



Results of the Implementation of the Principle of Inclusion in Education

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Abstract. The study found that the Portage Early Intervention program effectively promoted the development of children with autism spectrum disorder in all five developmental areas. The child who participated in the program showed significant progress in social development, language, self-help, purposeful-motor activity, and cognitive development. The student who provided the intervention attended the training and implementation process. The study highlights the importance of providing early intervention services to children with disabilities in their natural environment. Home-based programs, such as the Portage program, can be effective in promoting the development of children with disabilities and ensuring their inclusion in education. Furthermore, the study emphasizes that training can increase the availability and accessibility of such services in Mongolia. Overall, in the implementation of this home-based program for children with disabilities, the role of undergraduate student worked as a visiting teacher. The findings can inform policy and practice in promoting equality in education for children with disabilities in Mongolia.

Keywords: Portage program · Early intervention · Task analysis · Developmental disabilities · Home environment

1 Introduction

In Mongolia, since the services supporting the development and education of children up to 3 years old have not yet been formed, the children of herders in removed areas and children with disabilities cannot be fully involved in preschool education programs [1].

If the child's development status is assessed as early as possible the presence of developmental delay or problems is detected through early examination and if support services are delivered promptly, then there is a chance to eliminate the delay. Furthermore, even children with disabilities can develop their unique abilities and progress. According to a WHO study, identifying the characteristics of the problems of young children with disabilities and providing appropriate support and assistance on time resulted in a 30 percent reduction in disability. It is important to show immediate support to a child who has a developmental delay to decrease the competence loss and improve parents' involvement, early intervention is necessary [2] [3]. If services are not offered early, it will require more effort and time as the child ages.

Several international organisations promote inclusive education as a right for all learners. Goal 4 of the UN 2030 Agenda for Sustainable Development (United Nations 2015), as well as the most recent UNESCO guidelines (2017), affirm the human rights perspective by acknowledging inclusion and equity as overarching principles which should guide all educational policies and practices. [4] [5] Inclusive education is also prominent in key European documents (Council of the European Union 2018a; 2018b; European Union Agency for Fundamental Rights 2020) [6] [7] [8]. Given that learners with disabilities have experienced exclusion from education systems, other influential policy documents emphasize their right to inclusive education. In particular, Article 24 of the Convention on the Rights of Persons with Disabilities (United Nations 2006) defines inclusive education as “access to an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live”, emphasising

non-discrimination and preventing exclusion on the basis of disability [9]. Internationally, several types of programs are implemented to support the development of children as early as possible. In this study, we present the results of a study conducted with children with disabilities by selecting the Portage Early Development Intervention Program, enrolling students, and involving parents and caregivers. Research questions: 1) Will developmental progress occur when a child is involved in the Portage Early Development Support and Intervention program? 2) What is the feature of training for a student aimed at mastering the methods of the Portage program?

To answer the above questions, we evaluated the development of a five-year-old child with disabilities. We conducted a one-year study using the method of the Portage program¹ based on the child's strengths and opportunities. The Preschool Education School of MNUE student worked together to collect the research data². This program is unique as a family-based program for children with developmental delays and disabilities ages 0-6. This provides mutual benefits for children with disabilities, parents and families, educators. During the study, the student mastered the Portage program's methodology, provided support services at the children's homes³, wrote and documented it in the Portage program record-keeping form, and calculated the results by qualitative analysis. The first objective of our study is to present the research process and results of the changes and progress in the child's development by working with a 4-year-old child diagnosed with mild autism spectrum disorders in the Portage program. The current study aims to present the research findings and the changes and progress observed in the development of a 4-year-and-2-months-old child diagnosed with so-called mild autism spectrum disorder who was involved in the Portage program. Theoretical framework for family centeredness in ECI. Ecological model. Bronfenbrenner (1974) indicates in his model that the families of the children must be involved in early intervention to achieve positive outcomes. The child and the microsystem influence each other. *"Not only does the family or the school belong to this microsystem but also, for example, the activities at school or the relationship between the parents [10]*

Transactional theory. In the transactional approach, the development outcome is seen as the result of a continuous exchange of information, called transactions, between individuals and the environment (including parents) [11].

2 Methodology

We used qualitative methods such as the observational method with time sample notes, the task analysis method in the Portage program, the experimental techniques in the research, and the Portage program package album. These include: 1) Checklist for assessing the development status of children with developmental delays and disabilities, 2) A task card with step-by-step tasks to develop the child's lagging abilities, 3) Task analysis form and progress form developed by Portage teacher for an individual plan to work with the child, 4) A home record form for parents to record the progress and changes in the child's development, 5) A developmental chart for evaluating and evaluating the child's overall development [12]. The research consists of 4 stages. It includes: 1) Phase I. A period of training students in the theory and methodology of the Portage program and preparing them for working with children, 2) Phase II. Student B. T. assessed the current developmental status of T. N. with mild autism spectrum disorder using the Portage program tool to identify strengths and areas of developmental delay; 3) Phase III: Select which action targets to support in which areas of development; 4) Phase IV: Evaluate progress and changes in children's development according to the implementation cycle of the Portage program and calculate the results. We used time sampling observation and pedagogical experiments.

