., blind school & deaf school	mother, father, siblings of 1child, 4 teachers
1994	<u>CRS*</u> , 2girls, elementary dept., blind school & deaf school	mother, siblings of 1 child, 4 teachers
1995	<u>usher syndrome</u> , 3boys, elementary & lower secondary dept., blind school & deaf school	mothers, siblings of 1boy, 7teachers and 2 dorm staff
1996	<u>CRS*</u> , 5boys, pre-schools & elementary dept., blind school, deaf school, day center for hearing impaired	mothers, siblings of 2 boy, 6 teachers, 1 day center director
1997	<u>premature birth</u> , 2girls & 1boy lower & upper secondary dept., blind school & deaf school	father, 2 parent surrogates, 3 teachers
1998	<u>high cognitive function</u> , 2boys, elementary dept., deaf school	mothers, 3 teachers
1999	<u>CHARGE</u> , 3girls, 2-year ord, elementary & lower secondary dept., deaf school & consultation at blind school	mothers, sibling of one girl, 4 teachers
2000	<u>severe multiple disabilities</u> , 3boys, cockayne, cerebral palsy & premature birth, pre-school & elementary dept., school for physically disabled	mother, father, sibling of one boy, 5 teachers
2001	<u>early intervention</u> , 1girl & 1boy, premature birth & etiology unknown, 2year-old & 3year-old, regular nursery school & blind school kindergarten	mothers, 3 teachers
	<u>high cognitive function</u> , 3boys, elementary dept., deaf school	mothers, fathers, 8 teachers
	<u>CHARGE</u> , 1boy & 1girl, 3year-old & 4year-old, regular kindergarten & day center for disabled children	mothers, fathers

Furthermore, when families and teachers live together a few days with the deafblind children in focus, the needs of each deafblind child over the total life scene and the hardships of the families involved were more easily shared by the teachers, leading to a better cooperative relationship between the two parties. Shared understanding of deafblind children by families and teachers were further enhanced by the simulation experience of deafblindness to be described in the following section. The insight of families and teachers into the needs of deafblindness around the clock facilitated the linkage of the "educational" and the "total personal" plans.

2 Research on simulation experience and its use in a training program

As a method of promoting empathetic understanding of deafblindness and low vision in teachers working with deafblind children, the author collaborated with the Department of Education for Children with Visual Impairment between 1993-95 to develop a program of simulation experiences in a research project. Four-day workshops to deepen the

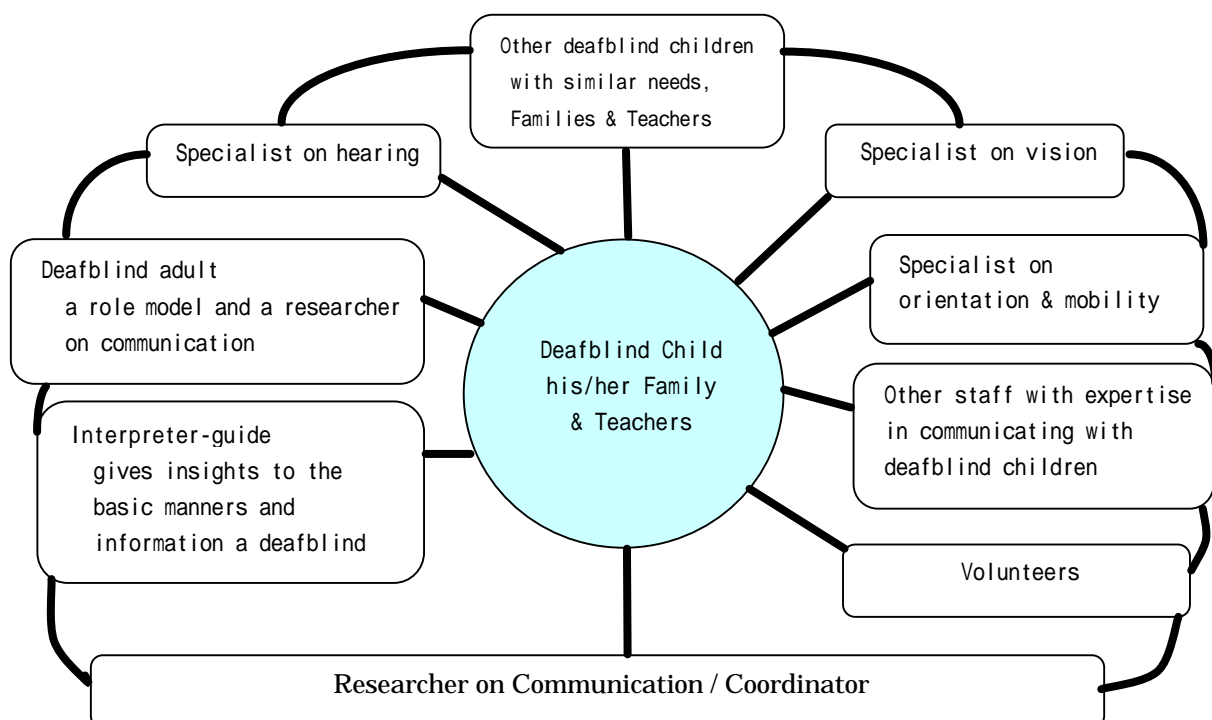


Fig. 3 Example of a multi-disciplinary team at a live-in consultation workshop

understanding of low vision and deafblindness were held six times between 1994 and 1996. A total of 223 teachers, welfare and medical staff from around the country participated in the workshops ⁽⁸⁾. After the workshop, many of these participants carried out simulation experience sessions in their locality when necessary. The simulation experience kits were lent to them upon request.

Simulation experience of deafblindness and low vision are now effectively used in live-in consultation workshops and in-service training programs at NISE, training programs for interpreter-guides for deafblind persons and, Naturally, in schools where deafblind children are enrolled.

3 Research and service activities on information provision

Requests for various information on deafblindness have been coming from parents, teachers, welfare and medical staff. However, no library or any researcher in Japan has collected enough literature on deafblindness to cope with these various requests. The author has been providing whatever information possible on deafblindness upon request from parents and teachers on an individual basis.

In 1997, the author received an outside grant to collect information on deafblindness. Between 1997 and 1999, the author collected a little more than 700 books, manuals, periodical, proceedings of deafblind conferences, academic papers, videos and other materials on deafblindness in Japan and from overseas, made a database and started to build up the "Deafblind Library" in response to the need for information. The list of titles of the literature and videos collected are given on the web site.

The web site "Deafblind Information Network in Japan" was set up in 1999 to provide information on various sites related to deafblindness in Japan, on some etiologies of deafblindness, introducing international sites on deafblindness and reports of international conferences attended. Hits between May 2000 and December 2001 numbered 10,100.

Dissemination of deafblind information in print form has been done by "Deafblind Education and Research," a biennial publication of the Japan Deafblind Association to which the author has been working as an editor. A thousand copies are distributed free of charge to all schools for the blind and for the deaf in Japan, special education centers in all prefectures, teacher training colleges, families with deafblind children registered with the Japan Deafblind Association and others. The themes taken up in the past five publications are "Congenital Rubella Syndrome," "Usher Syndrome," "Children with Additional Severe Disabilities" and "Transition." "CHARGE Association" is the theme for the sixth volume to be published in August 2002. The uniqueness of this publication is that the contributors of the papers are mainly deafblind consumers,

parents and teachers. Each publication also includes information from other countries concerning the theme.

4 Service activities for the formation of parental networks

In addition to arranging encounters for a limited number of families in live-in consultation workshops, the author started a bulletin board on the web site to promote parental networking. The bulletin board was set up in April 1999, and there have been approximately 2,000 postings by parents, teachers, volunteers, interpreters, deafblind persons and many others. The majority are postings of parents and they came from 26 of the 47 prefectures in Japan.

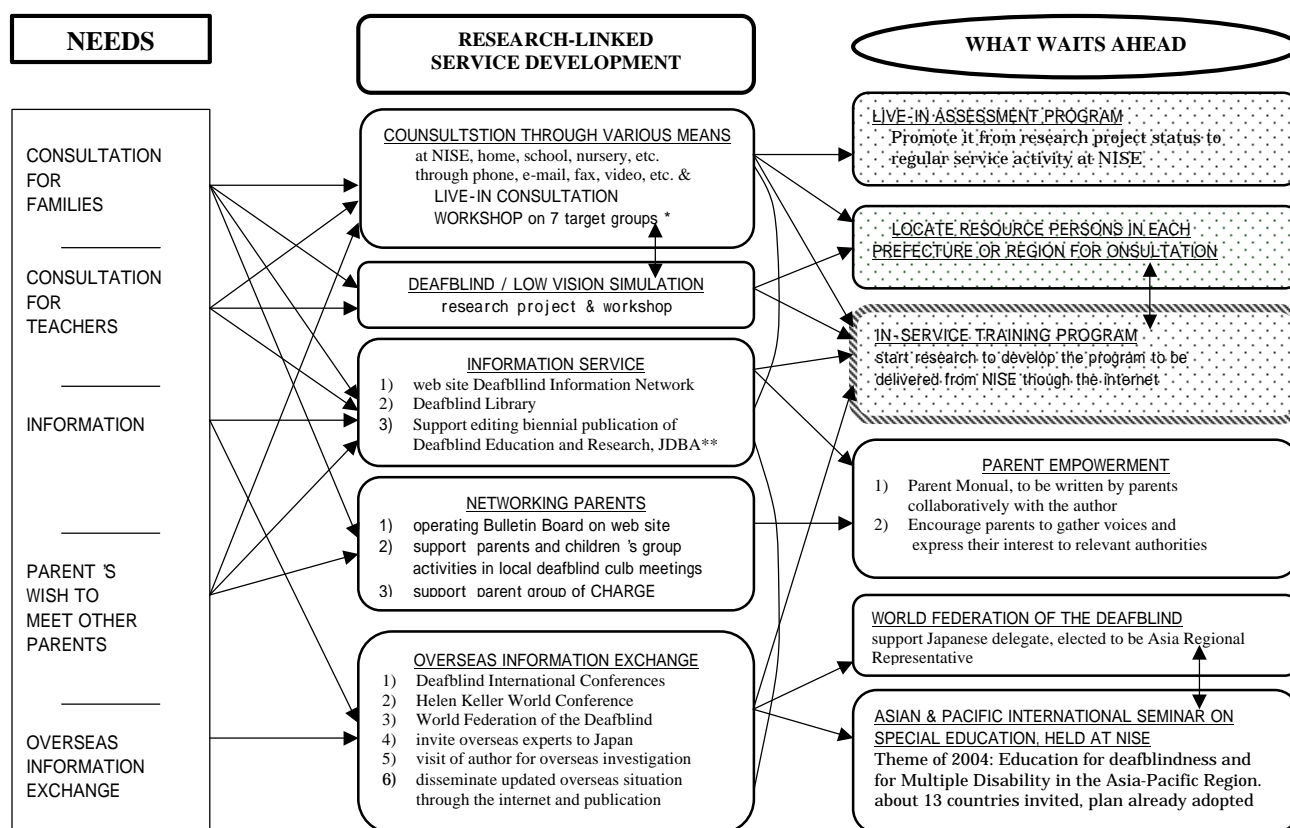
The author also participates whenever possible in the annual convention of local deafblind clubs or multi-prefectural deafblind clubs in which workshops on deafblind children are sometimes organized by parents. The author shares the information with parents living in various areas of Japan as well as encouraging these parental initiatives.

The parent group of the CHARGE association was organized through the initiative of a parent a few years ago and its membership now is 25. Exchange of information in this group is very active. The publication of the coming 'Deafblind Education and Research' focusing on CHARGE association includes a large section dedicated to the first parental get-together held in 2001 and case reports written by two parents. It is hoped that this publication will not only provide information on the CHARGE association to those who need it, but in addition offer an opportunity to parents who did not know of this group.

