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ORIGINAL ARTICLE 8

# **The Characteristics of Children with Physical Disabilities and the Curriculum and Teaching Method for Them in the Special Needs Education**

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## **ABSTRACT**

In South Korea, children with physical disabilities have held relatively higher proportion of children with disabilities and also have grown larger every year. Reviewing the characteristics of children with physical disabilities and the curriculum for them and exploring the teaching methods are significant to provide proper education to children with physical disabilities. This study aims to understand the characteristics and current situation of children with physical disabilities and to review the curriculum and teaching methods for them. For the research method, literature review of precedent studies was employed.

Children with physical disabilities means that there are permanent disabilities of one arm, one leg or the trunk of body and the types of disabilities ranked joints, paralysis, amputation and malformation according to the frequency of occurrence in descending order. It was found that physical disabilities are mostly not inherent, but acquired by diverse disease. Children with physical disabilities have unique psychological, pathological and physiological characteristics including passive, depressed, aggressive and withered attitudes; children with inherent motor disabilities may have communication problems. Moreover, as they have difficulty in moving, they take advantage of walking stick, manual wheelchair, electric wheelchair, crutches and walker.

The special needs education for children with physical disabilities needs properly transformed teaching-learning method to their characteristics, which requires proper educational environment. There are additional supports including physical therapy, occupational therapy, speech therapy, artificial limb, assisting devices, and equipments

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for learning and living for the education of children with physical disabilities.

Currently there is not small number of students to appeal maladjustment to school if among the children with physical disabilities attending schools, because of the lack of understanding of teachers and peers, etc.; urgently they need to be given supports. To solve the problems of maladjustment to school life, teachers in charge of the education of children with physical disabilities have to be given specialized training to enable them to know and understand the characteristics of children with physical disabilities thoroughly and children without disabilities have to be given educational programs to enable them to understand peers with physical disabilities and to be equipped with cooperative and congenial attitude to them. In addition, the curriculum needs to be changed according to the capacities and characteristics of children with physical disabilities and diverse studies about it have to be carried out.

#### < Key-words >

Characteristics of children with physical disabilities, Curriculum for children with physical disabilities, Teaching methods for children with physical disabilities.

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## I . Introduction

In South Korea, children with physical disabilities have held relatively higher proportion of children with disabilities and also have grown larger every year. The degrees of disabilities that children with physical disabilities have may be mild or very severe and their intellectual abilities may be lower or higher or normal compared with children without disabilities. Moreover, their disabilities may be inherent or acquired since their births. Proper education needs to be implemented to enable children with physical disabilities to take advantage of their potential abilities and to live independently among people without disabilities (Hea-Dong JEONG 1998).

The special needs education for children with physical disabilities has focused mainly on children with cerebral palsy and they have also the same needs with children without disabilities. However, they are more likely to feel frustration due to the disabilities of body and verbal expression, to show social and emotional maladjustment and to establish negative self-conception; they seems to present the sense of inferiority, helplessness, anxiety and stubbornness noticeably. In addition, children with physical disabilities have abnormal shapes of body as well as motor function disorder and their developments tend to be greatly differentiated between individuals and unsteady(Eun-Hye PARK 1998).

Curriculum of the schools for physical and multiple disabilities was established based on the premise that they can be educated with the same level of children without disabilities if they are given support for physical disabilities, but since 1984, the

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curriculum of the schools for children with physical disabilities was separately made. At this time, activities for therapeutic education was implemented as the name of 'rehabilitation training' in the schools for physical and multiple disabilities. Even though the educational environment has been provided owing to the implementation of the 7<sup>th</sup> curriculum of special education in 2000, there have been problems to apply the National Common Basic Curriculum because of the tendency that the degrees of disabilities of students who enter special schools for physical disabilities have been more severe and the number of disabilities that they have increased; owing to the implementation of the 7<sup>th</sup> curriculum of special education, students became to be able to select the curriculum that they need and want to theoretically.

The special needs education for children with physical disabilities has been changed and there have been difficulties in planning and establishing the curriculum to be adjusted for students as the degrees of disabilities of students have been more severe and the number of disabilities that they have have increased. To deal with this situation, the review of the characteristics of children with physical disabilities and the curriculums for them and the proper teaching methods for them need to be preceded. Therefore, this study intends to understand the characteristics and current situations of children with physical disabilities and to review the teaching methods for them.

## II. The Characteristics of Children with Physical Disabilities

Children with physical disabilities cannot live independently because of the functionally abnormal part(s) of body; because of the functional disorders of truncus and extremities, they cannot carry out daily living activities comfortably and are expected to have great difficulties in making their living in the future (Seung-Chul KWAK et al 1999).

