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ABSTRACT

The 1976 revision of "The Portage Guide to Early Education", which appeared originally in the United States in 1972, was adapted for use in the Japanese culture and language and published in its Japanese version in 1983. Since then it has been used with more than 200 children (ages from birth to 7 years) of whom more than 60% were diagnosed as having Down Syndrome. Intervention services have been conducted weekly or biweekly at five Tokyo sites, and home teaching programs and teaching by telephone and correspondence have also been offered. Evaluation of the program with 144 children (89 of whom had Down Syndrome) found substantial increases in Developmental Quotient (DQ) or maintenance of Developmental Quotient (DQ) despite previous research suggesting declining DQ scores for Down Syndrome children. A Japanese-language abstract is provided. (DB)

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THE JAPANESE ADAPTATION OF THE PORTAGE EARLY INTERVENTION MODEL AND SOME RESULTS

Kaoru YAMAGUCHI*

Key words: The Portage Guide to Early Education. Early intervention. Down's Syndrome

"The Portage Guide to Early Education (Experimental Edition)," published in 1972, was translated into Japanese in 1977. This version, however, was a simple translation of the original program and did not take into account the social and cultural practices of Japan. In order to successfully implement the Portage Program in Japan, modifications were essential which would take into account the differences between the American and Japanese cultures.

In 1976, a revised edition of the Portage Program was published in the U.S., whereupon we in Japan undertook to translate and adapt it for use in our country. With a grant awarded by the Japanese Ministry of Welfare in 1980, we modified the revised edition in terms of theoretical and clinical validity and in 1983, published the Japanese adaptation of "The Portage Program of Early Childhood Education (1976)," which consisted of 562 items.

Table 1 shows the number of items in each developmental area fractionated on the basis of age.

Many of the behavioral skills in the original program have been redefined, modified, eliminated, or added, to assure effective implementation of the program in Japan. Descriptions of some of the items are not necessarily clear in terms of the criterion of achievement. For instance, "Smiles" in the Infant Stimulation sequence was changed to "Laughs in response to dandling," or "Manipulates toy or object" in Socialization with "Hits two blocks together." Similarly, some of the suggestions in the curriculum cards were redescribed and some of the materials and teaching situations were illustrated, so as to be more understandable to the mother and teacher.

Linguistic and cultural differences between the two countries also have led to the elimination of some of the items or changes in their content. For example,

Table 1 Items in the Portage Program according to Developmental Areas and Age Levels

	Infant Stimulation	Socialization	Language	Self-Help	Cognitive	Motor	Total
0-4 mos.	45						
0-1 yr		28	10	13	14	45	
1 2 yrs		15	20	12	10	18	
2-3 yrs		8	22	26	17	16	
3-4 yrs		12	13	16	25	15	
4-5 yrs		9	11	22	21	16	
5-6 yrs		11	12	12	22	26	
Total	45	83	88	101	109	136	562

* Division for the Education of the Mentally Retarded

"Uses articles; *the, a,* in speech" and "Slides on sled" were eliminated, because we rarely use them in Japan. "Prepares own cold cereal" in Self-Help was substituted for "Participates in simple cooking," "Names capital letters of alphabet" in Cognition was changed to for "Names Japanese alphabet."

Some behavioral items indispensable for Japanese infants were also added to the program such as "Uses particles; *ne, yo* in speech." In addition, unsuitable description of some of the suggestions were either eliminated or modified.

Since 1983, we have been applying the adapted version of the Portage Program to developmentally delayed infants and children in Japan, and examining its appropriateness as an early intervention program. More than 200 children with ages ranging from 0-7 year-old, more than 60% of whom have been diagnosed as Down's Syndrome have participated in this program Our intervention has been conducted on a weekly or biweekly basis at five different sites around Tokyo We have also been offering services for home-teaching, and teaching by telephone and correspondence.

From among the children receiving our services, we selected 144 children for the purpose of this study, who had been given the Tsumori Mental Development Test at least twice after they were over one-year of age. Statistics across sex is shown in Table 2.