5 International exchange

Being a rare disability, international exchanges of research and current practices in deafblind education is very active. Deafblind International is the international organization of persons involved with the support of deafblind children and adults. The author has participated in the World Conference held in 1999 and the Asia Conference in 2000 ⁽¹⁹⁾ making a presentation at the former conference on the current situation of deafblind education in Japan ⁽¹⁵⁾. Exchange of information and development of international ties are essential aspects of these conferences. To grasp the global trend concerning deafblind consumers, the author also participated in the Helen Keller World Conference held in 1997 ⁽¹⁹⁾ and the Founding Assembly of World Federation of the Deafblind (WFDdb) held in 2001.

Also, the author coordinated the invitation of an expert on deafblindness from the United States ⁽¹⁾ as well as made overseas investigation on the support system of deafblind education ⁽¹⁸⁾.



* Following 6 major target groups need to be researched to identify distinct needs and provisions: 1)congenital rubella syndrome, 2)CHARGE association, 3)jusher syndrome, 4)complications of prematurely, 5)children with severe cognitive and physical disabilities, 6)high functioning deafblind children, 7)family-centered early intervention.

** Japan Deafblind Association

Fig. 4 Needs, research-linked service and future perspectives

Needs-driven research and service provision are closely related (see Figure 4).

IV Future perspectives

Based on the results obtained from the research and service activities over the past decade and on the expectation of and available resources at NISE, the following research and service activities seem necessary as well as feasible. (Refer to right column of Figure 4.)

1 Research on the development of distant in-service training program on deafblind education using the Internet

This issue should have top priority in future research. The results of the research over the past decade were enjoyed by a limited number of teachers participating in the project. Based on these results, further research should be designed on the development of training programs to be used for in-service training programs for all teachers involved with deafblind education (those currently identified number approximately 350). "New Perspectives of Special Education in the 21st Century" ⁽²⁾

published by the Ministry of Education recommends the development of distant training programs by NISE. Distant training programs using the Internet are actually suitable and feasible for a rare disability like deafblindness. When all teachers involved with deafblind education were linked through the Internet in the training program, teachers working with deafblind children having similar needs may also form sub-groups using mailing lists and build a support system among themselves.

2 Establishment of a live-in comprehensive assessment program

This has been done over the past decade as a "research project." However, in view of the rarity of deafblindness and of the effectiveness of this method, the author finds it one of the ideal service activities a national center could provide to population with a rare disability. Possibilities should be sought toward this end in the future.

3 Identification and maintenance of human resources on deafblindness in each prefecture

Through live-in consultation workshops and simulation experience workshops, teachers in different prefectures

who are both able and eager to support deafblind education are being identified. Also, there are a number of schools for the blind and schools for the deaf, which have developed an excellent cooperative relationship in supporting deafblind students. It is crucial in the future to identify, develop and maintain key persons or organizations in each prefecture that can provide consultation, advice and guidance on deafblind education which has until now been concentrated solely on the NISE.

4 Empowerment of parents

The long isolated parents and families are now beginning to unite across the country through the widespread use of the Internet and the development of local deafblind clubs.

One important aspect the postings on the bulletin board revealed was the countless measures parents have devised when bringing up deafblind children. These measures are both practical and readily available. Also, the deep insight into deafblindness born out of love and years of child raising has the wisdom and power with which no professional can compete. Parents' manual on raising a deafblind child is not yet written in Japan, and the author has been discussing with a number of parents the possibility of compiling a manual written mainly by parents. The activity to utilize one's personal experiences and to have its value acknowledged by others would contribute to the further empowerment of parents. The voice of the parents gathered through such endeavor could also provide an important orientation to research and policy concerning deafblind education.

5 International exchange

Research exchange on deafblind education has been and will be promoted in the future as well, particularly on distant teacher training programs in the near future. Another aspect needing development is exchange with Japan's neighbors in Asian and Pacific countries. At the founding assembly of the World Federation of the Deafblind, the Japanese delegate was elected as the regional representative of Asia. He was asked to gather information in Asia concerning welfare for deafblind people and to contribute to the international exchange in this region of the world. The Asian and Pacific International Seminar on Special Education which NISE hosts annually is planning to hold the seminar in 2004 on the theme of "multiple disabilities and deafblindness." This requires a further exchange with Asian and Pacific countries on deafblindness from the perspective of education.

The above are some of the necessary and feasible propositions for future development concerning research and service activities on deafblind education in Japan. It is going to take much more effort and time before a

comprehensive support system for deafblind education will be fully constructed in Japan. Nevertheless, the results of the past decade show that the development of needs-driven research and services in feasible areas, with a comprehensive system always in mind, guide the way to the next step that will eventually lead to the construction of such a system.

*CHARGE association:

CHARGE association refers to children with a specific set of birth defects. It is one of the etiologies that may cause deafblindness. The acronym 'CHARGE' originally came from the first letter of some of the most common features seen in these children:

C - Coloboma of the eye

- Cranial nerve anomalies

H - Heart malformation

A - Atresia of choanae

R - Retardation of growth and/or development

G - Genital and/or urinary abnormalities

E - Ear abnormalities/hearing loss

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**Peer Social Interaction and Prosocial Behavior:
Effects of Group-oriented Contingency on Students with
Intellectual Disabilities and a Student with Autism**

Megumi Kojima

(Department of Education for Children with Intellectual Disabilities)

This study examined the effects of a group-oriented contingency program in the promotion of peer social interactions. The programme included the following components: 1) pair units to reinforce, 2) structured chances to support, and 3) simplification of a group-oriented contingency system. Untrained pro-social behaviours were also analyzed. The subjects were two students with intellectual disabilities and one student with autism. A changing criterion design was used. Results indicated that all children increased their performance on peer interactions and their performance was maintained in a baseline probe. The children with intellectual disabilities displayed many prosocial

behaviours such as prompting, encouraging, and so on, however, no prosocial behaviour was observed in the child with autism. Some of this behaviour can be attributed to actual improvement in the autistic boy. These results suggest that a group-oriented contingency program is an effective and practical intervention for all subjects. The issue of maintenance is also discussed in terms of peer reinforcement, which was alternated with reinforcement by the teacher.

Key Words: Group-oriented contingency, peer interactions, prosocial behaviour, student with intellectual disabilities, student with autism.

**The Role of “Tsukyu” in Educational Counselling of
Children with Special Needs**

Michiyo Kobayashi and Shigeki Kuboyama

(Department of Education for Children with Speech and Hearing Handicap)

In recent years there has been an increasing emphasis on educational counseling at the earlier stages in special education. This paper considers the role of “Tsukyu” (i.e. resource rooms) at elementary schools in educational counseling for preschool children with special needs and their parents.

Two surveys were conducted to determine how the Tsukyu functions as a place of educational counseling for young children and their parents, and what parents want from the Tsukyu. It was found that more than 60% of the Tsukyu surveyed offer educational counseling to preschool children. It was also found that counseling is beneficial, not only for children and parents, but for teachers as well because teachers sometimes have difficulties due to lack of time and experience.

The survey findings indicate that parents want the Tsukyu to provide information and guidance that meet their child's needs and for the Tsukyu to be a place where they can interact with other parents. Furthermore, they want to consult with teachers at the Tsukyu about the problems they have in everyday life.

It was found that Tsukyu have begun to play the role of an educational counseling centre for preschool children and it is expected they will become an important part of the early intervention system in Japan.

Key Words: educational counseling, Tsukyu, preschool children, early intervention system, childcare support

**An Evaluation of an Effective Presentation Method Implemented in
Multimedia Applications Designed to Help Special Education
Teachers Select Useable Software Programs**

Munekata Tetsuya

(Department of Educational Technology)

Selecting useable software programs is a time-consuming task for special education teachers. Many use "trial and error" until they find a program most suitable for the needs of the children they teach. Munekata et al. (1998) developed and evaluated an HTML (Hypertext Mark-up Language) based multimedia-teaching module introducing 74 educational software programs to teachers. The module contains movies and text information. The above-mentioned study, however, did

not examine the effects of method of presentation. The purpose of present study, therefore, was to discover a better presentation method for making multimedia applications designed to help special education teachers select useable software programs. Differences between two presentation methods were investigated. The subjects were 22 special education teachers with good computer literacy. Each teacher was asked to score two software programs under two conditions; 1)"text +

movie + caption", and 2)"text + still image." It was found that net scoring time in the latter condition was shorter than the former condition ($t=2.58$, $.01 < p < .05$), and there were no significant differences between both conditions on scores. In terms of time efficiency, findings indicate that "text + still image" exceeded "text + movie + caption." However, it must be emphasized that these findings are restricted to limited conditions. In this study, for example, the researcher prepared easy-to-evaluate software programs and the subjects were all computer literate school teachers, and so on. In the field of special education, however, most software programs are simple and the computer skills of teachers have been

improving. The results of present study, consequently, will be of importance in increasing the use of computers in special education. Implications for further study are as follows:

- (1) Why net scoring time of "text + still image" was significantly shorter than that of "text + movie + captions"?
- (2) Is it appropriate to use "text + still image" for evaluating more complex software programs?
- (3) Is "text + movie + captions" still ineffective for novice (in computer use) teachers?

Key Words: Multimedia, presentation methods, evaluation study, DHTML, SAMI, Special Education

Issues Concerning the Protection of Personal Information and Use of Information in Special Education: An Evaluation of "Bulletins" of Special Education Centres Managed by Local Government

Masashi Hayasaka, Fumie Oshiba, Akira Watanabe,
Yutaka Katsuma, masahiro Watanabe and Hitoshi Nakamura
(Division of Research and Development, Information Center of Special Education)

This study examines problems related to the protection of personal information and its use in special education. The researchers investigated the research bulletins of three prefectural special education centres from the perspective of the protection of personal information. The findings are as follows:

1. The amount of descriptive material related to personal information in all three centres decreased following the enactment of protection ordinances relating to personal information.
2. The bulletin of one of the three centres did contain personal information even after the enactment of protection ordinances relating to personal information.

3. The terminology used in the articles relating to special education in the bulletin of one of the centres changed following further consideration of the protection of personal information after the enactment of protection ordinances relating to personal information.

The results are discussed from the perspective of the protection of personal information and the dissemination of useful information in special education.

Key Words: Protection of personal information, use of information, dissemination of information, prefectural special education centres, bulletins of prefectural special education centres, protection ordinances of personal information

Communication Methods of Children with Deaf-blindness: Classification and Systematization

Megue Nakazawa
(Department of Education for Children with Multiply Disabilities)

Deafblind children are a diverse population due to the combination of differences in the degree of visual and auditory impairment, the onset of impairment, the presence or absence of other disability and educational history. The communication methods used by this population are diverse as well. Selection of communication method(s) appropriate for individual children is one of the biggest issues faced by parents, teachers, speech therapists and other related personnel in raising or supporting a deafblind child. The selection should be well-grounded on the current capacity and needs of the child with a good perspective of future

transition in communication methods in accordance with the child's development.

In this paper, a framework developed from the theory of Hachizo Umezu (1978) and the author's work with deafblind children is presented to classify and systematize the many communication methods used by deafblind children. Classification is made from six different aspects and systematization is done on the basis of the genesis of sign system to point out the continuity in progression from one communication method to the next.

Key Words: Deafblindness, communication method, multiple disability, continuity, development

Review on the Self-Assessment of Hearing (Listening) for Hearing Impairment

Masayuki D. S. Sato

(Department of Education for Children with Speech and Hearing Handicap)

Self-assessment of hearing (listening) for hearing impairment is divided into self-assessment of hearing (listening) required for the fitting of hearing aids, and for analysis of handicap. The first self-assessment of hearing (listening) is based on the impression of hearing (listening) of the sounds amplified by the hearing aid and the satisfaction on its usage. The content of this assessment consists of three aspects:

1. Assessment of hearing (listening) in various environments (e.g., noisy-noiseless, face-to-face communication, group communication).
2. Understanding by persons involved with hearing impairment persons of the use of hearing aids by hearing aid users.
3. The psychology of hearing aid users.

