

# The Impact of Movement Education Programs on the Empathy Ability of Disabled Children

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## Abstract

*The purpose of this paper is to understand and express emotions and experiences from the perspective of others through empathy, which is crucial for maintaining social relationships. The smooth formation of interpersonal relationships through the physical activity of children with disabilities holds significant meaning. Children with disabilities often lack opportunities for interaction with their peers compared to typical children, and the absence of effective communication methods poses difficulties in forming relationships. Therefore, this study aimed to investigate the effects of a movement education program on enhancing empathy in children with disabilities.*

*The program was implemented for 12 weeks from April to June 2023, involving five children with disabilities. The movement education program comprised 12 topics, encompassing physical, emotional, and cognitive domains. Empathy was measured in two areas: cognitive empathy and emotional empathy. The results indicated improvement in both cognitive and emotional empathy after the program compared to the pre-assessment. The rate of progress varied depending on the type and severity of the disability, but overall, positive changes in the development of empathy were observed. Through this research, it is hoped that movement programs can be practically utilized as a valuable resource.*

**Keywords:** *Movement Education Program, Children with Disabilities, Empathy Ability*

## 1. Introduction

To participate as a member of society, one must understand and express their own emotions, engage in smooth communication, and exchange thoughts with others <sup>[1-2]</sup>. Empathy with others is crucial for effective communication <sup>[3]</sup>. Through this, individuals develop sociability through social relationships, learn appropriate behaviors, values, knowledge, etc., from their society, and cultivate social adaptability based on these foundations <sup>[4]</sup>. Movement education programs form social relationships through nonverbal communication and express thoughts through body movements <sup>[5-6]</sup>.

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Furthermore, these programs are expected to enhance empathy and communication through nonverbal expression and contribute to the development of empathy abilities in children with disabilities, using various artistic tools to strengthen self-expression and emotion recognition <sup>[7]</sup>. This study aims to verify whether movement education programs can contribute to the development of these abilities, provide practical educational guidelines, and indirectly expose the importance of interpersonal relationships by emphasizing the need to express movements together with others. Beyond overcoming physical difficulties in children with disabilities, the goal is to enhance empathy, promote social development, and establish harmonious interpersonal relationships, ultimately facilitating social adaptation <sup>[8-10]</sup>.

## 2. Problem Statement

The research questions established to validate the research objectives are as follows: To investigate the changes in empathy before and after the participation of children with disabilities in a movement education program.

Firstly, the study examines the changes in cognitive empathy before and after the participation of children with disabilities in a movement education program.

Secondly, the study investigates the changes in emotional empathy before and after the participation of children with disabilities in a movement education program.

## 3. Research Methods

### 3.1 Research Subject

In this study, we selected children from B Disability Welfare Center residing in A city, who expressed their willingness to participate in the program after a two-week advertisement. Among the 15 children who expressed their willingness, we chose 10 children who had been diagnosed as disabled by a professional or medical expert according to the Disability Welfare Act and fell into the 1st to 3rd grades of disability. The criteria for selecting research participants are as follows.

Firstly, children with disabilities who possess a disability registration certificate. Secondly, school-aged children between 6 and 12 years old, who are subject to compulsory elementary education according to current education laws. Thirdly, children attending a disability welfare center and receiving a movement education program were selected. The personal characteristics of the research participants are outlined in Table 1.

**Table 1. Personal Characteristics of Research Participants**

Group		Type of Disability	Age
Experimental Group	Male	ADHD + Cardiovascular Disorder	10
	Female	Intellectual Disability + Down Syndrome	11
	Female	Intellectual Disability	9
	Female	Intellectual Disability	8
	Female	Intellectual Disability + Down Syndrome	8

In addition, for the research, a group of experts was assembled, consisting of one individual with a Ph.D. in Dance Studies and a certified social worker, one Ph.D. in Dance Studies, one certified social worker, two volunteers, one professor specializing in sports science, and two dance instructors for children with disabilities affiliated with the Korean Association for the Welfare of Disabled People. This expert group, totaling eight members, underwent a process of validation and review through group or individual meetings. The program was revised and refined based on their feedback, resulting in the final development of the program. The group that participated in the movement education program for children with disabilities is outlined in Table 2.