The characteristics of children with physical disabilities are as follows:

### 1) Psychological Characteristics

One of the most difficult tasks for children with physical disabilities is the adjustment in the aspect of personality (Kirk, S.A 1972).

Physical disabilities have great effects on the emotional development of children with physical disabilities while growing up. Extreme pains caused by surgery and hospitalization and hospital treatment affect the personality of children and their school life. The supports of teachers, family and friends who understand the emotions and behaviors of children with physical disabilities are required, as they present passive attitude that is called as learned helplessness due to the high degree of physical dependency on others and the students with terminal diseases including progressive muscular dystrophy<sup>1</sup> are likely to present depression, aggression and withered attitude.

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<sup>1</sup>Progressive muscular atrophy and dystrophy is the disease to cause the muscular atrophy due to retroplasia of motor nerve fiber attacking psoas muscle, upper arm, facial muscle, etc. This disease progresses in both sides of

The children with acquired mental disabilities due to accidents are put under great stress to overcome the sadness and adjust to changed life, because they greatly feel the sense of loss from the past physical abilities and life styles (Eun-Hye PARK 1998).

In addition, they also tend to struggle with the problems of personality caused by the limited motions, abnormal posture, parents' attitude, etc.; they are likely to have the sense of inferiority because of excessive sensibility of parents and acquaintances for their abnormal body conditions; they also struggle with frustration due to the deterrence of needs that is caused by the limitation of movement. Because of these problems, they are more likely to present violence, autistic attitude, emotional anxiety or maladjustment (Seung-Chul KWAK et al 1999).

Cruickshank(1976) mentioned that man students with physical disabilities adjust to their unique life styles well and know how to adapt to the frustrating situations. When they feel that they are inferior to others by being excessively aware of their own disabilities or when they just accept this kind of judgement, they became to have a bad opinion of themselves (Seung-Chul KWAK 1989).

For this opinion, Kirk,S.A(1972) explains the personality and their characteristics of social adjustment of children with physical disabilities as follows:

First, children with physical disabilities are more likely to present maladjustment behaviors than children without disabilities. Second, the maladjustment behaviors of children with physical disabilities might be discovered from children without disabilities. Third, there are no clear proofs for the relationship between specific disabilities and specific maladjustments. Students with different disabilities may present same types of problem behaviors and students with same abilities may present very different problem behaviors. Fourth, children who have had physical disabilities for longer period tend to show more maladjusted behaviors and persons who became disabled in adolescent and adult periods tend to be less affected to their personality. Fifth, parents' attitudes for children with physical disabilities can appear to be overprotective and rejection and show extreme tendency, etc. and over protectiveness may put more pressure on the achievement of children than other attitudes.

From the explanation mentioned above, it is noticed that the characteristics of children with physical disabilities are not quite different from those of children without disabilities. However, it is true that children with physical disabilities are exposed to the personal and situational factors to raise abnormal mentality. Beside, because children with physical disabilities also have needs for self-esteem and superiority, they may be frustrated by the psychological contradiction and conflicts. Physical disabilities easily tend to be deplorable subjects due to the attitude of society. As long as the strong attitude of society that considers physical disabilities as unhappy and unlucky exists, children

body accompanying with cataplexy. It is contracted inherently and the attack rate of male children is three times of that of female children. It is usually found by the symptom of gait disorder and it affects whole body gradually. There is no perfect cure and the patients of progressive muscular atrophy are more likely to die around 20's, but their life expectancy has increased owing to the improvement of the standard of living.

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with physical disabilities are easily given negative value that affects their self-conception (Sun-Ok PARK 1999).

In summary, children with physical disabilities may have diverse intellectual and emotional disorders, which may raise the social isolation to negatively affect their social adjustment. Therefore, educational activities in schools have to aim to the development of their whole-personality that comprehends all physical and psychological aspects.

## **2) Intellectual Characteristics**

Except children with cerebral palsy, most of children with physical disabilities have similar level of intelligence with children without disabilities. Among children with cerebral palsy, there are students (40-60%) with intellectual impairment and students with normal or excellent level of intellectual potential. Children with cerebral palsy are likely to have lower intelligence than children without disabilities. Nelson and Ellenberg(1986)asserted that IQ of 41% of children with cerebral palsy are 70 or under and Verhaaren and Connor(1981) estimated that one third of children with cerebral palsy have normal or higher IQ. However, these kinds of estimation need to be carefully translated.