Table 2 Sex of Children

Sex	Number	Percentage
Boys	93 (57)	64.6% (39.6%)
Girls	51 (32)	35.4% (22.2%)
Total	144 (89)	100.0% (61.8%)

( ) represents Down's Syndrome

Results

Every four months, the Tsumori Developmental Test (TDT) which was standardized in Japan in 1957 was administe. : to each child. The data of the DQ (Developmental Quotient) which were obtained before the child was a year-old were not used because the reliability of the TDT scores before one year of age is low. The DQ scores of individual subjects obtained during the entry administration was compared to the DQ scores in the exit administration. The differences in DQ scores in each subject is shown in Figures 1 and 2 in Down's Syndrome (DS) children and Non-Down's

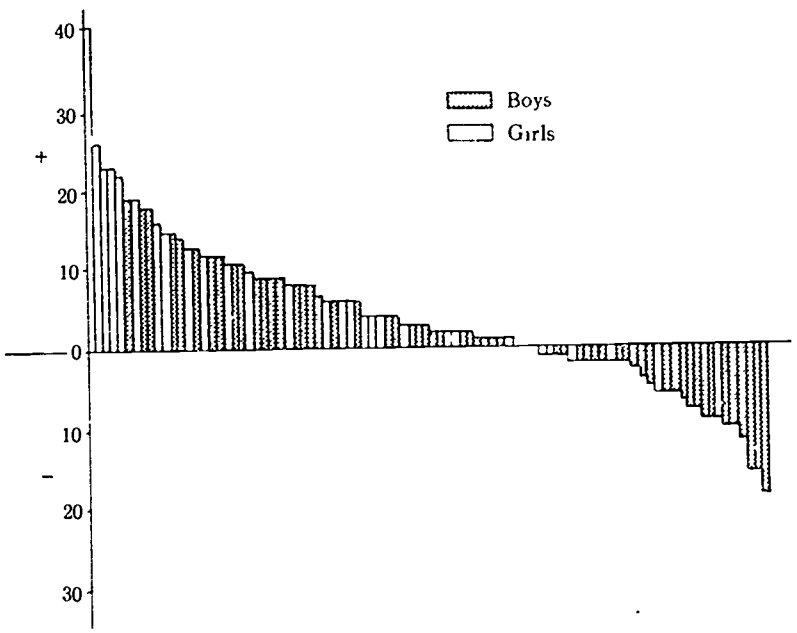


Fig. 1 Down's Syndrome

Table 3 Average Differences in DQ

	Boys	Girls	Total
DS	+1.39	+8.31	+3.88
Non-DS	+3.39	+1.74	+2.82
Total	+2.16	+5.86	+3.47

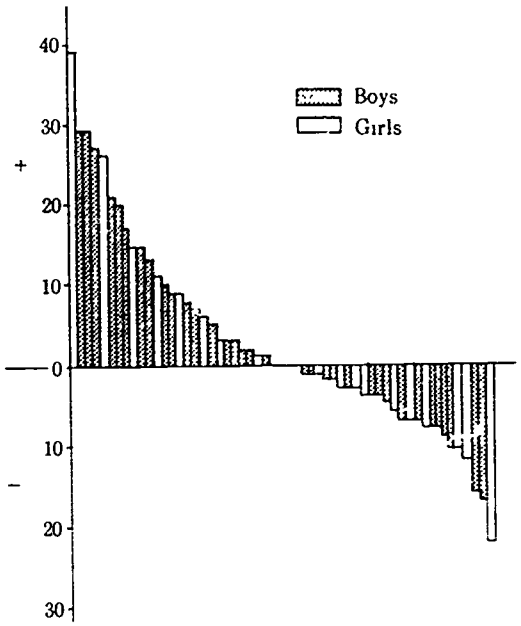


Fig. 2 Non-DS

Syndrome children (Non-DS) respectively and Table 3.

A grouped frequency distribution of individual children's entry and exit DQ scores on TDT is shown in Figures 3 and 4 for DS and Non-DS respectively.

Changes of their DQ scores in relation to age are shown in Figures 5 and 6 for DS and Non-DS respectively.

