

## Snoezelen: Its Effects on the Education for Infants with Severe Motor and Intellectual Disabilities

— An Investigation based on Questionnaires given to Mothers —

Hiroshi ANEZAKI

### Abstract

The educational effects of Snoezelen on Infants with severe motor and intellectual disabilities have seldom been reported until recently. The purpose of this paper is to investigate the educational effects of Snoezelen on these infants. The subjects consisted of ten mothers of infants with severe motor and intellectual disabilities who were bringing their infants to the Infant Rehabilitation Center on a regular basis. The Snoezelen average session consisted of 4.6 times participations  $\pm$  1.4 times per infant. The infant's average age is 3 years, 5 months  $\pm$  1 year, 6 months. In this research, the questionnaire was given to mothers who experienced Snoezelen at the Center. Although significant differences were not observed in behavior of their infants, four infants showed interest in environment of the Snoezelen, and these infants were able to relax, and enjoy the sessions. And the Snoezelen sessions appeared to have had a positive effect on the mental fatigue of the mothers. Moreover, many mothers wanted to continue with Snoezelen sessions at the Center. It may be said that more scientific study is demanded in the future.

**Key words** : Snoezelen, sensory stimuli, educational effect, questionnaire, infant with severe motor and intellectual disabilities

### Introduction

Snoezelen was developed in the Netherlands in the 1970s, and afterward spread throughout Europe, Canada, and elsewhere. Since that time, the number of institutions for children or people with severe motor and intellectual disabilities where it has been adopted in recent years has been increasing, even in Japan. The Japan Snoezelen Association was established in 1999.

In Japan Suzuki (2001) has summarized the concept of Snoezelen using the following three points. Firstly, it provides environments that contain organized stimuli such as scents, sounds, music, and various tactile materials that make it easy to attract people with disabilities and they may find it easier to derive enjoyment from these things (Maintenance of physical environment). Secondly, people with non-disabilities accept the pace of activity and the way of correspondence to person or thing of people's own with disabilities plainly, and both enjoy the place together (Maintenance of humanistic environment). Thirdly, all the participants are in close contact with one another which promotes mutual methods of shared touch and enjoyment, and the development of relationships. (Deepening of natural relationships).

Thus, the Snoezelen is neither a cure nor a set of teaching methods but, rather, it can be called

an idea of how to be concerned with people with disabilities and offer assistance on necessary occasion (Japan Snoezelen Association, 2002).

Snoezelen in the Shimada Rehabilitation Center (Yamanaka, 1997), the first Biwako Academy (Nakaya, 2000) practice reporting and research on the effects achieved at the Tokyo Metropolitan Higashi-Yamato Rehabilitation Center (Yashiro, Ozawa, Fujimura, Matsushige, Nakayama & Fukuda, 1997) etc. appear here and there. And assessment of Snoezelen in Japan have, up to the present time, been reported mainly by medical treatment and the welfare organizations.

On the other hand, regarding the use of practice and research into the education of children with disabilities, which have just been launched, Anezaki (2003) presented a research report in April, 2003 concerning the validity of Snoezelen for the education of students with severe motor and intellectual disabilities in the senior section of a special school for the physically handicapped.

Moreover, in many foreign countries, references to the use of practice (Gallaher & Balson, 1994) and research (Bunsen, 1994) at the Limington House School in Britain, appear here and there and are briefly compared with research into the effects on profoundly intellectually handicapped persons (Ashby, Lindsay, Pitcaithly, Broxholme & Geelen, 1995 ; Lindsay, 2001), elderly people (Savege, 1996 ; Morrissey & Biela, 1997), effect on hospitalized patients (Shapiro, Parush, Green & Roth, 1997 ; White, 1997), etc. related to the field of education for physically and intellectually challenged children.

Therefore, when viewed globally, it is thought that the practice and research of Snoezelen in the field of education for physically and intellectually challenged children is an important subject for the future.

### **Purpose**

In previous research, on the other, Anezaki (2003) pointed out the educationally effective aspects of "activities to foster independence." (This is one area which is used for the curriculum of schools for children with disabilities, consisting of learning activities which focus on the education of children with severe motor and intellectual disabilities).