Sampling. A four-year-old and two-month-old girl, whose name is T.N., with autism spectrum disorders, attended the research. Also, a B.T. student studies at the bachelor's level in preschool education.

Phase I: The student involved in the research has received 40 hours of Portage program methodologies training and will work in the home with a disabled child, making a contract with parents, making a work schedule, preparing materials, and developing and confirming an individual study plan⁴.

¹ In Mongolia, starting from 2017, the Japanese version of Portage Early Development Support and Participation Program has been successfully implemented in Mongolia. This program is a family-based educational program that works with parents to support the development of children with developmental delays and disabilities aged 0-6 years.

² Student worked with a 4-year-2-months-old's child mild autism spectrum disorder

³ Official consent was obtained from the parents of the children involved in the study.

⁴ At this stage, the student will develop a plan for 3 credit /48 hours in the classroom and 3 credit /96 hours of practical training, and the classroom training will be for 2 months in the classroom of the secondary school, while the 96 hours of practice will be given to them in the children's home for 8 months according to a clearly planned schedule and individual work plan. The program was planned and implemented as support.

Phase II: According to the stage of research, T.N. has autism spectrum disorders was assessed on each of the Portage Early Development and Participation Program Checklists to determine current developmental status. (13-15.10.2021)

Table 1. Status of development of 4-year-old and 2-month-old's T.N

Child name: T.N.	Age: 4 years two months	Diagnose: ASD
Regarding cognitive development, T.N. quickly learns new things and likes puzzles, connecting words, drawing, writing, and finding simple patterns. Her mother is an English teacher, so she taught English to her child from an early age. She communicates with her family with a few words in English. She does not know the Mongolian language and does not understand it very well. She speaks when she wants to, but not in whole sentences. She says some words with the opposite meaning to satisfy her need to talk. She has a fever and stomachache when the environment changes due to auditory sensory problems. Because she is very mobile, when she goes outside, she runs immediately without realizing any danger will happen as soon as they leave the entrance. Socially, she is shy when communicating with others, and she has not learned to greet others and express gratitude.		
<p>Infancy: She laughs when she's cute: She doesn't laugh. Looks straight in the eye: Can't see. Sweeps: Was Follows: Always follows her mother To the caller when called by name Sees: She sees if she needs it. Human impersonator: No Unstable sleep: Unstable</p>	<p>Infant Development: Warranty: 1 month warranty started to support her head Start sitting: At seven months Start crawling: At eight months Walking: 3-4 walks at 11 months started Start of talking: From the age of 3 years and two months said one word with a meaning Connecting words: 3 years to 8 months Pointing: 2 years & Independent toilet: from 3 years [13] <i>Urination: from 3 years</i></p>	
<i>Status</i>		
<i>Life habits</i>		
<i>Having meals: Food choices are limited. She does not eat vegetables but eats flour, meat, rice, and fruit; eats independently and holds spoons correctly; eats soup with a spoon; does not eat foods with bright colors and thorns; eats dry food and whole pieces, sometimes drinks juice with a spoon, does not like hot meals, eats when gets colder. She takes food by herself.</i>		
<i>Toileting: She can defecate by herself. When it gets complicated, she asks for help from others.</i>		
<i>Dressing: She can put on and take off button-down shirts and pants; she asks for help when dressing shirts with buttons.</i>		
<i>Sleeping: Sleeps well.</i>		
<i>Communication:</i>		
<i>She likes to play with others, especially with her parents, plays friendly, covers dolls, and feeds them. She interacts only with familiars.</i>		
<i>Behavior and challenges:</i>		
<i>In general, she is stubborn and emotional and expresses her emotions. Father spoils her mainly. When she is angry, she pulls her hair and throws tantrums.</i>		
<i>Language</i>		
<i>Expressive language: She talks when needed and is confronted to speak or when she is interested. She uses 2-3 conjunctions when talking.</i>		
<i>Receptive language: She has good comprehension and can imitate what others say, understands simple short sentences, and does not understand time-expressive words.</i>		
<i>She watches cartoons on handphone and understands that it is cold and hot.</i>		
<i>She understands the story content but cannot retell it again when asked to tell.</i>		
<i>She imitates some of the actions of story characters and tells how many characters there are. Sometimes, she dances to the music.</i>		
<i>Hobbies:</i>		
<i>She likes doing tasks such as playing jigsaw puzzles, connecting the dots, drawing, writing, and finding patterns.</i>		
<i>She draws her family, concentrates well, and likes to finish her job.</i>		
<i>She has a lot of loose movements. If she does not have intended actions, she runs between the bathroom and the living room.</i>		
<i>Life habits:</i>		
<i>Morning: She wakes up between 9 to 10. From the morning until 11, she learns with her mother, such as drawing and reading after having breakfast.</i>		
<i>At 12, she watches TV.</i>		

Evening: She helps prepare dinner between 5 and 6, such as slicing vegetables and having dinner. She sleeps between 9 to 11. She runs between the rooms if she does not want to sleep.