**Table 2. Education Program Group**

The Target Participants	Professional Field	Major Career and Positions	Career
A	Dance Studies, Social Welfare Studies	PhD in Dance Studies, Social Work License, Dance Education for Children with Disabilities	10yr
B	Dance Studie	Ph.D. in Dance Studies, Dance Education	25yr
C	Social Welfare Studies	Social Worker Affiliated with G Welfare Center	5yr
D	Social Welfare Studies	Currently Enrolled in the Department of Social Welfare, Engaged in Volunteer Work	4yr
E	Deaf Education	Currently Enrolled in Deaf Education, Actively Involved in Volunteer Work	4yr
F	Physical Education	Sports Education, School Physical Education	20yr
G	Social and Cultural Arts Education	Dance instructor for Children with Disabilities at the Korea Association of Welfare Facilities for the Disabled, Currently Pursuing a Master's Egree in Special Education Development and Planning of Programs for Children with Disabilities	13yr
H	Social and Cultural Arts Education	Dance instructor for Children with Disabilities at the Korea Association of Welfare Facilities for the Disabled	8yr

**3.2 The Empathy Ability of Movement Education Programs**

The movement education program implemented in this study focuses on enhancing the creative movement and empathy motivation levels of research participants, taking into consideration the specificity of the target population—children with disabilities. The program is characterized by utilizing materials to induce motivation and concentration, allowing for the expression of various themes specifically tailored for children with disabilities. Additionally, the program aims to establish peer relationships through dance arts as a means of enhancing empathy. The development and operation of the movement program were guided by expert consultations, discussions, and literature reviews to align with the goal of improving empathy in children with disabilities.

The application of the movement education program took place from April to June 2023, conducted once a week for 100 minutes each session, totaling 12 sessions. The program stages were structured into the areas of

Rapport Formation, Exploration of Empathy, Action of Empathy, and Formation of Empathy. Each session followed the teaching method of Introduction - Development - Summary. The content of the movement program is outlined in Table 3.

**Table 3. Contents of the Movement Education Program**

Area	Term	Topic	Movement Education Program
Formation of Intimacy	1	Body Navigation	Understanding one's own body parts, recognizing similarities and differences between oneself and others in terms of the body
	2	We are one	Understanding the form of connected chains and expressing them physically with the body Experiencing body contact movements together with others
	3	Frisbee	Exploring movement using materials, recognizing each other's movements through play
Exploration of Empathy	4	Lava Lava	Imagining the movement of a caterpillar, self-expression through self-esteem dance within the body socks
	5	Rain rain go away	Discovering a common topic with others about the weather, expressing imaginative movements, and transforming negative emotions
	6	Autumn Leaves and Ladybugs	Discovering a common theme with others about the seasons, experiencing the ambiance of autumn, and sharing it through movement
	7	Rainbow Snow	Exploring movements using a soft ball, expressing the emotional feel of winter, and forming a sense of connection and empathy with others
	8	German Armed Forces	Syncing breath with others, partnering to express traditional German folk dance
Acts of Empathy	9	Journey of the Bird	Expressing imaginative movements as a bird, forming a group to depict the way birds soar in the sky and creating a coordinated movement based on a shared agreement
	10	Dance like Pengsoo	Understanding Antarctic penguins, dancing together through storytelling
	11	My Wish, My Dream	Exploring a care basket, discovering movements in collaboration with others, and forming a relationship of trust
Formation of Empathy	12	Leader and Imitator	Observing others' movements and immediately reproducing them, leading each other's movements to enhance the level of communication

### 3.2.1 Implementation and Observation Records of The Movement Education Program



Figure 1. Movement education program activities

### 3.3 Survey Instruments

To investigate the impact of the movement education program on the empathy of children with disabilities, the following measurement tools were used. The survey employed in this study is the Empathic Sensitivity Test, which was adapted from previous research <sup>[11]</sup>. The Empathy Test was modified and enhanced according to the research objectives, based on the Empathic Sensitivity Test questionnaire used in previous studies <sup>[12]</sup>. This test consists of two dimensions: cognitive empathy and emotional empathy, totaling 30 items. Each item is rated on a 7-point Likert scale. Additionally, five questions related to personal characteristics (gender, grade, participation period, frequency of attendance, type of disability/developmental characteristics) were included.