Moreover, adopting Snoezelen clearly from now on at a time when severe motor and intellectual disabilities connected with activities to foster independence or the leisure-time activities of club programs and the Snoezelen educational curriculum is becoming an important topic. However, the present situation is one in which the educational effects of Snoezelen on infants with severe motor and intellectual disabilities have seldom been reported until recently.

Thus, in the case of this research, the questionnaire was given to mothers who experienced Snoezelen at the Infant Rehabilitation Center for mothers and infants with severe motor and intellectual disabilities. At this Center, the mothers and infants participated together with the aim to investigate the educational effects of Snoezelen through an analysis of those results.

## Subjects and the environmental setting

The subjects consisted of ten mothers of infants with severe motor and intellectual disabilities who were bringing their infants to A City Infant Rehabilitation Center on a regular basis.

In the case of severe motor and intellectual disabilities, the infant's average age is 3 years, 5 months  $\pm$  1 year, 6 months (from 1 year, 2 months to 6 years, 3 months). Six of the infants were in Oshima's Classification (Oshima, 1971) 1 ; three infants were in Oshima's Classification 5 and one infant was in Oshima's classification 16.

The setting of the environment consisted of a borrowed language training room of about 7 mats (one mat measures 6  $\times$  3 feet). The lighting was turned down and the Snoezelen environment was set up using the following stimuli.

- For visual stimuli, there was a bubble tube, a fiber glow, and a solar projector (clouds).
- For auditory stimulus, Snoezelen music (CD) was used.
- Aromatherapy (sweet orange) was used as an olfactory stimulus for the infants.

## Method

One Snoezelen session of about 21 minutes in length was carried out by a total of three people, one Center staff (researcher), one mother, and an infant with severe motor and intellectual disabilities at the Infant Rehabilitation Center.

Snoezelen activity continued for a period of three weeks during December 2002. The average session consisted of 4.6 times participations  $\pm$  1.4 times per infant (From 3 to 7 sessions).

Later, after the Snoezelen activity period had ended, each mother was asked to fill out a questionnaire.

The questionnaires were distributed in January 2003 and they were collected during January. Recovery rate of the questionnaires was 100%.

Each question in the questionnaire constituted of a five-point-scale and a space for open-ended answers. The Binomial test was adopted for statistical processing.

## Results

### 1. Results of official approval

- 1) Many mothers were glad that they were able to experience these Snoezelen sessions. (p<.05)
- 2) One-to-one individual care was seen as a good point. (p<.05)
- 3) The music (CD) was well received. (p<.05)
- 4) The time allowed for one Snoezelen session was just right. (p<.01)
- 5) The size of the room used for the sessions was appropriate. (p<.01)
- 6) There were many mothers who would like to continue with Snoezelen sessions at the Center. (p<.05)

7) Clear changes in the behavior of the infants were not apparent. (N. S.).

**2. Question : “Of the Snoezelen sensory stimuli that your child was subjected to, which ones attracted his/her interest?” (multiple answer possible)**

- 1) Bubble tube (nine respondents)
- 2) Fiber glow (six)
- 3) Aromatherapy (five)
- 4) Snoezelen music (five)
- 5) Solar projector (three)
- 6) Care provided by the staff at the Center (three).

**3. Mothers listed the following effects of Snoezelen on their infants, as follows.**

- 1) Was able to participate in a new experience (ten persons)
- 2) Was able to get used to a new environment (five persons)
- 3) Was able to relax (four persons)
- 4) Took more interest in his/her surroundings (four persons)
- 5) Was able to enjoy more things (three persons).