Levin (1986) pointed out that children with cerebral palsy are disturbed by movement disorder and speech-language disorder when they are examined with standardized IQ test. Therefore, IQ scores cannot be utilized as the only data to interpret the real or potential abilities of students. It needs to be clarified that there are no significant relationship between the degrees of movement disorder and intellectual disorder of children with cerebral palsy. Children with mild degree of movement disorder may have severe degree of developmental delay and children with severe degree of movement disorder may have excellent intelligence (Heward 1996).

Some children with physical disabilities cannot manage school life normally because they have to be hospitalized, visit doctors for treatment or take a rest at home. Even though they have normal intelligence and are motivated to study, they may be behind their peers at school. Children with mild degree of physical disabilities are not behind their peers at school and a few of children with severe health impairment show high level of academic achievement.

## **3) Communicational Characteristics**

85 -90% of children with cerebral palsy who hold most of children with physical disabilities have language and communicational disorder. These communicational disorders vary from articulation disorders and the disorders of articulatory organs and are differentiated according to the types of cerebral palsy.

Excluding students with cerebral palsy, most of children with physical disabilities who have inherent movement disorders may have difficulty in communication. For example,

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even though students with arthrogryposis multiplex congenita<sup>2</sup>generally have normal ability of speech and language, they have difficulty in writing because they cannot hereditarily use arms at their will. Students with Osteogenesis imperfect<sup>3</sup> have difficulty in communication by writing due to frequent fractures. Students with muscular dystrophies<sup>4</sup> also have difficulty in writing due to the low functionality of arms and some of them may struggle with speaking due to the muscle weakness of oral cavity (Hea-Dong JEONG 1998).

### III. The Current Situation of Persons with Physical Disabilities in South Korea

#### 1) The Disabled Body Parts of Persons with Physical Disabilities

The disabled body parts of persons with physical disabilities rank lower extremities (47.2%), spinal cord injury (24.3%), upper extremities (21.0%), upper and lower extremities (5.7%), spinal cord injury + upper and lower extremities (1.3%) and dwarfism (0.4%) in descending order. It was found that there is the distinction of sex among the disabled body parts; while males tend to have more disabilities of one side of lower extremity (36.1%) and one side of upper extremity (26.2%) than females; females tend to have more disabilities of spinal cord injury (31.5%) and both sides of lower extremities (21.0%)(See Table 1).

Table 1. Disabled Body Parts of Persons with Physical Disabilities

(Unit: %, Number of Persons)

Body Parts		Male	Female	Total
Upper extremity	One side of extremity	26.2	9.6	19.3
	Both sides of extremity	1.9	1.4	1.7
Lower extremity	One side of extremity	36.1	28.5	32.9
	Both sides of extremity	9.6	21.0	14.3
Upper and lower extremities	One side of upper and lower extremities	3.5	3.8	3.6
	Both sides of upper and lower extremities	1.6	2.2	1.8
	One side of upper extremity+Both sides of	0.2	0.2	0.2

<sup>2</sup>Arthrogryposis multiplex congenita (AMC) refers to a variety of conditions that involve congenital limitation of joint movement. Intelligence is relatively normal except when the arthrogryposis is caused by a disorder or syndrome that also affects intelligence ([www.merckmanuals.com](http://www.merckmanuals.com)).

<sup>3</sup>Osteogenesis imperfecta (OI) is a hereditary collagen disorder causing diffuse abnormal fragility of bone and is sometimes accompanied by sensorineural hearing loss, blue sclerae, dentinogenesis imperfecta, and joint hypermobility ([www.merckmanuals.com](http://www.merckmanuals.com)).

<sup>4</sup>Muscular dystrophies are inherited, progressive muscle disorders resulting from defects in one or more genes needed for normal muscle function. They are distinguished by the selective distribution of weakness and the specific nature of the genetic abnormality involved ([www.merckmanuals.com](http://www.merckmanuals.com)).

	lower extremities			
	Both sides of upper extremities+One side of lower extremity	0.0	0.3	0.1
Spinal cord injury		19.2	31.5	24.3
Spinal cord injury + Upper and lower extremities	Spinal cord injury+ One side of upper extremity	0.3	0.0	0.2
	Spinal cord injury+ One side of lower extremity	0.3	0.3	0.3
	Spinal cord injury+ Both sides of lower extremities	0.4	0.5	0.4
	Spinal cord injury+ Both sides of upper and lower extremities	0.5	0.3	0.4
Dwarfism		0.3	0.5	0.4
Total		100.0	100.0	100.0
National Estimation of Persons with Disabilities		684,454	485,016	1,169,470

Source: National Survey on Persons with Disabilities, Korea Institute for Health and Social Affairs(2008)

In the results of the research on the types of disabilities of person with physical disabilities by dividing them four categories such as amputation, paralyses, joints and malformation, the types of disabilities of them rank joints (60.9%), paralyses (18.8%), amputation (13.3%) and malformation (7.0%) in descending order(See Table 2).