## 4. Research Results

### 4.1 Pre-Post Differences for Each Measurement Item of Cognitive Empathy

The pre- and post-measurement results for the 15 cognitive empathy items before and after 12 weeks of participation in the movement education program are presented in Table 4. Upon examining the measurement results, it is observed that 13 items showed improvement in post-measurement compared to pre-measurement, one item showed a decrease, and one item remained the same. While one measurement item indicates a decrease, overall participation in the movement education program appears to enhance cognitive empathy abilities in children with disabilities.

**Table 4. Pre-Post Measurement Results of Cognitive Empathy**

NO	Cognitive Empathy	Pre-Measurement	Post-Measurement	Gap	Achievement
1	Before speaking ill of another friend, I consider how I would feel if I were that friend	3.80	4.80	1	▲
2	When reading an interesting story or novel, I imagine what would happen if the events in the story actually happened to me	4.60	4.80	0.2	▲
3	When I see a friend being taken advantage of, I feel a desire to protect that friend	4.00	5.20	1.2	▲
4	If I believe I am right, I tend not to listen to what others say*	2.80	2.20	-0.6	▼
5	I tend to vividly imagine the situations described when listening to someone else's story	3.80	4.00	0.2	▲
6	When I see someone suffering, I tend to first think about that person's perspective and situation	4.00	4.00	0	-
7	When something happens, I make an effort to consider it from as many perspectives as possible	3.20	3.60	0.4	▲
8	When watching movies or dramas, I get deeply immersed in them	5.60	5.80	0.2	▲
9	When I see someone unhappy, I often think about what would happen if I were in that situation	3.20	3.60	0.4	▲
10	Before making a decision, I listen to the opinions of others	3.60	4.00	0.4	▲
11	After watching a play or movie, I have felt as if I were the protagonist	5.00	6.00	1	▲
12	There are times when I don't understand why someone is feeling upset*	4.80	5.00	0.2	▲
13	When someone makes me angry, I make an effort to momentarily understand their perspective	3.00	3.20	0.2	▲
14	When watching a movie I enjoy, I easily put myself in the protagonist's shoes	5.40	6.00	0.6	▲
15	It seems that touching moments frequently occur in my surroundings	4.40	5.00	0.6	▲

\* Reverse-scored item

#### 4.2 Pre-Post Differences for Each Measurement Item of Emotional Empathy

The pre- and post-measurement results for the 15 emotional empathy items before and after 12 weeks of participation in the movement education program are presented in Table 5. Upon examining the measurement results, it is observed that 12 items showed improvement in post-measurement compared to pre-measurement,

two items showed a decrease, and one item remained the same. While there is a decrease in one item compared to pre-measurement, the majority of measurement items indicate an improvement in emotional empathy. This suggests that participation in the movement education program can enhance the emotional empathy abilities of children with disabilities.

**Table 5. Pre-Post Measurement Results of Emotional Empathy**

NO	Cognitive Empathy	Pre-Measurement	Post-Measurement	Gap	Achievement
1	Before speaking ill of another friend, I consider how I would feel if I were that friend	4.80	5.60	0.8	▲
2	When reading an interesting story or novel, I imagine what would happen if the events in the story actually happened to me	4.00	5.00	1	▲
3	When I see a friend being taken advantage of, I feel a desire to protect that friend	5.60	5.60	0	▲
4	If I believe I am right, I tend not to listen to what others say*	4.40	4.80	0.4	▲
5	I tend to vividly imagine the situations described when listening to someone else's story	4.60	5.20	0.6	▲
6	When I see someone suffering, I tend to first think about that person's perspective and situation	4.60	5.20	0.6	▲
7	When something happens, I make an effort to consider it from as many perspectives as possible	5.00	3.60	-1.4	▼
8	When watching movies or dramas, I get deeply immersed in them	5.00	6.80	1.8	▲
9	When I see someone unhappy, I often think about what would happen if I were in that situation	3.40	3.00	-0.4	▼
10	Before making a decision, I listen to the opinions of others	6.60	6.80	0.2	▲
11	After watching a play or movie, I have felt as if I were the protagonist	6.20	6.60	0.4	▲
12	There are times when I don't understand why someone is feeling upset*	4.00	4.40	0.4	▲
13	When someone makes me angry, I make an effort to momentarily understand their perspective	3.60	3.60	0	-
14	When watching a movie I enjoy, I easily put myself in the protagonist's shoes	5.20	6.40	1.2	▲
15	It seems that touching moments frequently occur in my surroundings	5.80	6.00	0.2	▲