**4. Question : “Were you able to discern any change in the infant’s behavior?”**

- 1) Cannot say which. (Five persons) — Oshima’s Classification 1 (1 year, ten months), 1 (2 years, ten months), 1 (5 years), 5 (2 years, two months), and 5 (3 years, eight months)
- 2) Some change was evident. (Four persons) — Oshima’s Classification 1 (4 years, three months), 1 (4 years, three months), 5 (2 years, six months), and 16 (6 years, three months)
- 3) Almost no change noted — Oshima’s Classification 1 (1 year, two months)

**And the contents of reply for the above 4. 2) are as follows.**

- ① Although this was the infant’s first experience, she responded enthusiastically to the bubbles in the bubble tube, and the light. She reached out her hand and touched the tube, and watched the changing of the colors intently. (Oshima’s Classification 1 : 4 years, three months)
- ② After the Snoezelen activities at the Center, my infant appeared to accept new environments more easily and became more interested in playing. She could now follow an object intently with her eyes because she had often seen the optical fiber light in a calm atmosphere. (Oshima’s Classification 1 : 4 years, three months)
- ③ I think that my infant was able to feel very relaxed. (Oshima’s Classification 5 : 2 years, six months)
- ④ Although my infant was afraid and cried when he went into the room for the first time, the next time he enjoyed the session, which was an unexpected change. Afterward he moved the aroma and the shining flower clock and he gradually came to enjoy himself at home too. (Oshima’s Classification 16 : 6 years, three months).

## 5. Responses to open-ended questions

- 1) "It was different from the usual training. I was very glad to have had such a valuable new experience. If possible, I would like my infant to experience such training a number of times per year." (Three mothers : infants 2 years, two months ; 2 years, ten months ; 4 years, three months)
- 2) "Although my infant cried because of the strange atmosphere of Snoezelen and was surprised at the start, I was very glad when he looked at the surroundings and was able to accept a new environment gradually as time passed. He showed increased interest little by little." (Two mothers : infant 3 years, eight months ; 4 years, three months) "From the second session onwards he was able to enjoy himself without being afraid, which is something quite rare for him." (One mother : infant 3 years, eight months)
- 3) "Although he was exposed to several experiences, I thought that he was very relaxed. I think that it is necessary to provide various experiences from now on, and I believe Snoezelen is one of the more important ones." (One mother : infant 2 years, six months)
- 4) "Although he is usually a nervous infant who gets frightened easily and cries when someone he does not know pushes his stroller, he was surprised at the Snoezelen activity and, unexpectedly, reacted well. He could relax and enjoy all the sessions from the 2nd one onwards and the mother was impressed for the first time in growth of my infant." (One mother : infant 6 years, three months)
- 5) "For parents and infants like us, who spend a large part of our lives dashing back and forth from home to the Center and the hospital, it was wonderful to be able to enjoy the relaxing time we spent at the center." (One mother : infant 5 years)
- 6) "There weren't many Snoezelen sessions, and so therefore it was not possible to say whether the infant was able to relax or not." (One mother : infant 1 year, two months)
- 7) "Depending on his mood on the day, there were days when he showed interest and those when he did not." (One mother : infant 1 year, ten months)

## Discussion

### 1. The educational effects of Snoezelen on infants with severe motor and intellectual disabilities.

Although significant differences were not observed in the form of changes in behavior of their infants, four infants with severe motor and intellectual disabilities from 2 years, 6 months to 6 years, 3 months, they showed interest in environment of the Snoezelen, and these infants were able to relax, and enjoy the sessions. Among these infants, two improved their ability to fix their gaze on things and improved in their play activities at home. Although other two infants (3 years, eight months, and 4 years, three months) were afraid and cried in fear of the environment of Snoezelen at first, they gradually came to accept this environment and were able to show an interest.

From observation of the behavior of the six infants described above, the environment of Snoezelen was a gentle one that was comparatively easy to accept also for infants with severe

motor and intellectual disabilities, and these infants displayed a greater degree of interest, becoming more relaxed and the educational effect of making it easy to get used to the surrounding environment was recognized.

On the other hand, in the case of two infants (1 year, 2 months, and 1 year, 10 months), (Oshima's Classification 1), assessment of the effects by observation of the infant's behavior was difficult and a clear assessment of the educational effects was not possible. As regards infants with severe motor and intellectual disabilities from the ages of 1 to 2, for one thing there are many areas of non-specialization which are still developing, and it is clear that the basic ability to react to various sensory stimuli is one that has not yet fully developed at that age.