On the other hand, the self-assessment of hearing (listening) for analysis of handicaps investigates the inconvenience and handicap arising from difficulty

experienced in hearing (listening). This assessment also consists of three aspects:

1. Behavior through hearing (listening).
2. The feeling of inconvenience through hearing (listening).
3. Awareness of handicap through hearing (listening).

However, most self-assessments have been designed for adults, especially senior adults with hearing impairment, and there has been little self-assessment for children with hearing impairment. In developing self-assessment of hearing (listening) for children with hearing impairment consideration should be given to the child's school life and the results should be relevant to understanding of their hearing aid and communication.

Key Words: Persons with hearing impairment, hearing (listening), self-assessment, hearing aid, handicap

Some Problematic Issues Concerning Relationship-theory' for the Studies of Communication Disorders

Yasumi Makino, Kanyu Matsumura

(Department of Education for Children with Speech and Hearing Handicap)

The purpose of the present review is to provide an overview of research in Japan on communication disorders based on "Relationship-theory" and to examine problems that confront researchers in this field. The research was classified into two types: 1) research on the relationship between a child and teacher/mother, and 2) research on the relationship between the child and objects in his/her immediate environment. Four significant issues emerged from this meta-analysis:

1. Construction of a methodology to improve communication disorders between the child and teacher.
2. Clarification of the concept of "Relationship" in research on communication disorders.

3. Consideration of the methodology of relationship investigation.
4. Consideration of a correlation of the concept of "relationship" with reliability.

In order to approach these problems, the following three strategies were proposed:

1. The utilization of discourse data of a child.
2. Observation of the relationship between the child and a teacher by a third person.
3. Description of the state of the child's speech and language.

Key Words: Communication disorders, communicative relationship, Relationship-theory, language acquisition

The Present Situation of Education for Children with Autism in Regular Classes

Yumiko Hirose, Yoshikuni Tojo

(Branch : Section of Education for Children with Autism)

Chiyoko Terayama

(Uekusa Gakuen Junior College)

In education for children with autism in Japan, individualized teaching has been thought to be important in special classes and the Tsukyu system for children with emotionally disturbance. While many children

spend much time in regular classes, the actual conditions of their learning environment is unclear. In addition, the nature of educational support required has not investigated. Therefore, questionnaires were distributed

to teachers of regular classes of elementary schools asking about the education of children with autism and the needs of their teachers. 54 responses were received. It was found that teachers have difficulty with the behaviour of these children as well as their ability to study, and that they want some assistance from an someone who can support the child individually. Further, it was found that as they have poor skills for daily life and communication, teachers ask normal children in the class for help. To cope with this reality it is suggested that a support system be established in the school and

that a teacher's manual for supporting children with autism be written. Furthermore, investigation of whether or not the curriculum in Tsukyu and special classes is useful in regular classes should be undertaken. The results also showed the importance of establishing a close relation among teachers of regular, special and Tsukyu classes for considering the validity of the purpose and the curriculum for these children.

Key Words: Autism, transactional programs, regular classes, needs of teachers, educational support

A Study of Educational Support for Children with Attention Deficit/ Hyperactivity Disorder (ADHD) and Similar Conditions

Kiyoji Koreeda, Munehisa Tamaki, Toshio Hanawa,
Yumiko Hirose*, Yoshikuni Tojo* and Yoshikata Atsumi
(Department of Education for Children with Emotional Disturbance)
(* Branch: Section of Education for Children with Autism)

In recent years there has been increasing emphasis on the educational support for children with Attention Deficit/ Hyperactivity Disorder (ADHD) and similar conditions in regular classes. The purpose of this study was to survey the educational support for those children with special educational needs in resource rooms designed for children with emotional disturbance. All 175 schools with this type of resource room in Japan were asked to participate in the survey and resource room teachers at these schools were asked to complete a questionnaire. The findings were as follows. Of a total of 335 subjects considered in the present study, 202 were diagnosed by resource room teachers as having ADHD, a further 120 as possible ADHD, and the remainder unknown. 16.8% of children diagnosed as ADHD were in elementary school resource rooms and 4.7% were in resource room located in secondary schools. These reported percentages were approximately twice those of a comparable 1997 survey (8.7% in elementary schools and 2.1% in secondary schools). 90% of subjects were male, and 20% of those clinically diagnosed as ADHD had co-morbid diagnosis and 33% had a learning disorder. 34% of children with ADHD and similar

conditions were on medication, 59% of this group being on methylphenidate (Ritalin). Symptoms listed on DSM-IV criteria for ADHD were ranked into four degrees and individual children were ranked by teachers using this checklist into three symptom categories: 1) Attention-deficit, 2) Hyperactivity, and 3) Impulsivity. It was found that the prevalence of hyperactivity was higher than the other two categories, and that the prevalence of hyperactivity and impulsivity decreased with age. The curriculum for children with ADHD and similar conditions was also addressed in the questionnaire. It was found that greater emphasis was placed on "Educational therapeutic activities" than academic subjects. Many of these activities were related to the development of well-balanced emotions and smooth interpersonal relationships. In addition, results from the free description segment of the questionnaire revealed the variety of individualized teaching of children with ADHD and similar conditions taking place in resource rooms for children with emotional disturbance.

Key Words: Attention Deficit/ Hyperactivity Disorders (ADHD), resource room, questionnaire, educational support, curriculum

Trends In the Use of Computers and the Internet in Special Schools in Japan

Hitoshi Nakamura, Yasuhira Komago,
Testuya Munetaka, and Nariki Osugi
(Department of Educational Technology)

The purpose of this study was to determine trends in the use of computers and the Internet in special schools in Japan. The researchers reviewed six research papers, two official survey reports, and a brief report on educational use of computers and the Internet published

in 2000. This was a simple summary paper, and our discussions and conclusions in the present study were mainly based on comprehensive results and unpublished data of the survey in March 1999. Findings in this report were based on questionnaires distributed to 983 special

schools (viz. 71 schools for the blind, 107 schools for the deaf, 514 schools for the intellectually disabled, 195 schools for the physically disabled, and 96 schools for the health impaired. 797 schools or 81.1% of all special schools responded to the questionnaire. It was found that the number of schools with computers has been increasing (i.e. from 96.9% in 1997 to 98.1% in 1999). In 1999 the mean number of computers in a school increased to 12.2 from ?. Further major findings from the 1999 survey were as follows: 87 schools have experience of CAI (Computer Assisted Instruction), mainly in academic subjects (viz. Japanese, arithmetic / mathematics and so on), 39 % of schools are connected to the Internet and use it mainly for teaching and learning, and 58 % of connected schools have a Homepage or Web pages mainly providing profile

information such as school history, address and so on. On the one hand, while the number of teachers who considered themselves equipped to make original software programs decreased by 2 %, on the other hand, computer literacy among teachers increased accounting for almost one half of all special school teachers. Despite the above findings, many schools had problems due to the rapidity of the spread of computer technology. These difficulties included lack of budget for necessary software and hardware, and an increase in the management load of personnel responsible for school use of the Internet.

Key Words: Computer, Internet, teaching method, research survey, Special Education

The New Information Network and Computer System of the National Institute of Special Education: Current Status and Problems

Yutaka Katsuma, Masahiro Watanabe, Akira Watanabe,
Masashi Hayasaka and Hitoshi Nakamura

(Division of Research and Development, Information Center of Special Education)

A new computer system and LAN were introduced at the National Institute of Special education (NISE) in December 1999. The updated system was designed to achieve an easy-to-use information environment for the user. To determine the effectiveness of the new system, the number of e-mails and the number of hits of the NISE homepage were examined. In addition, the frequency of e-mails on a specific day of the week as well as time slot during the day were tabulated. It was

found that the use of e-mail had increased fourfold since the introduction of the new system and that the NISE home page was accessed approximately 4000 times on any day of the week. Moreover, this paper discusses management implications for the computer system and LAN of design changes introduced since December 1999 as well as functions that were not incorporated into the new system.

On the Construction of a Database Based on XML at the National Institute of Special Education

Masahiro Watanabe, Yutaka Katsuma, Akira Watanabe,
Masashi Hayasaka, and Hitoshi Nakamura

(Division of Research and Development, Information Center of Special Education)

The National Institute of Special Education (NISE) has made a Web page, which presents various information related to special education. Until now, the Web page has been written generally in the language called HTML (Hyper Text Markup Language). In this case, the Web page had to be modified by hand. However, the situation will be quite different with the introduction of XML (Extensible Markup Language), which is attracting growing attention as the base technology to support Web pages into the next generation. If XML is used as the language to write Web pages, it's

modification will be done automatically in connection with the renewal of the database. Web pages scripted in XML will be able to be easily linked with a database, then the system in which the Web page always refers to, cooperate and is updated with a database can be built effectively by using XML. In this paper, the advantage of introducing XML to NISE for the construction of a new database affinitive Web page system.

Key Words: Digital document, database, WWW, XML, PDF

Current Special Education in Britain: Deaf-blind Education and Staff Development

Hiroyuki Sugai

(Department of Education for Children with Multiple Disabilities)

This article provides an overview of the current state of educational reform as it affects special needs education in the United Kingdom and focuses on the uniqueness of deafblind/multisensory impairment education. The central government in the UK introduced the market principle to schools with the aim of improving educational outcomes. Recent policy has focused on curricular reform of academic subjects. In the field of the education of children with special needs, there has been dramatic changes in educational policy and practice since the concept of "Special Educational Needs (SEN)" was introduced in the 1981 Education Act. This relatively new concept stressed that the content of services provided should be directly based on the child's special educational needs. On the one hand while many students with SEN were able to access mainstream schooling, on the other they faced new difficulties in their learning environment, especially those children with severe learning difficulties and/or complex needs. This paper suggests that at present there are insufficient resources in mainstream schools in Britain to provide for children who have specific and complex needs. Recently there has been debate on the uniqueness of the condition known as deafblindness as part of the current debate on the education of children with complex needs. The outcome of this debate is that the importance of professional educational treatment has been recognized

once again. This finding was based on a government report that showed that many staff who work with pupils who are deafblind use specific and wide-ranging strategies and that they should have a thorough understanding and knowledge of the condition. The central government has established guidelines for meeting these standards of expertise and information about the uniqueness of deafblindness. However, many staff still have concerns that the needs of children with deafblindness or multisensory impairments will become lost in mainstream settings. Most teachers in regular classes do not have expertise in this field, so the issue of staff development has become increasingly important. This overview of recent educational trends, including the provision of deafblind education in Britain suggest that more professional expertise in more inclusive educational settings is required, the importance of individual needs as a catalyst for educational intervention, and for a greater emphasis on a multi/interdisciplinary approach. In Japan, it is suggested that the uniqueness of education for children who are deafblind should be stressed and that expertise should be developed through a system of inservice training of teachers.

Key Words: Deafblind, multi-sensory impaired, special educational needs, special education in Britain, expertise

Literacy in Japanese Deaf Education: hanging Concepts and Methods

ODA Yoshiaki

(Department of Children With Hearing and Speech Handicaps)

The development of Literacy in deaf children has always been a major objective of the education of the deaf. However, since the education of the deaf began, the concept and methodology of educational intervention for deaf children's literacy has changed the teaching of literacy instruction by the manual method has shifted towards a highly designed letter-based teaching methodology using the pure oral method.

Following this various modalities of Japanese code for developing children's literacy have been used. The current shift in emphasis, however, is to bilingual approach for literacy development. And also new changes are happening in a global context of rapid development of information technology that may have an influence on the concept of literacy itself. In this paper a functional framework of intervention for deaf children's literacy is proposed.