Discussion

As shown in Table 3, the average difference between the first and the last DQ scores on TDT was +3.47. In comparison with DS and Non-DS, DS gained more than Non-DS. One of the significant differences was that between boys and girls of DS children. The boys and girls were +1.39 and +8.31 respectively. Further examination of the sex issue seems to be indicated.

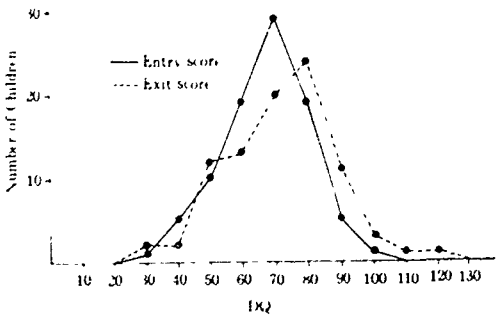


Fig. 3 Frequency distribution of individual DQ scores
(Down's Syndrome)

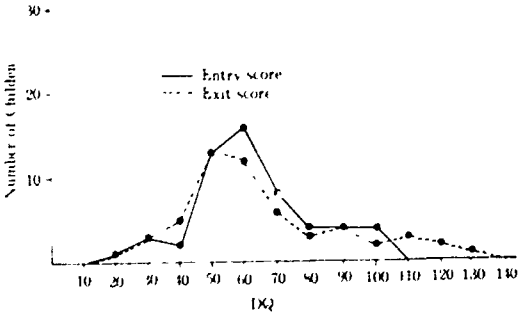


Fig. 4 Frequency distribution of individual DQ scores
(Non DS)

The effectiveness of our early intervention program was clearly supported by the data shown in Figures 3 and 4. The percentage of children who showed more than 71 in DQ score increased from 25% at the entry score to 45% at the exit score in DS (Fig 3) and from 22% to 27% in Non-DS (Fig 4)

In the case of the Non-DS children, one child's DQ changed from 95 to 122 and also scored IQ 122 in the Tanaka-Binet Intelligence Test at the age of 3, and another child from 100 to 113. These two cases suggest that the Portage Program may also be effective for children within the normal intelligence range.

According to Canning and Pueschel, DS children's DQ (or IQ) scores decrease from birth to school age, and stabilize at the moderate retardation level. This is shown by the solid line in Fig. 7 With the early intervention, DS children maintain their developmental