Moreover, the case was observed of a 5 year-old infant (Oshima's Classification 1) who suffers from profound multiple disabilities and who needs tube feeding, and suffers from an unstable sleeping pattern and a deficient range of expression. Thus, it was difficult to perform an assessment based on observation of behavior at this time as well as in everyday life.

That the environment of the set-up for Snoezelen does not act effectively on all people has also been reported largely in previous research (Ashby, Lindsay, Pitcaithly, Broxholme, & Geelen, 1995 ; White, 1997 ; Anezaki, 2003). Thus, it was suggested that in the future there will be a need to explore the educational needs of these infants from various angles over longer periods of time. From the point of view of the staff providing the care at the Center, the main issues are the selection of appropriate sensory stimuli and the provision of an environment based on the various educational needs of the individual infant.

## **2. The effects of the Snoezelen on mothers**

Although the number of sessions at the Center was small (less than five times on average), virtually all mothers said "it was good to experience something new," and were positive. Moreover, many mothers wanted to continue Snoezelen sessions with the Center (eight out of ten).

Moreover, many mothers expressed the view that the Snoezelen environment offered a peaceful, relaxing environment in contrast to their usual hectic lives, traipsing back and forth between their homes, the Center and hospital every day.

The mother-and-infant Snoezelen sessions appeared to have had a positive effect on the mental fatigue of the mothers. It can be surmised that the sessions were also refreshing, giving the mother's a form of respite. Childrearing should include some provision for the mother to enjoy rest and relaxation, given the huge mental strain of their daily lives.

The mental support provided to the mothers by Snoezelen leads also to mother and child related growth and development, and is very important for creating a base for the development of infants with severe motor and intellectual disabilities.

## **3. Synthetically discussion**

Generally speaking, "emotional stability and development" is the first main area of growth and development of infants. Especially in the case of infants with disabilities, by making comparisons with infants with non-disabilities, emotional immaturity is often observed, and there is a tendency

towards emotional instability (Matsusaka, 1998).

As infants with severe motor and intellectual disabilities share feelings with either their own mothers or the staff at the Center, the act of deriving enjoyment from various play activities brings with it emotional stability. It can be said that this builds a base for development.

The environment provided by Snoezelen during the sessions helped to stabilize the infants with severe motor and intellectual disabilities and their reactions to others, the staff (researcher) at the Center and their mothers, and helped form mutual sympathy-based human relations by being exposed to the various stimuli that included vision, hearing, smell, etc. This made it possible for these infants to become involved in various activities and to experience joy or interest, reactions that affect the brain. Moreover, the mothers felt a sense of mental peace and this also helped to improve the relations between the mothers and their infants.

The formation of a sense of reliability or sense of stability in mother and infant interaction is very important for character development of infants from less than one to 2 years old (Matsusaka, 1998). Moreover, the provision of an environment that helps to foster the ability to feel things and events, i.e., "feeling education" by the use of sensory stimuli provided by Snoezelen, through repetition, is very effective educationally in fostering the development of infants with severe motor and intellectual disabilities.

For children with profound multiple disabilities, it cannot be inferred that significant effects have been scientifically proven although it is fair to say that there is no other environment as beneficial as Snoezelen (Koumoto, 2003). Therefore, it may be said that more scientific study is demanded in the future.

### **Future topics**

Since Snoezelen activity at the Center consisted of comparatively few sessions, it was not possible to generate data related to behavioral changes for every infant that participated. Therefore, it is necessary to carry out these sessions in the future that continue for long periods of time, and to examine their educational effects further by increasing the number of sessions in a given series.

Although behavioral assessment of infants with severe motor and intellectual disabilities was carried by maternal observation this time, henceforth it will be necessary to carry out such assessment with the co-operation of the staff at the Center. With the use of video cameras, the interactions of these infants, their mothers and the staff at the Center could be captured on videotape and be analyzed by observation, in addition the infant's own physiological index could be analyzed and so on, allowing for more scientific and objective assessment for analyzing their behavior.