Characteristics of Academic Failure in Children with Learning Disabilities: A Comparative Study

KAIZU Akiko

(Department of Education for Children with Health Impairments)

This study examines the characteristics of academic failure in children with LD. Initially a Learning Disabilities Screening Checklist (LDSC) to profile the academic skills of children with LD was constructed. Based on the definition of LD proposed by the Ministry of Education, Culture, Sports and Science (MEXT, 1999), the LDSC consists of six academic areas: listening, speaking, reading, writing, mathematical calculation and mathematical reasoning. Each area consists of 20-24 items. The 134 items of the LDSC were chosen based on previous research on factors contributing to academic failure in children with LD by Kaizu (1997, 2000). The experimental group of children with LD (n = 124) and the control group (n = 304) were assessed using the LDSC and were compared by age level (7-9 years and 10-12 years). The items of academic failure were classified from the means of academic failure scores and from items showing significant difference between the LD and control groups. From this analysis, the characteristics of academic failure in children with LD were clarified because it

examined not only significant difference between the groups, but also the degree of academic failure by age level. It was found that in some types of academic failure, the means of scores were significantly different between the LD group and the control group in lower grades, but not in upper grades. We interpret this to mean that children with LD slowly, but steadily acquire academic skills in certain areas. On the other hand, academic failure was observed in which there was a significant difference between the two groups in both age levels. We suggest that this is probably closely related to the cognitive characteristics of children with LD and that this kind of academic failure is associated with the difficulty in acquiring of specific academic skills even if the child is engaged in learning. This study provides a comprehensive understanding of academic failure in children with LD by age level and has implications for teaching goals and methodology.

Key Words: Learning disabilities, academic failure, academic assessment, checklist, comparative study

Development and Use of New-type Push Switches using Strain Gauge Technology for the Education of Children with Severe and Multiple Disabilities

MUNEKATA Tetsuya, MIFUNE Shunsuke* and NAKAMURA Hitoshi

(Department of Educational and Information Technology)

(* Kaike Protective Care School for Physically Handicapped Children, Tottori Prefecture)

This paper reports on the development of new type of push-switch system for children with limb paralysis and visual disability based on strain gauge technology. The system provides real time audio feedback in response to even fine motor movement. A case study of the functioning of the new system and analysis of results suggest that the system is effective. The first system developed was relatively expensive because of the system configuration. A second version, however, using

a micro-controller, a 12 bits A/D converter, an amplifier circuit, 4 strain gauges, and a power supply unit, provides comparable functioning at 1/30th of the original cost. Consequently, the updated version is easier to implement and set-up in classrooms. Results of the case studies and future issues are also discussed.

Key Words: Special education, children with severe and multiple disability, strain gauge, A/D converter, micro-controller, educational technology

"Period of Integrated Study" by Collaboration of Teachers in Tsukyu and Teachers in Ordinary Classrooms

KUBOYAMA Shigeki and TOYOTA Hiromi*

(Department of Education for Children with Speech and Hearing Handicap)

(*Tsurukawa-Daisan Elementary School, Machida)

This Case Study reports on the progress in gaining greater understanding of the feelings of individuals with handicapping conditions to improve collaboration. The study was conducted during periods of "Integrated Study," in ordinary classrooms of elementary schools

and highlights the importance of teachers in Tsukyu (resource room) and in ordinary classes collaborating in the education of children attached to Tsukyu. This is because these children spend the greater part of their school lives in ordinary classrooms. The researchers and

teachers in ordinary classes collaborated in the sessions. In the sessions entitled "Yasashisa tte nandarona? (How do you think about tenderness?)" it was found that students from first to sixth grade experience continual

inconvenience and report this experience. The aim of the sessions is that every child gains an awareness of the feelings of individuals with handicap and is motivated to engage in support activity for them.

Educational Treatment by use of Picture Books for Blind Children: A Case Study

KANEKO Takeshi

(Department of Education for Children with Visual Impairments)

Picture books for blind children include pictures made with tactile materials to enhance understanding, but occasionally these books have pictures, which cannot be understood tactually by blind children. The purpose of this study was to make valid and interesting picture books for blind children using pictures that could be understood tactually and, by use of these books, to enhance the development of blind children and their learning. Examples of this are improvement in tactile perception, tactile imagery and imagination on pictures and stories, the learning of Braille, and so on. These aspects were investigated in a Case Study using picture

books of a blind girl aged 3-6 years. It was found that, 1) tactile perception generally improved and "searching" and "tracing" tactile perception improved, 2) the child enhanced the stories using gestures and by modeling the characters in the picture books (tactile imagery and imagination were enhanced), and 3) she became interested in the Braille used in the picture books and this improved the efficiency of her learning of Braille.

Key Words: Picture books for blind children, tactile perception, imagery, imagination, Braille

Acquisition of the Skills of Reading and Writing Yoon Scripts in Children with Reading Difficulties

SATO Katsutoshi

(Department of Education for Children with Intellectual Disabilities)

MORITA Haruhito

(Child Guidance Centre, Saitama Prefecture)

MAEKAWA Hisao

(Institute of Special Education, University of Tsukuba)

The purpose of this Case Study was to investigate the appropriate training strategy and problems of reading and writing in a child with reading difficulties. According to psychological assessment, the child showed weakness in successive processing and language development. Before he participated in the training programmes, he read Yoon with two syllables. Word completion tasks were used in his training. Word cards with blank characters of Yoon syllables and character pieces with Yoon syllables were prepared. In these word

completion tasks, the child had to select the right character from three pieces. As a result of this training programme, he became able to read many Yoon syllables with or without training stimuli and to select all the correct pieces in the word completion tasks. But he could write few Yoon syllables in the generalization stimuli. Results are discussed from the perspective of phonological processing and auditory discrimination processing.

Questionnaire Survey on Session for Understanding Hearing Handicap in Primary School.

SATO D.S. Masayuki

(Department of Education for Children with Speech and Hearing Handicaps)

The aim of this paper is to clarify details of a questionnaire survey conducted on session for understanding hearing handicap. Questionnaire items focused on the difficulty of sessions for understanding hearing handicap, the individual understanding of

children with hearing handicap and so on. The subject of this questionnaire survey concerns teachers of schools for the deaf, special units for hearing handicap in primary schools with experience in session for

understanding hearing handicap in a class of primary school.

The main findings are as follows:

1. It is difficult to present knowledge on hearing(listening) and communication concerning hearing handicap with appropriate terms, because children with hearing handicap carry various personal conditions .
2. On the individual understanding hearing handicap, it shows how hearing children should communicate with children with hearing handicap on individual cases and that children with hearing handicap participates on

construction of session for understanding hearing handicap.

These finding suggest that we should consider the how in communication with children with hearing handicap and the listening (hearing) through their hearing aid concretely concerning the development of teaching materials for understanding hearing handicap.

Key words: children with hearing handicap, understanding hearing handicap, hearing aid, primary school

Educational Practice of Computer Literacy and Information Education in Special Schools

WATANABE Akira, OSUGI Nariki, NAKAMURA Hitoshi
(Department of Educational and Information Technology)

In this study 255 examples of teaching in the area of Joho kyouiku (computer literacy and information education) in special schools were analyzed. The analyses were conducted from the following perspectives: 1) type of disability, 2) educational subject, 3) educational content, 4) educational methodology and, 5) educational outcomes. Interpretation of results, current states of educational practice of computer

literacy and information education in special schools was discussed. Finally, efforts to improve the teaching of computer literacy and information education to meet the educational needs of children with disabilities are presented.

Key Words: Computer literacy, information education, special schools, educational practice

Inservice Training for Special Education Teachers to Improve Computer Literacy : A Survey of Education Centers in Urban and Rural Prefectures

NAKAMURA Hitoshi, MUNEKATA Tetsuya,
OSUGI Nariki, and KOMAGO Yasuhira *
(Department of Educational and Information Technology)
(*Kansai International University)

Education Centers, including Special Education Centers in urban and rural prefectures are central bodies in the provision of in-service teacher training courses. This paper reviews the findings of a questionnaire survey of training courses for computer literacy and school support systems of 11 Special Education Centers and 48 Education Centers in urban and rural prefectures and major cities designated by government ordinance. All the organisations approached to participate were respondents. The main findings were that nine Special Education Centers (i.e. 82%), and 21 Education Centers (i.e. 44%) provide in-service teacher training on computer literacy for special education teachers. The remaining two Special Education Centers provided alternative arrangements. 47 of the total of 48 Education Centers provide in-service training courses accessible to special education teachers, and one center reported alternative provision. These findings suggest there is adequate in-

service training in computer literacy for special education teachers in all prefectures and major cities in Japan. In terms of supporting Kohnai Kenshu (peer professional development programs in schools), 50% of Education Centers replied that they have the capacity to send personnel to school on request. Concerning responding to request concerning the use of the Internet in schools, in the majority of cases Special Education and Education Centers provide assistance via electronic mail, telephone, facsimile, and so on. This finding also suggests that the centers provide flexible and wide ranging services, not only for schools, but also for parents and other relevant organizations.

Key Words: In-service Training, Computer Literacy, Special Education Centers, Information Literacy, Kohnai Kenshu [Peer Professional Development Programs]

Health Education and Health Management of Children with Profound and Multiple Disabilities who need Special Health Care in Special Schools

KAWASUMI Ryuichi, ISHIKAWA Masataka and GOKAMI Tetsuo
(Department of Education for Children with Multiple Disabilities)

This paper provides an overview of a nationwide survey conducted in 2000 of children with profound and multiple disabilities in need of special health care. Special health care is defined as the provision of services such as sputum suction, tube feeding and so on. Analysis was made of 1,135 responses to one survey item concerned with the educational plan and provision made for health maintenance of these children. Responses were categorized as follows: 1) Health observation and provision made for the child's physical

condition, 2) health education and, 3) health management. In the first category, various health indices, including vital signs, were extracted and some suggestions made. Nine types of direct approach were observed in Category (2), and nine necessary conditions were found in Category (3).

Key Words: Special health care, health observation, health education, health management, profound and multiple disabilities

Current Situation of Education for Children with Autism in Regular Classes II: Features of Individual Children and Teacher Needs

HIROSE Yumiko and TOJO Yoshikuni
(Branch: Section of Education for Children with Autism)

In the report "New Perspectives of Special Education in the 21st Century" (Ministry of Education, Culture, Sports, Science and Technology, 2001), it is suggested there is a need for positive special education support for children with mild handicapping conditions enrolled in regular classes in elementary and junior high schools. To investigate this issue, questionnaires were circulated to teachers of children with autism in regular classes in elementary schools. There were 184 respondents. In addition, the survey included not only children enrolled in regular classes, but also those in special classes and in interaction programmes. Analysis was based on data categorized according to the achievement levels obtained achieving children with autism need more in-service training and a teaching manual on the education of children with autism. 5) Teachers manage to teach children with autism relying on their own devices and initiative. 6) Teachers are most concerned about the lack of daily living skills in the low achieving group. 7) Teachers are concerned about behavioural problems regardless of achievement level, and teachers need inservice training and a teaching manual for the

by children with autism, and the following factors; degree of disorder, behavioral problems, educational tasks in the curriculum, teacher concerns about children during and after class, teacher support needs and types of child support presently provided. The findings were as follows: 1) Teachers are most concerned about the difficulty of classroom learning in low achievers. 2) Teachers are concerned about behavioral problems in class regardless of achievement level. 3) Teachers of low achieving children with autism are in need of a support professional familiar with autism and able to make teaching materials. 4) Teachers of high education of children with autism regardless of their achievement level. It is suggested that to cope with the current situation, greater effort should be directed towards, 1) assessing children who use Tsukyu classes to better understand the criteria used in the interview process for entrance, 2) in-service training for the education of autistic children in regular classes and, 3) improving the quality of education of children with autism in Tsukyu and special classes.