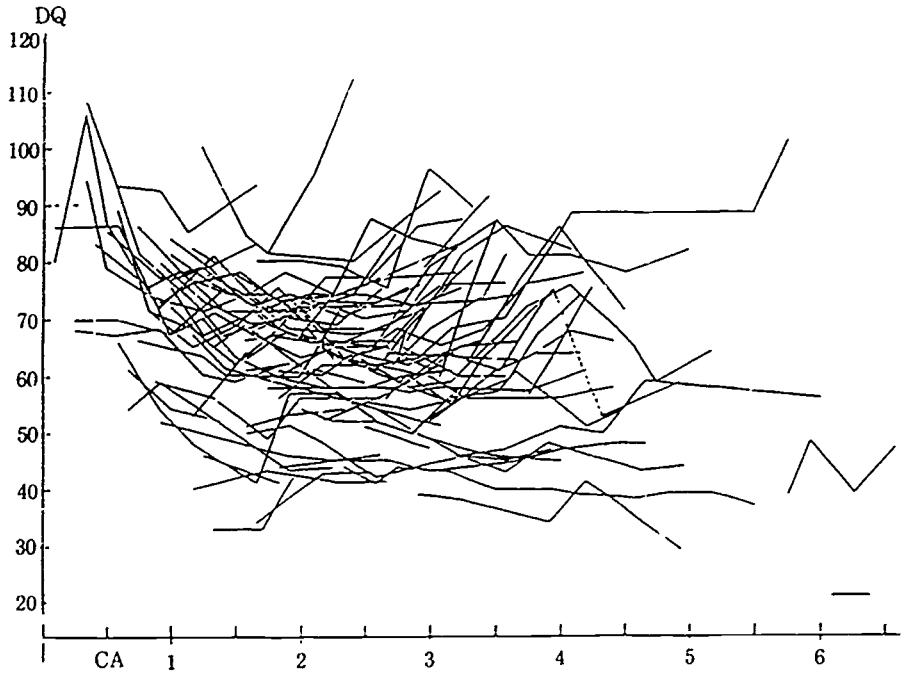


Fig. 5 Down's Syndrome

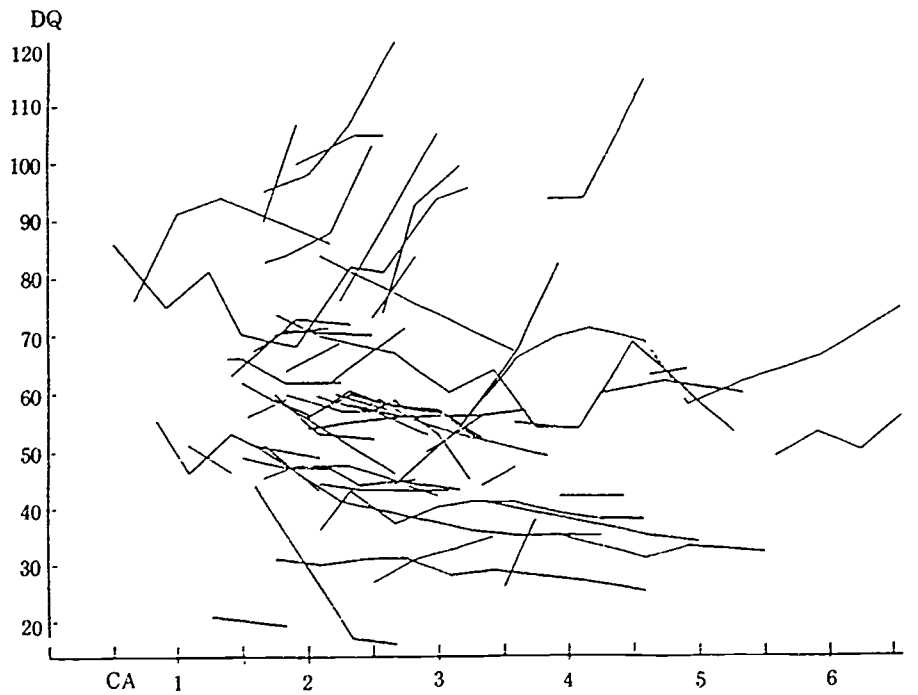
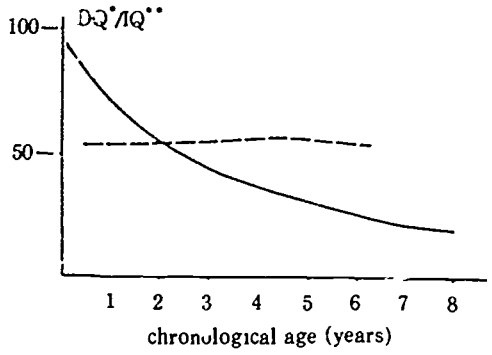


Fig 6 Non-Down's Syndrome



*Developmental Quotient
**Intellectual Quotient

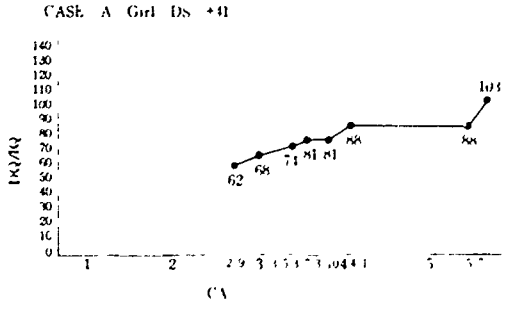
"The downward sloping curve represents the decreasing intellectual abilities previously reported by many observers. The interrupted line shows the results of our studies indicating that early intervention, appropriate special education, and home rearing of children with Down syndrome have a positive effect upon their mental function." From Claire D. Canning and Siegfried M. Pueschel, in *Down Syndrome: Growth and Learning*. Siegfried M. Pueschel, (Ed) page 74.

Fig. 7

competencies during this period.