Table 2. The I assessment results of the current state of T.N.'s development for each development domain (N=1)

	Age	Developmental domain	Social	Language	Self - Help	Cognitive	Motor	Number of completed tasks	Scoring
Total task & assessment			71	77	84	88	109	429	429
T.N.	4.2	Can do independently	49	40	60	61	95	305	305
		Can do with support	7	12	11	14	5	49	24.5
		Cannot do it yet	15	25	13	13	9	75	0
		Developmental age	2-3	1-2	2-3	2-3	2-3		329.5

Table 2 shows that four years and two months old T. N. Social, self-help, cognition, and purposeful-motor are at 2-3 years old, and language skills are at 1-2 years old. The need to support language development, socialization, self-reliance, cognition, and purposeful-motor arises here.

Phase III: Based on discussions with T.N.'s parents, the following behavioral objectives were selected from the Task Card of Portage program after the developmental assessment. It includes:

Table 3. Behavioral objectives were selected from the Checklist of Portage program

No	Areas	Behavioral objectives number	Activity goals
1	Social	54, 56	<ul style="list-style-type: none"> • She greets when she meets with a familiar one. • When playing with a friend's toy, she says, "Give it to me, please."
2	Language	61, 68	<ul style="list-style-type: none"> • She says her full name when asked. • She uses tenses in her speech.
3	Self-Help	56, 60, 61	<ul style="list-style-type: none"> • Wipe her nose when reminded. • She takes off and buttons her clothes. • Blow her nose when reminded.
4	Cognitive	70, 82	<ul style="list-style-type: none"> • Feel five different shapes with her hands and name them.

Phase IV: Evaluate and measure the Portage Program implementation cycle results.

The study results showed that the following progress was made as a result of using the Task analysis method and working with parents from October 13, 2021, to May 2022, to create the selected skills in T.N.

- According to the first assessment, she was shy when communicating with others and did not learn to greet and thank others for the action objective of Social domain No. 54. Therefore, we worked on the 54th behavioral objective of the social domain that if we meet someone we know, we will say hello even if we don't say it. As a result, in the second

round of assessment, if she met someone she knew except for close family members. If she was not familiar with the person, she asked for support, the girl looked at her mother, or she looked the other way. Also, regarding task #56, requesting "give it to me, please," when playing with a friend's toy, T.N. was not afraid to ask for permission or make requests when taking other children's toys. It took ten months.

- For speech tasks # 61 and #68, when someone asked for her name at the beginning, she imitated others and said only the first syllable. As a reminder, she said the last syllable. By December 22, 2021, she answered the questions such as "Who are you?", "What is your name?" by saying her full name. Also, she learned to say the time-expressive words "morning," "evening," and "not no.". She understands that she goes to the kindergarten early in the morning and is picked up the evening. By April 16, she can use the word "recently."

- Regarding self-directed action tasks # 56 and 61, action steps started to be realized, pointing to her nose to be cleaned, but it took three months until she took a handkerchief from her pocket to clean her nose when necessary. In the target of unbuttoning and buttoning, she learned to unbutton and button the big buttons of her and the doll's clothes. To get candy from the bag, she unbuttoned the bag and then partially buttoned it back up. By April 17, she learned to unbutton all the buttons on her dress and button it up.

- For cognitive domain tasks # 70 and 82, when she was told how she felt and held it in her hand, at first, she only named it according to the dimensions she knew - hot and cold. By November 10, she distinguished between hard and soft; after another 14 days, she distinguished between smooth and rough. As a result, by December 07, the goal of the action was achieved. Still, due to the child's characteristics, she was cautious when touching something and refused to continue when she felt discomfort, so the mother needed to touch it first. Based on this, she watched with great surprise when she started teaching the measurement of long and short. When the concept of tall and short was mentioned during the game, the parents were surprised that the word "no, it's big and small" came into the conversation. This functional task was achieved by combining two visualization or visual perception methods, which took up to 5 months.

3 Results and Discussion

As a result of using the task analysis method of the Portage program accordance with the individual plan for 10 months, the following progress was observed in T.N.'s social, language, self-help, and cognitive development.