Children with Attention Deficit/ Hyperactivity Disorder: A Survey of All Primary and Secondary Schools in a Rural City

HANAWA Toshio, BABA Hiroo*, ATSUMI Yoshikata,
OHSHIBA Fumie, KOREEDA Kiyoji, TAMAKI Munehisa
(Department of Education for Children with Emotional Disturbance)
(* Classroom of Nagano Prefectural Hanada Special School in Suwako-Kenkougakuen)

The report "New Perspectives of Special Education in the 21st Century," (Ministry of Education, Culture, Sports, Science and Technology, 2001), emphasizes that

in the future children with attention deficit/hyperactivity disorder (ADHD) should be educated with appropriate educational support. To develop appropriate methods for

educational support for children with ADHD a basic requirement is understanding the needs of these children in schools. To address this requirement, a survey of all schools (primary and secondary) in a city located in a rural region was conducted. It was found that the prevalence of suspected ADHD, including not only official diagnosis, was 0.57%, but with medical diagnosis it was only 0.26%. The prevalence ratio was highest at the 4th grade level of the primary school. Of 43 children diagnosed with ADHD in primary schools,

28 were in regular classrooms and 15 in special classes. While children with signs of ADHD had a variety of educational problems, it was found that teachers were attempting to meet their needs with resourcefulness and creativity.

Key Words: Attention Deficit/ Hyperactivity Disorder (ADHD), survey, regular class, educational support, questionnaire

Study of Information Retrieval System for Web Pages in Special Education

KATSUMA Yutaka and OSUGI Nariki

(Department of Educational and Information Technology)

At Division of Research and Development, Information Center of Special Education, the National Institute of Special Education, the authors had been making the "Web page link list" for various organizations related to Special Education, and opened up to Internet. This link list has been fortunately used by a lot of users.

The web link list has the weak point that necessary information is not searchable at once while it is intuitive

and comprehensible. In this research, we planned to reorganize and expand it, and to integrate the directory type interface and the search engine into the link list.

As a result, the user came to be able to collect easily information more than with the past one.

key word: information retrieval, search engine, index, link list, Web page

Special Supportive Education for Children with High-Functioning Autism and Asperger's Syndrome from the Perspective of Specificity in Approach-Avoidance Judgments in Brain Functioning

TOJO Yoshikuni

(Branch : Section of Education for Children with Autism)

In this paper, the nature of special supportive education for children with autistic spectrum, such as high-functioning autism and Asperger's syndrome, is discussed from the perspective of specificity in approach-avoidance judgments (especially the predominance of avoidance judgments) in brain functioning. Attitudes to support based on the individual needs of each child are considered. The paper initially reviews previous research on brain function, social competence, heredity and environment, the beginnings of the problem with autistic spectrum, and the formative process of various typical symptoms of autism. Together with the assumption of biological disorder in the limbic system (in particular the amygdala), it is proposed that the high probability of typical symptoms of autism (such as "qualitative impairment in social interaction," "communication

difficulty," "restricted, repetitive and stereotyped patterns of behavior, interests and activities," "lack of attachment," "theory of mind deficit," and "strong feelings of fear and insecurity") stems from specificity in approach-avoidance judgments. In addition, based on reports of people with high-functioning autism and Asperger's syndrome, the type of support designed to meet individual needs is discussed. It is suggested that the basic attitude to children with autistic spectrum lies in inhibition of the formative process of various symptoms by the elicitation of approach judgments to people and objects that reduce fear and insecurity. Finally the theoretical foundation of supportive education is discussed.

Key Words: autism, supportive education, individual needs, approach-avoidance judgment, amygdale

International Exchange Activities 2000-2001

Hitoshi Hara[#]

Director of International Exchange Division, NISE

1. International cooperation and exchange

A large number of international academic exchanges were conducted in the 2000-2001 period, including overseas visits by NISE staff to institutions with which the National Institute of Special Education (NISE) has

formal exchange agreements, overseas research fellowships, participation in international conferences, grants-in-aid for scientific research, and visits by overseas academics and administrators. The details of these exchanges are outlined in Tables 1 and 2.

Table 1 NISE Staff Traveling Overseas

	1973-1997	1998	1999	2000	2001
Overseas Research Fellowships	59(2.4)#	3	2	2	1
Fellowships For attendance at International Conferences	15(0.6)	0	1	4	1
Grants-in-Aid for Scientific Research	62(2.5)	25	14	22	24
Others	30(1.2)	5	7	4	15
Total	166(6.6)	33	24	32	45

Parenthesis indicates average figures

The number of NISE staff dispatched to overseas institutions on Japanese government-sponsored short- or long-term research fellowships averaged between two and three each year until 1999, and so there was little change in the 2000-2001 period. Likewise, the number of staff visiting overseas to attend international conferences remained steady. On the other hand, there was a dramatic increase in the number of staff visiting overseas under the grants-in-aid for scientific research program. This was a result of changes introduced in 1998 making it easier for staff to make use of the grants-in-aid scheme. Since these changes were introduced, between 10 and 20

staff have visited overseas under the scheme each year. "Others" includes visiting overseas for the purposes of conducting research commissioned by the Ministry of Education, Culture, Sports, Science and Technology, and visits carried out under the international exchange agreement with the Korea Institute for Special Education (KISE).

The number of overseas academics and administrators invited to Japan to take part in APEID Seminars on Special Education totaled 12 in 2000 and 14 in 2001. "Overseas Visitors" includes the total number of participants in study tours to Japan.

Table 2: Visits to Japan by Overseas Academics/Administrators

	1973-1997	1998	1999	2000	2001
Invited Gests *	273	18	29	15	17
Overseas Visitors	(-)	47	73	69	37

* including APEID Seminar participants

2. International seminars

The APEID Seminars have been hosted by NISE and the Japanese National Commission for UNESCO since 1981. The 21st and final APEID Seminar, the last of the 6th programming cycle, was held in 2001. It is hoped that the philosophy behind the APEID Seminars, which is to contribute to the development of special education in the Asia-Pacific region and the improvement of education in the participating countries, will be carried over into a new round of international seminars on special education in the Asia-Pacific region.

1) APEID Seminar on Special Education 2000

Schedule: November 7-10, 2000

Venue: NISE

Main theme of the 6th cycle: Special Education Partnerships in the 21st Century Sub-theme of the 20th APEID Seminar: Strengthening and Encouraging School Development

2) APEID Seminar on Special Education 2001 and 30th anniversary of the founding of the National Institute of Special Education as an independently administered agency

Schedule: November 18-23, 2001

Venue: National Olympics Memorial Youth Center (Tokyo)

Main theme of the 6th cycle: (See above)

Sub-theme of the 21st APEID Seminar: Development and International Cooperation in Special Education in the Asia-Pacific Region

To mark the 30th anniversary of the founding of NISE, on the first day of the seminar, Professor Yoshitatsu Nakano of Sano International Information Junior College gave a lecture entitled "Lifelong Learning in the 21st Century for Children with Special Education Needs." That afternoon, the guests invited for the APEID Seminar on Special Education joined in a panel discussion entitled "International Cooperation in Special Education in the 21st Century - Towards Realizing the Doctrine of Normalization."

3) The 1st Japan-Korea Research Exchange Seminar

In accordance with the research exchange agreement between NISE and the Korea Institute for Special

It was agreed that NISE would continue to promote exchanges (including exchanges of research materials,

Education (KISE), the 1st Japan-Korea Research Exchange Seminar was held at the NISE offices on February 21, 2001. Three members of KISE were invited to take part in the seminar. The main theme of the seminar was "The Current Status and Future Trends of Special Education in Japan and Korea." After being briefed on the special education systems in the two countries, participants exchanged opinions on the seminar's main theme.

Dr. Lee You-hoon and Dr. Chung Dong-young gave addresses on behalf of KISE.

The following five speakers (in order of appearance) gave addresses on behalf of NISE: Senior Researcher Hiroyuki Sugai, Senior Researcher Nariki Osugi, Senior Researcher Mayumi Sawada, Section Chief Masayoshi Tsuge, and Senior Researcher Masashi Hayasaka.

4) The 2nd Korea-Japan Research Exchange Seminar

The 2nd Korea-Japan Research Exchange Seminar was held at the KISE offices on February 26, 2002. The main theme of the seminar was "The Current State of Special Education Communication in Korea and Japan and Issues for the Future." Three NISE representatives were invited to give addresses at the seminar.

Representing NISE were (in order of appearance) Researcher Akiko Kaizu, Section

Chief Megue Nakazawa, and Senior Researcher Nariki Osugi.

5) The 1st Japan-Germany Research Exchange Seminar

Dr. Walther Dreher, Dean of the Faculty of Remedial Education at the University of Cologne, and Dr. Barbara Fornfield, a professor at the same faculty, were invited to take part in the 1st Japan-Germany Research Exchange Seminar, held from February 26 to 28, 2002. The main theme of the seminar was "Independence and School Education for Children with Severe Disabilities - Study Support and Inclusion for Children with Severe Communication Disabilities." In addition to the two speakers mentioned above and Tetsuya Kono, Associate Professor at the National Defense Academy (who was invited to take part by the executive committee), Section Chief Susumu Ouchi, Department Director Ken Sasamoto, and Senior Researcher Masataka Ishikawa spoke on the main theme on behalf of NISE. publications, and other information, exchanged of researchers, joint research, seminars, and study

meetings) with the Faculty of Remedial Education at the University of Cologne, Germany, in accordance with a formal exchange agreement between the two institutions.

3. Overseas information gathering and accumulation

1) Research into the teaching of children with special learning needs in major overseas countries

Research on this topic was conducted from March 1999 by a team led by Kouki Chida, Director of the Department of Education for Children with Visual Impairments, with the help of a grant-in-aid for scientific research from the Ministry of Education, Culture, Sports, Science and Technology. The research was carried out in five major countries: the U.K., France, Germany, Italy, and the U.S.A. A final report was prepared in 2002 and distributed to the relevant organizations.

2) Commissioned research on lifelong learning for people with disabilities (Leader: Chikamori Oshio, Director of the Department of Education for Children with Intellectual Disabilities)

Research on this topic covered basic issues relating to lifelong learning for people with disabilities in Japan and incorporated research in four overseas countries (the U.K., Italy, Norway, and the U.S.A.) that are considered leaders in the area of lifelong learning for people with disabilities

3) Publication of Volumes 15 and 16 of Special Education in the World

Special Education in the World is published once a year by NISE. The contents include reports on research carried out with the help of grants-in-aid for scientific research, reports by overseas research fellows, summaries of APEID Seminars on Special Education, and reports on international conferences and seminars in which NISE staff participated, as well as related research materials. Volumes 15 (2000) and 16 (2001) were published.

4. Information disseminated overseas

Volume 6 of the NISE English-language bulletin (Volume 7 is currently being prepared for publication), reports on the 20th and 21st APEID Seminars, and APEID newsletters (Nos. 15-18) were published.

The present office, Director-General, Yokohama City Central Area Habilitation Center for Children

SUPPLEMENTS

APEID Seminar on Special Education

NISE has been hosting APEID "Asia and the Pacific Programme of Educational Innovation for Development" Special Education Seminar with attendance of professionals (administrators, researchers and teachers etc.) from Asia and Pacific regional nations with cooperation of Japanese National Commission for

UNESCO. The seminar is held once in a year as an undertaking of ODA project. The seminar aims at strengthening educational cooperation among member nations of UNESCO in the Asia and Pacific region as well as fostering the intrinsic development of education within the member nations.

Special Education Partnership for 21st Century -Strengthening and Encouraging School Development-

OSHIRO Eimei

(The National Institute of Special Education)

The 20th APEID Regional Seminar on Special Education was held at the National Institute of Special Education, Yokosuka City, Kanagawa Prefecture, Japan from November 6 until November 11, 2000.