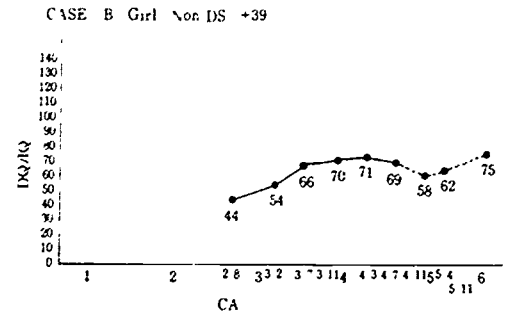
In Figure 5, the DS children's DQ curves turned upward at the age of about 2 and a half years except for one or two children. It is apparent that this tendency suggests a hopeful future for most of the DS children in the Portage Program when they reach at school age.

Now we would like to discuss some of the children who gained most and lost most.



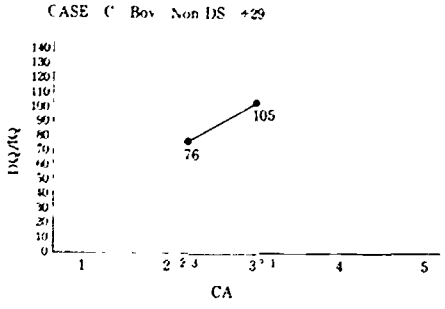
Case A: Mami CA, 5 9

Mami is a DS girl with heart disease. After 3 years training, her DQ reached at 103.



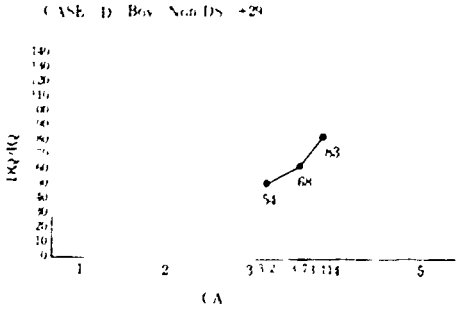
Case B: Kyoko CA, 6:7 Non-DS

She attended regular kindergarten between 3:2 and 6:2, then now attending a regular class of the elementary school. The last score was obtained on Tanaka-Binet which was standardized in 1970.



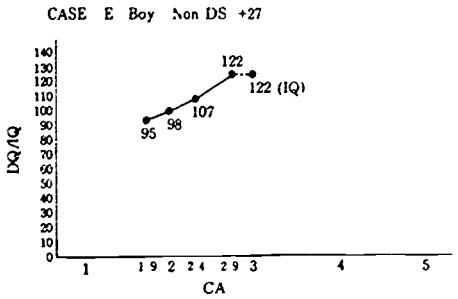
Case C: Yoshinori CA, 3:1 Non-DS boy

His DQ changed from 76 to 105 after less than 1 year training



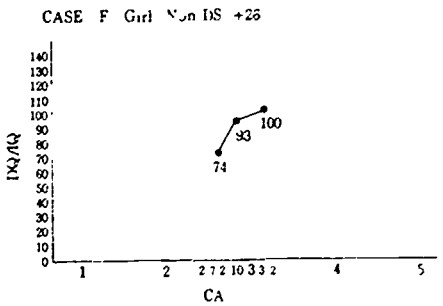
Case D: Takeshi CA, 3 11 Non-DS boy

Takeshi's DQ increased 29 points for 9 months and reached at 83.



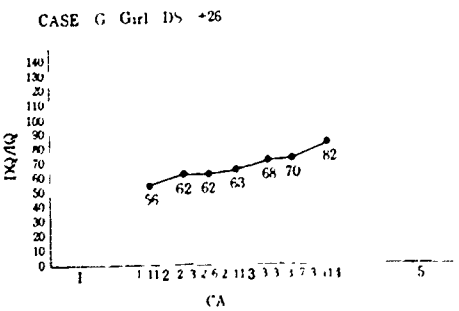
Case E: Taizo CA, 3:0 Non-DS

Taizo did not speak at all until the age of 2 years after which his language skills developed very rapidly. His current language ability is now better than average. The last IQ on the Tanaka-Binet was 122.