Table 2. The Types of Disabilities of person with Physical Disabilities

(Unit: %, Number of Persons)

Types	Male	Female	Total
Amputation	19.5	4.7	13.3
Paralyses	21.6	14.8	18.8
Joint	53.0	72.0	60.9
Malformation	5.9	8.5	7.0
Total	100.0	100.0	100.0
National Estimation of Persons with Disabilities	684,454	485,016	1,169,470

Source: National Survey on Persons with Disabilities, Korea Institute for Health and Social Affair(2008)

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## 2) Onset of Disabilities of Persons with Physical Disabilities

Most of persons with physical disabilities experienced the onset of disabilities after one year old, which shows that their disabilities are not hereditary, but mainly acquired. Table 3 shows the specific data of the onset of disabilities of children with physical disabilities by age.

Table 3. Onset of Disabilities of person with Physical Disabilities

(Unit: %, Number of Persons)

Onset	Male	Female	Total
Before birth or at birth	1.3	2.0	1.6
Before one year old	0.6	1.5	1.0
After one year old	98.1	96.5	97.4
Total	100.0	100.0	100.0
National Estimation of Persons with Disabilities	684,454	485,016	1,169,470

Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

Even though, in case of acquired disabilities, the onset rate of disabilities of person with physical disabilities increases after 20 years old, there are not big differences among the onset rates throughout all ranges of age. However, there are distinctions of sex of the onset rate; the onset rate of males is higher from 30's to 50's; the onset rate of females increases after 40's; in case of after 50's, the onset rate of females is higher than that of males. These results may explain the cause of disabilities; males tend to acquire physical disabilities while they actively work, but females tend to acquire them in the situations related to housework(See Table 4).

Table 4. Onset of Acquired Disabilities of Persons with Physical Disabilities

(Unit: %, Number of Persons)

Onset	Male	Female	Total
1 to 4	4.7	7.3	5.8
5 to 9	1.9	2.6	2.2
10 to 19	9.4	2.0	6.4
20 to 29	12.6	6.2	10.0
30 to 39	18.2	9.1	14.5
40 to 49	19.4	13.5	17.0
50 to 59	16.2	20.6	18.0
60 to 69	13.9	26.6	19.1
70 and over	3.7	12.1	7.1
Total	100.0	100.0	100.0

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National Estimation of Persons with Disabilities	671,437	467,898	1,139,335
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Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

### 3) The Causes of Disabilities of Persons with Physical Disabilities

It was found that 96.7% of physical disabilities were acquired by diverse diseases or accidents and only small ratio of physical disabilities are inherent or acquired at birth or by unknown causes(See Table 5).

Table 5. The Causes of Disabilities of Persons with Physical Disabilities

(Unit: %, Number of Persons)

Causes		Male	Female	Total
Inherent		2.4	2.8	2.5
Acquired at birth		0.1	0.4	0.2
Acquired	Disease	31.9	65.8	46.0
	Accident	65.2	30.3	50.7
Unknown cause		0.4	0.7	0.5
Total		100.0	100.0	100.0
National Estimation of Persons with Disabilities		684,454	485,016	1,169,470

Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

As for the causes of acquired disabilities, it was found that physical disabilities occur by accidents (52.5%) more than by diseases (47.5%). As compared with the data of 2005(disease 39.7%, accidents 60.4%), the physical disabilities caused by diseased increased 7.8%, but those by accidents decreased 7.9%. This may be caused by the decrease of accidents including traffic accidents and the increase of physical disabilities by chronic diseases and aging phenomenon.

Musculoskeletal disease (35.7%) was the main cause among the diseases to produce disabilities and other accidents and trauma (24.8%) was the main cause among the accident; traffic accidents(passengers + pedestrians) caused 18.5% of physical disabilities. It was found that, while 32.8% of physical disabilities of males and 68.6% of females were caused by diseases, 67.2% of physical disabilities of males and 31.4% of females were caused by accidents(See Table 6).