\* Reverse-scored item

### 4.3 Pre-Post Comparison of Cognitive Empathy and Emotional Empathy

The comparison of pre- and post-measurements for cognitive empathy and emotional empathy, based on the summation of scores for each of the 15 measurement items for cognitive empathy and emotional empathy, is illustrated in Figures 1 and 2, respectively. Specifically, cognitive empathy showed an improvement from 3.13 before participating in the dance program to 3.53 after the program, indicating a 0.4-point increase. Emotional empathy also demonstrated improvement from 3.93 before the dance program to 4.27 after the program, indicating a 0.34-point increase. Both cognitive empathy and emotional empathy, assessed through the summation of scores for individual items, showed improved scores after participation in the dance program compared to before, suggesting that the dance program contributes to enhancing empathy in children with disabilities.

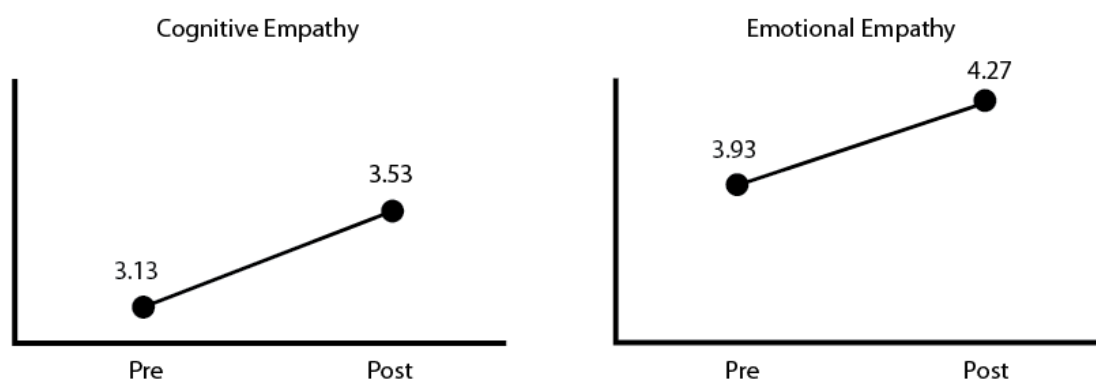


Figure 2. Pre-post comparison of cognitive empathy and emotional empathy

## 5. Conclusion

This study applied a movement education program to children with disabilities to analyze its effectiveness in enhancing empathy. The following conclusions were drawn: After a 12-week movement education program, there was a significant increase in post-measurements of cognitive and emotional empathy compared to pre-measurements, indicating that the program contributes to improving empathy. The progress rate varied based on the type and severity of disabilities in children, but overall, positive changes in empathy formation were observed.

In summary, the results indicate a positive impact of a 12-week movement education program on enhancing empathy in children with disabilities. This aligns with the findings of Shin & Joo (2018) who demonstrated that the application of integrated art therapy programs for children with developmental disabilities also improved empathy [13]. Therefore, based on this research, it is believed that it provides a foundation for recognizing the importance of movement programs in enhancing empathy in children with disabilities and can serve as a starting point for subsequent research aimed at developing effective movement education programs for improving empathy. We hope that this study contributes to a deeper understanding of children with disabilities in educational program settings and becomes a practical resource for the implementation of movement programs.



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