### **Author's Notes**

A part of this paper was presented in a workshop at the 2nd International Snoezelen Symposium, Ede in Netherlands, Oct. 2003.

This study took support of scientific research costs subsidy ( a base study ) partly, and it was done.

#### References

- Anezaki, H. (2003) On the effectiveness of Snoezelen on the education of children with severe motor and intellectual disabilities, and its application to the teaching of "activities to foster independence" at school for children with physical disabilities. *Journal of Severe Motor and Intellectual Disabilities*, 28 (1), 93-98. (in Japanese)
- Ashby, M., Lindsay, W.R., Pitcaithly, D., Broxholme, S., & Geelen, N. (1995) Snoezelen : Its Effects on Concentration and Responsiveness in People with Profound Multiple Handicaps. *British Journal of Occupational therapy*, 58 (7), 303-307.
- Bunsen, A. (1994) A Study in the Use and Implication of the Snoezelen Resource at LIMINGTON HOUSE SCHOOL. Hutchinson, R., & Kewin, J. (Eds.) *Sensations and Disability : Sensory Environments for Leisure, Snoezelen, Education and Therapy*. Chesterfield : ROMPA, 138-146.
- Gallaher, M., & Balson, M. (1994) Snoezelen in Education. Hutchinson, R., & Kewin, J. (Eds.) *Sensations and Disability : Sensory Environments for Leisure, Snoezelen, Education and Therapy*. Chesterfield : ROMPA, 129-137.
- Japan Snoezelen Association. (2002) SNOEZELEN JAPAN, NO.9. (in Japanese)
- Koumoto, Y. (2003) Snoezelen of Sweden. *Sinhyoron*, 189-191. (in Japanese)
- Lindsay, W. R., Black, E., & Broxholme, S. (2001) Effects of Four Therapy Procedures on Communication in People with Profound Intellectual Disabilities. *Journal of Applied Research in Intellectual Disabilities*, 14, 110-119.
- Matusaka, K. (1998) Helping Development of Infants with Disabilities. *Colere-sha*, 15, 65-68. (in Japanese)
- Morrissey, M., & Biela, C. (1997) Snoezelen : Benefits for Nursing Older Clients. *Nursing Standard*, 12 (3), 38-40.
- Nakaya, M. (2000) "What is 'enjoyable, satisfying relaxation' leisure?". *Journal of Severe Motor and Intellectual Disabilities*, 25 (3), 82. (in Japanese)
- Oshima, K. (1971) Basic issue of severe motor and intellectual disabilities. *Public Hygiene*, 35,648-655. (in Japanese)
- Savege, P. (1996) Snoezelen for Confused Older People : Some Concerns. *Elderly Care*, 8 (6), 20-21.
- Shapiro, M., Parush, S., Green, M. & Roth, D. (1997) The Efficacy of the "SNOEZELEN" in the Management of Children with Mental Retardation Who Exhibit Maladaptive Behaviours. *The British Journal of Developmental Disabilities*, 43 (2), 140-155.
- Suzuki, K. (2001) Activity of person's own with mental disabilities — Snoezelen — . *Japan Snoezelen Association*, 1-21. (in Japanese)
- White, J. (1997) Creating a Snoezelen Effect in PICU. *Paediatric Nursing*, 9 (5), 20-21.
- Yamanaka, Y. (1997) Spent on time with persons with profound disabilities — philosophy of Snoezelen — . *Monthly Welfare*, 3, 64-65. (in Japanese)
- Yashiro, F., Ozawa, M., Fujimura, M., Matsushige, Y., Nakayama, H., & Fukuda, S. (1997) Development of the Sensory Stimulation Teaching method on children or people with severe motor and intellectual disabilities, applying the Snoezelen Approach. *Yomiuri Light & Love Project Group*. No.26 — Research Report of Subsidized Research for rehabilitation into Children or people with severe motor and intellectual disabilities, 55-63. (in Japanese)