1. Theme of the Seminar

We started the 6th programming (1997-2001) cycle of the APEID seminar on special education in 1997. The common theme running through this five year's programme is "Special Education Partnership for 21st Century". The theme of this year's seminar was "Strengthening and Encouraging School Development"

2. Objectives and Contents of the seminar

The objective of the seminar was to discuss various issues to be improved in each country with a focus on the issues for Strengthening and encouraging school development in education for children with special education needs. In particular, we had focused on efforts in respective countries toward the goals of education for all based on the idea of Normalization, to development which could meet individual educational needs with disabilities and support their independence and social participation.

In the seminar, twelve country reports were presented by delegates in each member countries. The seminar gave participants an occasion to enrich and strengthen their activities through the exchange of information regarding the state-of-the-art of school development in their countries and also highlighted the future prospects.

The following points were discussed in the seminar.

- 1) The importance of increasing awareness of education for children with disabilities among teachers, parents and other people in the community, and the relation

between enhancing in the understanding of children with disabilities and school education.

- 2) The need for curriculum plans, teaching materials, teachers training and improving teaching skills to be implemented in education for children with disabilities.
- 3) Support plans for teachers and parents and school development through collaboration with various resources in the community which would lead schools to maintain and improve their functions.
- 4) Concerned authorities and school principals' leadership role is crucial to the achievement of inclusive schools.

3. Organizers

The Japanese National Commission for UNESCO (JNCU) and The National Institute of Special Education (NISE)

4. Date and Venue

Date: November 6-11, 2000

Venue: National Institute of Special Education (NISE) and related sites.

Schedule of the seminar:

- 6th (Mon.) Registration and Orientation
- 7th (Tue.) Opening Ceremony / Presentation of Country Reports & Discussion
- 8th (Wed.) Presentation of Country Reports / Short tour to NKSCD and General Discussion
- 9th (Thu.) Field Tour of Kamakura City Municipal ONARI Elementary School
- 10th (Fri.) Final Discussion / Closing Ceremony
- 11th (Sat.) Leave Japan

5. Participants

Representatives from twelve countries and from UNESCO / PROAP Associate Expert as listed in the following page, participated at the seminar. Mr. Teruzo YAMASHITA, Director, Dept. of children with Intellectual Disabilities of NISE, represented Japan.

Participants of the 20th APEID Seminar

Bangladesh: Md. Katebur Rahman

Joint Secretary, Ministry of Social Welfare,
Government of the People's Republic of
BANGLADESH

China: Yu Xia

Associate Research Fellow, Beijing Academy of
Education Sciences.

India: Dr. Uma TULI

Founder and Managing Secretary, Amar Jyoti
Charitable Trust, Rehabilitation & Research Center.

Indonesia: Rosyid Rosihan

Head of Sub-Directorate of Special Education,
Directorate of Primary Education, Directorate-General
of Primary and Secondary Education, Department of
National Education.

Maklaysia: Ahamad Zzabidi bin SHANSUDDIN

Director, Planning and research Division, Special
Education Department, Ministry of Education
Malaysia.

Nepal: Arum Kumar TIWARI

Section Officer, Special Education Section,
Department of Education HNG Nepal.

New Zealand: Kathleen DOOLEY

Principal of Mt Richmond Special School.

Pakistan: Rafiq Ahmed MALIK

Director / Principal, National Special Education
Center for Hearing Impaired Children.

Philippines: MA. Dhita I. SINGAYAN

Senior Education Program Specialist, Bureau of
Elementary Education, Culture and Sports.

Republic of Korea: Dr. Joo Young KIM

Educational Researcher, Korea Institute for Special
Education.

Thailand: Dr. Benja CHONLATANON

Director / Rajabhat, Special Education Center Faculty
of Education.

UNESCO / PROAP: TAKAHASHI Yuka

Associate Expert in Special Needs Education.

6. Conclusions and Recommendations in the seminar

The seminar participants included 12 delegates from different countries in the Asian Pacific region, the UNESCO representative, observers from Japan. The delegates representing each country spoke about the stage that their respective countries had reached in

working towards the common goal of "Education for All". They shared information about the issues for their own countries in realizing the challenges of education which meets individual educational needs with disabilities, and reflected upon future development and ways in which their own country may make further progress toward this goal.

Conclusions reached during the discussions centered around the following themes:

1. The importance of increasing awareness of education for children with special needs among teachers, parents, and other people in the community, and the relation between enhancing the understanding of children with disabilities, and school education.
 - All student teachers should have pre-service training opportunities in education of children with special needs.
 - Parent and community awareness of the possibilities of inclusion should be raised.
 - School administrators and teachers should have in-service training opportunities to learn more about children with special needs and their special education needs.
2. The need for curriculum plans, teaching methods and teaching materials, teacher training and the improvement of teaching skills to be implemented in education for children with special needs.
 - All countries in the region would benefit from sharing curriculum plans, teaching methods and strategies teaching materials.
 - Teachers and other staff working in schools should have opportunities for further specific training in teaching skills and strategies.
3. There should be support for plans for teachers and parents and school development through collaboration with various resources in the community which would lead schools to maintain and improve their functions.
 - Existing special schools, units and similar resource centers can change their roles to further support inclusion using their roles to further support inclusion using their expertise.
 - Parents of both disabled and non-disabled children and other community members should be encouraged to be involved in supporting inclusion in their local schools.
 - Schools should make full utilization of community resources in developing their programmes.
4. Concerned authorities and the school principals' leadership role is crucial to the achievement of inclusive schools.

- Concerned authorities and school principals must be made aware of their countries' national legislation and policies on education for all and integrated education.
- Concerned authorities and school principals must be knowledgeable about the educational needs of children with special needs and have the ability to create favorable school environments for integrated education.

Recommendations

In the light of the above conclusions the conference recommends that:

1. In all regular pre-service teacher training there should be sufficient theoretical overview of special needs followed by overview and practical teaching experiences in a special needs classroom situation.
2. Local education authorities and schools should have action plans for increasing awareness amongst their communities by using varieties of strategies such as media campaigns, workshops and meetings, special events, visits to schools and special education centers, and publicizing of successful cases of school development which meets individual educational needs of individuals with special needs.
3. Principals and teachers should have regular in-service training including observation visit to special facilities and integrated schools within and outside their own countries and specific training in teaching skills and strategies.
4. UNESCO could consider collaboration with another agency to establish an Asian Pacific resource web-site for the sharing and dissemination of curriculum guidelines, teaching methods and materials, assistive technology information and software and general information relating to disabilities and special education. Government should be assisting their practitioners to develop supports for special needs education, research a good practice.
5. Special Schools should be funded to expand their roles as Resource Centers to provide support services to mainstreamed special needs students, their teachers and other school personnel.
6. School Principals should inform the parents (of both disabled and non-disabled children) of their programmes for inclusion at least twice a year.
7. All children with special needs, and their parents should be provided from birth with early intervention services led by the Ministry of Education, Special Education Ministries and other concerned ministries such as Social Welfare, Health, and Labor etc.
8. Schools should invite members of their communities to be involved in school decision-making and volunteer activities. This could include local artists grandparents, professionals and university staff.
9. The governing body of each school and concerned authorities should be responsible for ensuring that children with special needs who are enrolled in their schools have a written Individualized Education Programme (IEP). This would include the child's goals, specific needs, personnel and resources necessary to achieve the goals. parents should be consulted on the IEP Development.
10. The governing body of each school and concerned authorities should be accountable for ensuring the least restrictive environment for every child with special needs attending their schools.

**The 21st APEID Special Education Seminar with the Celebration of
NISE's 30th Anniversary - Report
Special Education Partnerships for the 21st Century
Developing Special Education in Each Country and Enhancing International**

Collaboration among Countries in the Asia- Pacific Region

By OSHIRO Eimei

(The Department of Education for Children with Visual Impairments)

The 21st APEID (The Asia- Pacific Programme of Educational Innovation for Development) special education seminar with the celebration of NISE's 30th anniversary was held in the international conference room at the National Olympic Memorial Youth Centre,

Tokyo for six days between the 18th and the 23rd of November 2001, co-hosted by NISE (The National Institute of Special Education) and the Japanese National Commission for UNESCO. This report outlines the content of the seminar.

1. The seminar

The significance of the seminar was supported by two main facts; the year 2001 was the final year of the APEID Special Education Seminar Cycle ,6 (1997-2001) with the main theme of "Special Education Partnerships for the 21st Century" and it was also NISE's 30th anniversary since its establishment in 1971, as the name given to the seminar suggests.

The seminar proceeded with various events: the first day was spent on orientation. On the second day the opening ceremony was held preceding the memorial lecture to celebrate NISE's 30th anniversary in the morning, followed by the panel discussion in the afternoon. From the 3rd day to the final day of the seminar, it concentrated on reports and discussions regarding "Development of Special Education and International Collaboration in the Asia-Pacific Region", which was the sub- theme of the seminar.

The APEID sub- seminar proceeded with comprehensive discussions focusing mainly on the development and enrichment of special education in the Asia- Pacific region by clarifying further issues and solutions as well as the promotion of international collaboration in special education within the Asia-Pacific region.

2.Co- hosts

The National Institute of Special Education

The Japanese National Commission for UNESCO

3.Agenda

Sunday 18th - Friday 23rd November 2001

Sunday 18th	Arrival, participation registration and orientation
Monday 19th	Opening ceremony, memorial lecture to celebrate NISE's 30th anniversary and panel discussion
Tuesday 20th	Comprehensive discussion
Wednesday 21st	Comprehensive discussion and closing ceremony
Thursday 22nd	Tour of National Olympic Memorial Youth Centre
Friday 23rd	Departure

4.Attendants

The seminar was attended by a representative from each of the thirteen APEID countries including Japan and an official representing the Bangkok Office. The staff members of NISE and the National Kurihama School for Children with Disabilities as well as many others including researchers from all over Japan also showed their enthusiasm by attending the seminar as observers.

Australia: Ms. Patricia Winter

Assistant Director, Disability and Professional Services, Department of Education, Training and Employment

China: Ms. He Guang Feng

Deputy Director/Associate Professor, Research Center for Learning Obstacles, Beijing Academy of Educational Sciences

India: Mr. Madan Mohan Jha

Joint Secretary, Indian National Commission for Cooperation with UNESCO, Ministry of Human Resource Development Department of Secondary Education & Higher Education

Indonesia: Mr. Nasichin

Director of Special Education, Directorate of Special Education, Directorate-General of Primary and Secondary Education, Ministry of National Education

Malaysia: Mr. Mohd Nordin bin Awang Mat

Deputy Director, General of Education, Department of Special Education, Ministry of Education

Nepal: Mr. Gopal Prasad Kandel

Section Officer, Special Education Council, Ministry of Education and Sports

New Zealand: Mr. Anthony Ross Davies

Manager, Development Services, Specialist Education Services

Pakistan: Mr. Syed Navaid Ali Nasri

Additional Secretary/Director General, Directorate General of Special Education, Ministry of Woman Development, Social Welfare and Special Education

Philippines: Ms. Simeona T.Ebol

Senior Education Program Specialist in Special Education, Special Education Division, Bureau of Elementary Education, Department of Education, Culture and Sports

Republic of Korea: Dr. (Mr.) Kim Dong-il

Assistant Professor / Special Education, Department of Education, Seoul National University

Sri Lanka: Mr. Athaudage Don Sirisena

Deputy Director (Special Education), Zonal Education Office, Horana

Thailand: Dr. (Ms.) Maliwan Tammasaeng

Director, Setsatian School for the Deaf

UNESCO PROAP: Ms. TAKAHASHI Yuka

Associate Expert in Special Needs and Environmental Education

5. The seminar proceeding

Summarised below is the proceeding of The 21st APEID Special Education Seminar with the Celebration of NISE's 30th Anniversary.