Table 4. The II assessment results of the after working with T.N.'s development for each development domain

Age	Developmental domain	Social	Language	Self - Help	Cognitive	Motor	Number of completed tasks	Scoring
Total task & assessment		71	77	84	88	109	429	429
T.N. 4.2	Can do independently	55	46	68	68	99	336	336
	Can do with support	3	8	6	10	3	30	15
	Cannot do it yet	13	23	10	10	7	63	0
	Skill age	2-3	1-2	2-3	3-4	4-5		351

After working with T.N. for ten months, the following progress and changes occurred in the child's independent behavior and language development. She was shy when communicating and speaking with others; she did not know the Mongolian language and did not understand it well. She learned to say her name and age in complete sentences and "Hello" to others. She knew to say the tongue twister, "Taught by the teacher, painted by the teacher," in Mongolian by imitating her mother and teacher at home, and after 14 days, she memorized and said it on her own. When she meets or

communicates with older people or people she knows, doesn't hesitate to ask them, "How are you?" She learned to say hello, "Thank you" and "Goodbye". Her parents were delighted when she started going to kindergarten and could understand Mongolian words such as "What to do," "No," "Let's go outside," "Look," "Teacher," "Cake," and so on. The mother taught her child a small number of short syllable words in English so she could say them and understand them. She usually speaks when she wants to.

She participates in kindergarten lessons and activities, does tasks given by the teacher together, such as creating group work with classmates, doing morning exercises together, and participates in competitions and dancing. She also learned the difference between the words loud and quite, and fast and slow. She could not button and unbutton her shirt by herself yet, but she could button and unbutton her clothes during this time. Also, she could use chopsticks to eat and tissues to clean her nose.

T.N., the girl, acquired some skills not covered by the action objectives on the checklist. At first, she did not interact closely with the children; now, she followed them and played together. She quickly learns new things by drawing, gluing, and building herself. She liked playing with jigsaw puzzles, matching games, and games to find regularity. The visiting teacher and parents encouraged her every time she reflected, quickly understood, and responded, which helped the child to learn new things, and her self-confidence improved accordingly. Being very mobile, when she went outside, she did not feel that there would be any danger and would run immediately. Therefore, during this period, the child started being more stable due to using verbal and in-person support methods of the Portage program, such as pre-warning, explaining what bad things and harm will bring, controlling movement, and waiting. In general, progress in the development of M.N will support enrollment in primary school [14].

For student B.T., the following advantages were observed during the 10-month working period. First, the student attended three credit hours of classroom training. Practical training 3credit \96 hours in the home of an autistic child, in cooperation with the parents according to a pre-developed individual plan and provided real support and services + Online - 22 -24 times).

Table 5. Working mapping

	I assessment	Duration	II assessment
	2021 10.13-15	2021.10.13- 2022. 06 8 months	2022. 05.30
Frequency	1 time a week	32 times	Online time – 24 Visit-8
Working hours			
2 hours	64 hours	Online-48 Visit-16	

Findings that parent satisfaction and the provision of activities and services in the home environment led to program outcomes [15] .

Qualitative case. I study "Special Needs Education" at School of Preschool Education MNUE, for 2 credits. This course provides a 4-hour overview of the Early Developmental Support and Intervention Portage course. In the graduate course, I attended a 40-hour theoretical-methodical course of the Portage program, and then I did my internship with a disabled child. Not only the parents, but also, I am very happy that the child who has received support and assistance has made even a little progress. My TN, 4 years, and 2 months old, is waiting for my arrival. By the way, this time coincided with the situation of the epidemic, so the opening of the yavuuliinbagsh.blogspot.com blog did not hinder cooperation with parents.

From an interview with student B.T

In our research, we encountered the following problems and challenges. We faced problems when working with children and their parents online, data and networks were poor, and when a student works as a visiting teacher, she may not be

able to visit the child's home on a private day due to urgent sudden unplanned work at her school, also the assessments of the researcher and child's parents the assessing the child's initial developmental status differed. In other words, parents believe that their children are capable of doing things. Inclusion is a complex concept: researchers, policy makers, and practitioners [16]. It is suggested that the Portage teacher (researcher), visiting teacher (student), and child's parents work together to assess the child's current development using the checklist.

4 Conclusion

Using the Portage program's task analysis method, T.N. has observed developmental progress in all areas of social, self-help, language, motor and cognitive domain. As for the time to master that skill, it could take between 21 days to 9 months. Research has shown that Portage's appropriate aids, including visual, verbal assistance and physical, combination of them, are effective for children with autism. Our research shows that incorporating practicum hours into a student curriculum and providing services in the home of a child with a disability can have tangible results in effective child development.

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