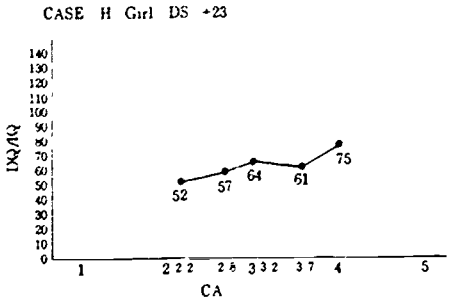
Case F: Mariko CA, 3.2 Non-DS

Mariko's DQ reached 100 for a short period and is having no problems while attending a kindergarten for normal children.



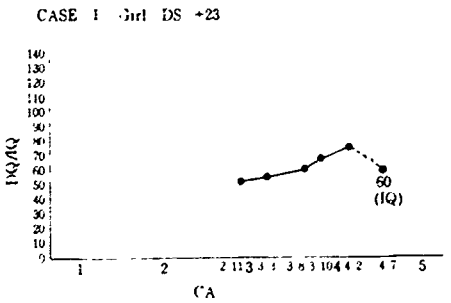
Case G: Yuka CA, 3:11 DS

Yuka's DQ increased from 56 to 82 for 2 years.



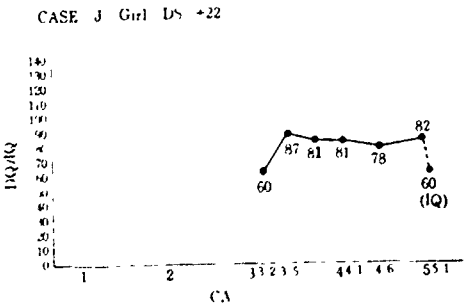
Case H: Remi CA, 3:7 DS

Remi is attending a nursery 4 days a week and also day care center for handicapped young children two days a week.



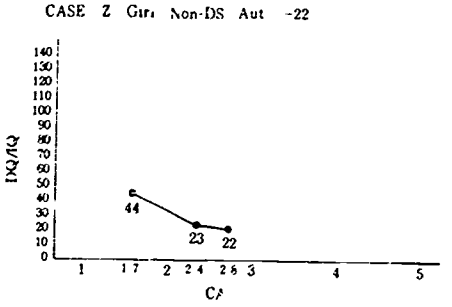
Case I Ami CA, 4 7 DS

Ami has been attending a regular kindergarten since she was 3 and a half years old. Her last IQ on Tanaka-Binet was 60.



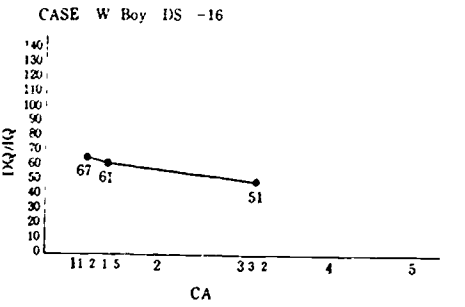
Case J Akiko CA, 5.1 DS

Akiko's DQ increased 22 points for 2 years 10 months. She is now attending a nursery for normal children. The IQ at the age of 5 years 1 month was 60.



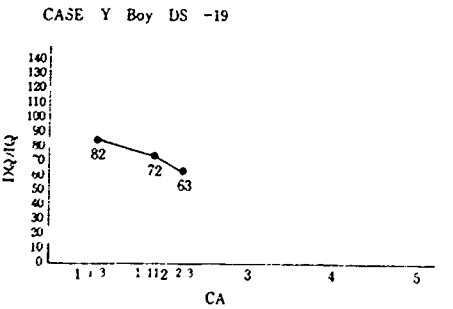
Case Z: Mai CA, 4:11 Non-DS

Mai is developmentally retarded due to brain fever and also has behavior problem. Her training discontinued at age 3.



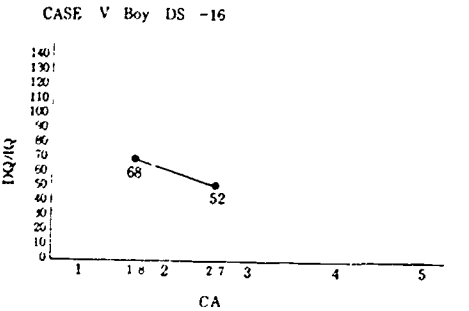
Case W: Koji CA, 3.2 DS

Koji comes to us less than once a month, as he lives far from Tokyo. He lost 16 points in terms of DQ scores.