A. The memorial lecture to celebrate NISE's 30th anniversary and the panel discussion

- (1) The memorial lecture was given by Prof. Yoshitatsu Nakano, the associate professor of Sano International Information Junior College. The lecture was themed as "Life- Long Learning for Children with Special Educational Needs in the 21st Century". The lecture focused on how the entire society can provide the handicapped with an ideal environment in which they are given life- long support in developing their independence and therefore they are more encouraged to fully participate in society as well as enjoying a harmonious coexistence with the no handicapped. This aspect was discussed taking into account international trends concerning special education. Important points raised related to the discussion were the underlying concept of children with special educational needs life-long learning to develop independence and self-reliance support harmonious coexistence education of children with special needs in Asia and the current status of Japanese education plus educational issues, all in relation to trends in education on the international scale.
- (2) The lecture was followed by the panel discussion focused on the theme "International Collaboration in Special Education for the 21st Century - Aspiration to Realize the Normalization Principle". Each of five panelists discussed in a 10-minute presentation how Japan should engage in special education in order to create a society in which each of the handicapped could lead a normal, content life as well as the no handicapped, and how international collaboration should relate to Japan's role in order to develop special education in the Asia-Pacific region. Following the presentations, the comprehensive discussion was held in the light of four major points which were (1) expectation from and prospects of special education by supporting the normalization principle (2) the definition of special education in Japan for the 21st century (3) the expansion and diversity of education which operates flexibly in response to individual needs (4) international collaboration in special education in the Asia- Pacific region.

B. The 21st APEID Seminar

The Term, 6 (1997-2001) main theme was "Special Education Partnerships for the 21st Century". This final

year's Seminar conducted discussions on the theme "Developing Special Education in Each Country and Enhancing International Cooperation among Countries in the Asia- Pacific Region".

In the country reports and the general discussion, opinions were exchanged and discussions were held actively from the following three viewpoints, concerning problems faced by the countries, the measures and action plans necessary in solving such problems, and future outlooks, for the further development of special education in the Asia- Pacific region in the 21st century.

- 1) Innovation of people's understanding about education for disabled children and the action plan for the achievement of "Education for All".
- 2) Curricula development, training of teachers and school-building pertinent to education for disabled children.
- 3) International cooperation, its framework, and transfer of educational technology, for the development of special education in the Asia-Pacific region.

The country reports reported the situation and problems in each country, with the goal being achievement of education matching the needs of individual disabled children. The general discussion discussed the following. (1) The necessity to define the quality or merits of special education by taking into account diversity of diverse types of intelligence, instead of giving it a narrow definition. (2) The necessity to redefine the curriculum in relation to inclusion education by reexamining it at diverse levels instead of making it uniform; for instance, school- level curricula, individualized curricula matching individual needs, etc. (3) The necessity to further improve the training of special education teachers, and for such teachers to learn about inclusion education by cooperating with teachers of ordinary classes. (4) That inclusion is not compulsory but an option to learn together. (5) Networking to promote the transfer of teaching aids and educational technology. (6) To become constructive and critical friends by supplying, utilizing and sharing information. (7) To further promote diverse types of exchange, and to promote issues common to countries as joint projects. (8) Special education should be promoted by constructing partnerships of diverse people and agencies such as children, guardians and the community, instead of leaving it as a matter concerning just the interested parties.

As part of the report regarding the current status of special education in Japan, it was noted that there was a new movement in the educational reform of special education, corresponding to the changes of related

circumstances, which would bring diversity to education so as to meet the individual requirements of children with special educational needs. Case studies were presented, which illustrated some children who attend ordinary schools and who are in need of special educational support. The report also included a description of the current status of international collaboration in connection with special education in Japan.

Described below are six points raised by the report, indicating foreseen issues and views regarding further development of special education in Japan and international collaboration. These points indicate the need for reviewing the criteria in order to classify handicap levels and school enrolment procedures in order to provide better education for Japanese children with special needs, the need of improving teaching guidance including teaching methods with greater consistency, and the importance of coordinating special education with other relevant fields more scrupulously.

- (1) The review of the criteria in order to classify handicap levels and school enrolment procedures in order to provide education that meets individual requirements of children with special educational needs
- (2) The provision of counseling and guidance throughout the child's educational development from the infant period to school graduation
- (3) The enrichment of the role of schools for children with visual impairments, speech and hearing handicaps and disabilities as the special education centre in the local community
- (4) The creation of a school environment in which children are encouraged to develop creativity, independence and self-reliance support.
- (5) The intensification and promotion of coordination and collaboration between special education and other relevant fields
- (6) The endorsement of international collaboration in special education

Special Education in the 21st Century: - Provision of Special Support to Meet the Needs of Each Child - (Final Report)

Following twelve months deliberation, The Ministry of Education, Culture, Sports, Science and Technology in Japan published the report of the Advisory Committee on “Future Directions for Special Education in the 21st Century” on January 15th, 2001, entitled "Special Education in the 21st Century: - Provision of Special Support to Meet the Needs of Each Child - (Final Report)". This report reflects the determination of the Japanese government to further improve special education in the 21st century and build on the foundation upon past achievements. However, the report is extensive, so only the first chapter entitled ‘Fundamental Policies on Special Education for the Future’ and summary of "Special Education in the 21st Century" are included below.

Chapter1 Fundamental Policies on Special Education for the Future

1. Development of Special Education in Japan

The special education system in Japan was established in 1947 by the School Education Law which stipulates the establishment of schools for the blind, schools for the deaf, and schools for children with intellectual disabilities, physical disabilities and health impairments (hereafter these types of school are referred to as "special schools"), as well as special classes in ordinary schools. Compulsory education in schools for the blind and schools for the deaf, which started in 1948, was accomplished in 1956. Meanwhile, the establishment of special schools proceeded steadily and attendances at all special schools were made compulsory in 1979. In the same year, ‘home tutoring education’ started. In this program, students unable to attend school due to some disabling condition(s) are enrolled in elementary, or lower secondary departments of special schools and teachers from these schools teach them at home, or in medical institutions. Since attendance requirement at special schools and home tutoring education became compulsory, the number of children whose obligation to attend school are postponed or exempted has decreased. Furthermore, in 1993 teaching in resource rooms began for students with mild disabilities. These students are enrolled in regular classes and usually taught in regular classes, but at certain times during the school day they go to the resource rooms where they receive special education. In addition, since 2000, home tutoring education has been offered to students enrolled in the upper secondary departments of special schools.

As a result of these developments, in 2000 there were 992 special schools nationwide with 90,000 children. At the same time, 18,000 elementary and lower secondary schools

(50% of all such schools) offered special classes (26,000 special classes), with a total enrollment of about 73,000 students. In addition, 28,000 students were being taught in resource rooms. Thus, 191,000 students were provided special education nationwide in 2000, which accounted for approximately 1% of all school-age children in Japan. Of the total of all students in compulsory education, the number of students receiving special education was approximately 150,000, or about 1.3% of all students in this age group.

Special education in Japan has experienced continuous improvement. The system actively promotes programs for the educational activities for independent life so that children and students with special needs can acquire the basic skills to maximize their ability, to exert their potential, to become independent, and to participate to the maximum extent possible in society. Special education also promotes joint activities with students at ordinary elementary and lower secondary schools as well as with people in the local community.

2. Fundamental Policies on Special Education for the Future

In the past, Japanese special education has focused on building and improving special schools and special classes to provide careful and warm education with appropriate consideration for the type and degree of each child's disability.

Recently, however, the social context of special education has been changing. For example, the concept of normalization has attracted much attention, disabilities have become severer and more diverse and educational administration is gradually becoming more decentralized and more diverse. To meet these changes, it is necessary that special education in the future should understand the special educational needs particular to each child with

disabilities from his/her view and should offer educational support the most appropriate for these educational needs, as described as follows in detail.

(1) Society as a whole should support the independence and social participation of students with disabilities throughout their lives to achieve a `normalized society`.

To achieve the principal of normalization, the Japanese government published a document entitled "New Long-Term Programme for Government Measure for Disabled Persons: Establishing a Society in which Each Person Participates" and embarked on actions in the fields of education, social welfare, medicine, labour and so on. In 1993, the government revised the `Fundamental Law for Countermeasures for the Mentally and Physically Disabilities` to the `Disabled Persons Fundamental Law` to promote the independence and participation of people with disabilities in a variety of social, economic, cultural, and other areas.

In the future, people with or without disabilities should understand, help, and support each other as human beings living in a common society. With this goal in mind, society should support the ultimate independence of people with disabilities comprehensively and throughout their lives by establishing unifying framework of support from various fields such as education, social welfare, medicine and labour. These support frameworks will enable students with disabilities to live a life of fulfillment in the community as active members communicating others and actively participating in society.

As for education, it is necessary to reinforce cooperation with the fields of social welfare, medicine and labour, and to mobilize all social resources available to fulfill the education of students with disabilities to exert their abilities and capacities as much as possible for their independence and participation in society.

To give an example, it is necessary for students in special schools to promote an association with peers and adults in the community to establish the basis of their life in their own community so that they can lead active and rich lives as members of these communities.

Furthermore, special schools and social welfare facilities should be urged to provide opportunities for lifelong learning, to promote employment and to support their lives for people with disabilities to live independently and to participate in their community after graduation, collaborating with the fields of social welfare, medicine and labour.

(2) Education, social welfare, medicine and labour in a body, should establish a framework to provide consultation and support for children with disabilities and their parents from

infancy to the post-school years through a integrated system of education, social welfare, medicine and labour.

To provide the most appropriate special support to each child with disability, education, social welfare, medicine, and labour should work in a body to establish a framework to provide consistent consultation and support for both children and parents from infancy to the post-school years having the common goal for their independence.

Together with establishing framework described above, it is necessary to set-up a consultation and support team with a common goal and understanding among parents, personnel of related social services such as education, social welfare and medicine and so on. Through the accommodation of that team for the parents of children with disabilities, common understandings of the accurate assessment of the condition of the children, of the process of full involvement with the child to maximize their ability and capability, of the kind of support from education, social welfare and medicine is needed and possible, will arise among parents and personnel of related social services.

A consultation and support team consisting of personnel from education, social welfare, medicine, and labour should produce a file of educational and developmental records of each child and make use of that file consecutively while adhering to strict guidelines about the personal privacy of such information. Using these files of the educational and developmental history, both parents and team members will be better able to understand the needs of the child. This will enable the team to offer the most appropriate and practical educational, medical, social welfare and vocational support available at all developmental stages from pre- to post-school.

Furthermore, after the special support has done, representatives from related organizations will evaluate the adequacy of executed support for each disabled child. Based on this evaluation, through educational/developmental meetings, parents and team members will be able to improve the programs of the next round of support.

It is necessary to establish the multidisciplinary framework including the fields of education, social welfare, medicine and labour to assess the special needs of children with disabilities accurately and to deliver the appropriate support to them and their parents from infancy through to the post-graduate stages of life.

(3) Enrich the education in special schools to meet the special needs of students with serious and/or multiple disabilities and fulfill the educational support to meet the needs of students with special educational needs in regular class.

Contemporary issues in special education include

fulfillment of education for the students with severe and/or multiple disabilities, diversification of disabilities, an increasing demand for early support, the increase in enrollment at upper secondary department of special schools, and diversification of courses of the people with disabilities after graduation.

Since special schooling became compulsory in 1979 and various improvements were made at special schools nationwide, the enrollment rate of students with severe and multiple disabilities at special schools has increased. In response, the government has fulfilled the home tutoring education, and has improved the quality of education for students with severe and multiple disabilities in cooperation with relevant authorities in medicine and social welfare.

Recently, however, the proportion of students with severe disabilities has been increasing who need total assistance in moving, eating, toileting, changing clothes, etc. in special schools. Students with multiple disabilities, including speech impediment emotional disabilities, have been also increasing. In addition, special schools are being called on to provide the early support as well as the consultation in the post-school years. It is usually social welfare, medical authorities that preschool children consult and social welfare, medical and labour authorities that support post-graduated students on vacation and social participation. These have been often done without coordination with education in schools.

For vocational and social independence of people with disabilities after graduation, it is necessary to coordinate the services offered by education and by other fields such as social welfare, medicine, and labour to improve the quality of education provided by special schools.