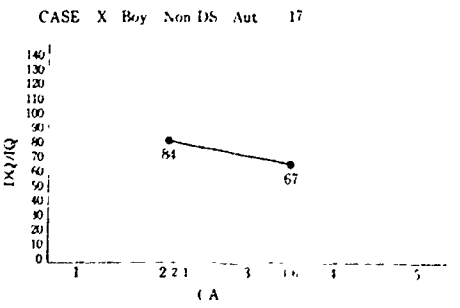
Case Y: Kenta CA, 2:3

Kenta's DQ decreased from 82 to 63 for 1 year.



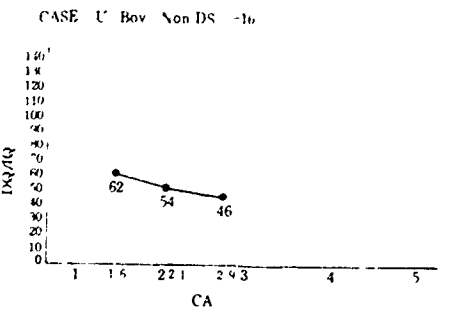
Case V: Tomo CA, 2:7 DS

Tomo's DQ decreased from 68 to 52. The frequency of training is once a month



Case X: Yasuo CA, 3:6 Non-DS

Yasuo is an autistic child and only comes to us irregularly. His DQ decreased from 84 to 67.



Case U. Koichi CA, 2.9 Non-DS

Koichi's DQ decreased from 62 to 46. The frequency of his training is also once a month.

The Future Problems

We plan to continue our research for at least 5 more years in order to clarify the long range effectiveness of the Portage Program and to analyze further some of the characteristics of the children in the subgroups, and the influence of differences of starting period in age, length of training period, intensity of training, and parents' attitude toward child-rearing.

Our future goals include examining the validity of the sequences of behavioral objectives, clarifying criterion of each objective and developing a training program for teachers and child care workers.

On March 1st of 1985, the Japanese Portage Association (JPA) was established. Although the number of members is rather small at present (about 450) our objective is to increase the number of members in order that more developmentally retarded infants and children receive appropriate early education through the use of the Portage Program.

ポーテージ早期対応モデルの日本への適用とその成果

東京学芸大学附属特殊教育研究施設
山口　薫

本研究は，「ポーテージ早期教育ガイド」（アメリカ合衆国ウイスコンシン州ポーテージ，1976年改訂版）をもとに，日本の発達遅滞乳幼児のために翻案した早期教育プログラムである「ポーテージ乳幼児教育プログラム」の，理論的および臨床的妥当性を検討することを目的とする。

「ポーテージ乳幼児教育プログラム」の行動目標は，日本の文化背景や言語体系などを考慮して，総数562項目となった。

1983年以来，このプログラムを用いて，0－7歳の年齢範囲の，総数200名余りの発達遅滞乳幼児（60%ほどはダウン症）を対象に，療育指導を行ってきた。療育指導は，都内5カ所のいずれかの場所へ母子ともに原則として週1回の頻度で来所し，そこで次週の指導プログラムを受け取り，親は家庭で自分の子供を指導する，という過程を繰り返した。

療育指導の効果を評価するために，津守式発達検査を4カ月ごとに実施した。1歳以降2回以上この検査が実施できた対象児144名について，初回時と最終時のDQ値の差を算出した結果，+3.47の上昇がみられた。ダウン症群と非ダウン症群の比較では，ダウン症群の方が上昇が大きく，ことにダウン症乳児群では+8.31の上昇が示された。またDQ 71以上の対象児が占める割合は，ダウン症群においては，初回時が25%だったのに対し，最終時には45%に増加していた。

さらに，ダウン症群の加齢に伴うDQ値の推移をみると，2歳半以降，上昇する傾向があり，「ポーテージ乳幼児教育プログラム」の有効性が示唆された。

キーワード：ポーテージ早期教育ガイド　早期対応　ダウン症