For students with mild disabilities enrolled in regular classes in ordinary elementary and lower secondary schools, the education in resource room came to be statutory by `The Enforcement Regulations of School Education Law` in 1993, and it became to be possible for these students to receive the part-time special education. And there is an increasing needs for further special educational support for students with learning disabilities, attention-deficit/hyperactivity disorder (ADHD), and high functioning autism who are enrolled in regular classes.

The present framework of special education does not yet necessarily meet these needs mentioned above, because the special education in Japan has focused on the intensive education in the special schools or in special classes.

It is inevitable to meet the needs of special educational support for students with learning disabilities, attention-deficit/hyperactivity disorder (ADHD), and high functioning autism who are enrolled in regular classes.

(4) Improve the system of assignment for children to

understand the special educational needs of each student and to provide indispensable educational support.

So far special education in Japan has endeavored to give an appropriate education in special schools and special classes according to the type and severity of disability. However, the view of special education should be shifted to the view that special educational needs of each student shall be understood and indispensable educational support shall be provided in order to cultivate “zest for living”, a foundation to enable children with disabilities to maximize their abilities responding to the diversification of disabilities and social change.

The determination of assignment of students with disabilities is based on Article 22-3 of `The Enforcement Ordinance for School Education Law` which proscribes the national standards for the disability of students who should be assigned in special schools. Recently, however, due to progress in medical science and science and technology, as well as improvements of school facilities - including more sophisticated visual, hearing, and prosthetic aids - it has become possible to provide the appropriate education for students with disabilities in ordinary educational settings when the conditions are met.

At the same time, due to the enactment of the so-called `Decentralization Package Law` in April 2000, the assignment of students was changed from the national work to the work of each region.. This legislation means that local boards of education, based on their detailed consideration and responsibility based on relevant laws and regulations, determine the school a student with disabilities should attend.

In the future, to understand the special educational needs of students and provide indispensable educational support, government should review the national standards of assignment to special schools from the views of education, psychology and medicine reflecting the progress in medical science and science and technology. At the same time, it is necessary to review the procedures of assignment by local boards of education. This amendment means that the local boards of education should determine the assignment based not only on type and severity of disability, but also on the conditions of the community, school, support to be offered to the child, and the views of the child and parents. This also means that the local boards of education can enroll a student with disabilities in an elementary or a lower secondary school when there would be reasonable grounds for that the child would receive an appropriate education in that setting. Prefectural boards of education should make appropriate decision regarding the assignment to special schools and support the local boards of education to improve and fulfill the framework of assignment and related consultation and

support according to the policies described above.

(5) Revise the system of special education and reinforce the supports for municipal authorities and schools to promote the attractive and unique educational programs in schools and in local communities.

To understand the individual needs of students with disabilities from the perspective of each child and to provide appropriate support, each school should provide attractive and unique educational programs based on the local community. Also, local community resources should be utilized to provide a support framework to facilitate the independent lives of students with disabilities.

So far, Japanese educational administration has been operated under the national policy of equal educational opportunity and leveling up educational standard for all students with the cooperation of national, prefectural and local governments. This meant the education system has been standardized according to references made by the national government. Recently, however, there has been a trend towards the decentralization of a variety of administrative area.

In special education, to promote the independent and creative activities in each school and in each community, the administrative system of special education should be reviewed and the necessary supports to municipal authorities and schools by national or prefectural authorities should be reinforced.

It is necessary for more appropriate assignment of each student based on the comprehensive assessment of his/her special educational needs to review the procedures of assignment, advance the functions of committees of assignment and fulfill the system of consultation and support. At the same time, it is necessary for the national government and prefectural boards of education to assist local boards of education.

It is also necessary to revise existing regulations and their applications so that, under the leadership of the school principal, special schools and elementary and lower secondary schools can become more independent and autonomous. In this way, it will be possible for these schools to offer more attractive and unique educational programs designed to meet the needs of all children and the communities in which they live. In particular, special schools are hoped to develop their role as the local centers of special education applying their full resources such as their expertise, institutions and facilities in the area of disability.

Furthermore, for teacher development of special education the national government and prefectural boards of education need to encourage all teachers in special schools to obtain special education teaching certification. At the same time, in-service training seminars dealing with a variety of

topics should be offered.

In addition, when local boards of education offer programs based on their own policies and individual schools conduct their own educational activities, these organizations should make clear where principle responsibility lies.

Therefore, each school needs to examine and evaluate its management and the performance of its curriculum. To make a school open to the community and unique in its characteristics, the results of this in-house review should be shared with parents and the local community and the school should be prepared to for reflecting their opinions in an ongoing process of review of school management and curriculum. At the same time, local boards of education should examine the self-evaluations of individual schools and use the results to improve the overall education process.

Special Education in the 21st Century (Final Report): Summary

Chapter1 Fundamental Policies on Special Education for the Future

1. Development of Special Education in Japan (omitted)

2. Fundamental Policies on Special Education for the Future

* In response to the recent changes of the context surrounding the special education, it is necessary for the special education in the future to understand the special educational needs particular to each child with disabilities from his/her view and to offer educational support the most appropriate for these educational needs.

* The fundamental policies on special education for the future are described below.

(1) It is necessary that society as a whole should support the independence and social participation of students with disabilities throughout their lives to achieve a `normalized society`.

(2) It is necessary to education, social welfare, medicine and labour in a body, should establish a framework to provide consultation and support for children with disabilities and their patents from infancy to the post-school years.

(3) It is necessary to enrich the education in special schools to meet the special needs of students with serious and/or multiple disabilities and to fulfill the educational support to meet the needs of students with special educational needs in regular class.

(4) It is necessary to improve the system of assignment for children to understand the special educational needs of each

student and to provide indispensable educational support.

(5) It is necessary to revise the system of special education and to reinforce the supports for municipal authorities and schools to promote the attractive and unique educational programs in schools and in local communities.

Chapter2 Improving the Assignment

1. Establishing a Consistent Advisory Support System from Infancy to the Post-School Years

* Local boards of education should establish a system in which education, social welfare, and medicine provide coordinated consultation and support to children with disabilities and their parents.

* The national government should examine the functions and membership of a special advisory support team so that an advisory support system backed by the coordinated activities of education, social welfare, and medicine shall be established.

* Prefectural boards of education should cooperate with the work of social welfare, medicine, and other related departments in the bureaucracy and encourage municipalities within their prefecture to establish an advisory support system.

2. Reviewing the National Standards and Procedures of Assignment for Children with Disabilities

* Reflecting the progress in medical science and science and technology, the national standards of severity of disabilities to enroll in special schools should be reviewed from the views of education, psychology and medicine. At the same time, it is necessary to review the procedures of assignment by local boards of education. This amendment means that the local boards of education should determine the assignment comprehensively based on type and severity of disability, facilities and equipment or lower secondary schools etc. This also means that boards of education can enroll a student with disabilities in an elementary or a lower secondary school when there would be reasonable grounds for that the child would receive an appropriate education in that setting.

* The range of students who need additional care in special classes or in ordinary classes should be clarified.

3. Enhancing the Role of the Advisory Committee that Deliberate Which School Meets the Needs of Each Child

* The responsibilities and status of the advisory committee should be clarified.

* The advisory committee of local boards of education should provide parents with the opportunity to present their opinions during the deliberations. The committee should also

provide advice for school principals on the educational support in special classes or in resource rooms.

* When the decision of a local board of education differs from that of parents, the advisory committee of prefectural boards of education should offer professional advice objectively.

Chapter3 Supporting Students who need Special Educational Support

1. Improvement of Education Relating to Conditions of Disabilities

1-1 Improvement of Education that Reflects Students with Severer and Multiple Disabilities as well as Social Change

* Special schools should make efforts to devise methods for supporting students utilizing individual education plans, programs to promote independence, periods of integrated study, hands-on activities and joint activities with ordinary schools reflecting the situations of the community and their students.

* For students enrolled in special schools who require daily medical care, it is necessary to examine how to establish a medical support system in cooperation with medical institution and to improve education in consideration of the findings.

1-2 Educational Support for Students with Learning Disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and High-Functioning Autism

* In order to understand the situation of students with learning disabilities, ADHD, and high-functioning autism in ordinary classes, a nationwide survey should be done. Based on the results of this survey, all relevant personnel and the general public should be encouraged to develop a greater awareness.

*Educational support for students with ADHD, high-functioning autism should be investigated based on the research by the National Institute of Special Education (NISE) and the criteria and effective teaching methods should also be examined.

1-3 Improving Education Utilizing the Latest Information Technology (IT)

* Research and development of information equipment relevant to disabilities should be undertaken and teaching methods and system utilizing information technology should be examined.

* Education of students in home tutoring education programs using information and communication technologies should be actively promoted.

2. Education at Special schools, Special Classes, and Resource Rooms in the Future

2-1 Developing the Role of Special schools as Local Centers of Special Education

* Special schools should play the role of local centers of special education by, (1) offering guidance and counseling for pre-school children, and (2) by lending teaching materials and equipment to local elementary and lower secondary schools, providing advice to teachers at such schools, and offering in-service training.

2-2 Education in Special Classes, and Resource Rooms in the Future

Education in special classes and resource rooms should be supported by all school staff. At the same time, utilizing part-time outside teachers, special part-time teachers, and limited-hour staff employed through the retiree re-appointment system should be considered.

3. Encouraging Upper Secondary Schools to Accept Students with Disabilities and Supporting Life-Long Learning of People with Disabilities

* Prefectures should consider building and enlarging upper secondary departments of special schools and establishing special schools, which only have upper secondary departments meeting local needs.

* Boards of education should make efforts to improve the opportunities of life-long learning for people with disabilities in cooperation with welfare-related institutions. Special schools should support the life-long learning by people with disabilities.

Chapter4 Conditions for Improving Special Education

1. Class Composition of Students and Teacher Allocation at Special schools and Special Classes

* Prefectural boards of education should assign teachers flexibly in consideration of the situation of the community and schools and the needs of students.

* Special schools should be inventive about the curricula they offer and the teaching methods they use, such as creating a variety of learning environments beyond the traditional concept of the class. At the same time, the staff of the wide range is fixed by utilizing the teacher of the part-time outside teachers and the retiree re-appointment system, or the various human resources of a community as special part time teachers.

2. Teacher Development of Special Education

2-1 Increasing the Proportion of Teachers Who Have Licenses for Special Education and Licenses in the Future.

* Prefectures should aim for all teachers in special schools have licenses for special education set concrete goals and plans for improvement, and promote programs through employment, allocation, in-service training and so on.

* Considering the proportion of teachers who have licenses for special education in each prefecture, the national government should quantify the necessary number of holders nationwide, inquire as to the objectives, plans, and improvement status of the fraction on the part of prefectural boards of education, and assist them in their efforts.

2-2 Improving In-Service Training

* For improving the professionalism of teachers in special schools, appropriate training programs should be developed to meet the needs of the training objectives and the participants.

* Prefectural boards of education should work towards offering targeted and systematic training seminars corresponding to the number of years in service at special classes and other experiences, as well as the needs of teachers.

3. Conditions to Promote Special Education

* Boards of education should reform school facilities in consideration of making these facilities barrier-free, thereby improving and more closely meeting the needs of the children, as well as improving their living environment of dormitories.

* Teaching materials corresponding to improved content in the new Courses of Study should be acquired.

* Special schools should make plans to implement an information network environment and to obtain the latest information equipment appropriate for the disabilities of individual students.

4. Improving the Function of The National Institute of Special Education (NISE).

* To enhance its role as the Japanese national center on special education, NISE should, (1) conduct research to help in planning national administrative policies, (2) offer training seminars in response to new issues, (3) build a nationwide network of guidance and counseling information, (4) improve its role to disseminate information by a satellite communication network, and (5) improve collaboration, cooperation, and exchange with foreign research institutions.