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Table 6. The Causes of Acquired Disabilities of Persons with Physical Disabilities

(Unit: %, Number of Persons)

Causes			Male	Female	Total
Acquired Disabilities	Diseases	Nervous diseases	2.0	0.8	1.5
		Cardiovascular diseases	1.3	2.8	1.9
		Metabolic, immunological and endocrine diseases	0.7	0.5	0.6
		Musculoskeletal disease	22.8	54.1	35.7
		Neoplasia diseases	0.4	1.2	0.7
		Toxic diseases	0.0	0.0	0.0
		Infectious diseases	5.2	8.6	6.6
		Unknown causes	0.4	0.6	0.5
	Accidents	Accidents by violence	0.1	0.2	0.2
		Domestic accidents	4.6	5.6	5.0
		Traffic accidents(passengers)	12.6	7.7	10.6
		Traffic accidents(pedestrians)	10.0	5.0	7.9
		Accidents during sports and swimming	3.2	1.2	2.4
		Burn	1.2	1.5	1.3
		Adverse drug reaction	0.4	0.0	0.2
		Other accidents and trauma	35.0	10.2	24.8
		Others	0.0	0.0	0.0
		Total			100.0
National Estimation of Persons with Disabilities			664,546	466,021	1,130,567

Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

#### 4) Main Diagnoses of Disabilities of Persons with Physical Disabilities

Main diagnoses to cause physical disabilities rank musculoskeletal diseases (33.6%), fracture (18.5%), amputation (13.5%) and arthritis (12.6%) in descending order; other diseases including nerve damage, paralysis, ligament damage, deformation, etc. held 9.4%. While physical disabilities of males were more likely to be caused by fracture and amputation than those of females, physical disabilities of females were mainly likely to be caused by musculoskeletal diseases and arthritis(See Table 7).

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Table 7. Main Diagnoses of Disabilities of Persons with Physical Disabilities

(Unit: %, Number of Persons)

Diagnoses	Male	Female	Total
poliomyelitis	4.6	6.3	5.3
Spinal cord impairment	2.0	0.9	1.6
Arthritis	5.6	22.4	12.6
Tumor(cancer)	0.2	1.2	0.6
Amputation	19.5	4.9	13.5
Neuromuscular diseases	4.9	1.3	3.4
Musculoskeletal diseases	28.5	40.7	33.6
Fracture	21.8	13.9	18.5
Unknown	1.2	2.1	1.6
Others	11.6	6.2	9.4
Total	100.0	100.0	100.0
National Estimation of Persons with Disabilities	684,451	485,016	1,169,467

Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

#### IV. Special Needs Education for Children with Physical Disabilities in South Korea

##### 1) Curriculum for Children with Physical Disabilities in the Special Needs Education

The history of the changes and development of special needs education curriculum including the curriculum for children with physical disabilities is as follows;

During the 1<sup>st</sup> stage, the curriculum of schools for the blind and the deaf, the curriculum of elementary schools for children with mental retardation and the curriculum of the school for the physical and multiple disabilities were established. During the 2<sup>nd</sup> stage, the curriculum of special support schools was revised in all its aspects and, in the schools for physical disabilities, therapeutic education was implemented as the name of 'rehabilitation training'. During the 3<sup>rd</sup> stage, the 6<sup>th</sup> revision of the curriculum of special support school was done and physical disabilities called 'activity for rehabilitation training' in school. During the 4<sup>th</sup> stage, the 7<sup>th</sup> revision of the curriculum of special support school was done. The subjects related to occupation were actualized and diversified reinforcing the vocational education for the adjustment to society in the future and common vocational subjects were presented. Even though the educational environment that students became to be able to select the curriculum that they need and want to theoretically has been provided owing to the implementation of the 7<sup>th</sup> curriculum of special needs education, there have been problems to apply the National Common Basic Curriculum because of the tendency that the degrees of disabilities of students who enter special support schools for physical disabilities have been more severe and the

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number of disabilities that they have have increased. To solve these problems, Special Needs Education Promotion Law, which has been the basis for special needs education until then, was abolished and Act on Special Needs Education for Disabled Persons, etc. was enforced; according to the new Act, the term of 'service related to special needs education' started to be used (White Paper of Special Education, 2010)(See Table 8).

Table 8. The History of the Curriculum for Children with Physical Disabilities

Stages and Period	Contents
1 <sup>st</sup> Stage (1945 to 1984)	<ul style="list-style-type: none"> <li>- Established the curriculum of schools for the blind and the deaf</li> <li>- Established the curriculum of elementary schools for children with mental retardation in 1974</li> <li>- Established the curriculum of the school for the physical and multiple disabilities in 1983</li> <li>- Therapeutic education was renamed to the nursing and training, rehabilitation training, etc.</li> <li>- The curriculum has been diversified in the aspects of contents and methods.</li> </ul>
2 <sup>nd</sup> Stage (1985 to 1992)	<ul style="list-style-type: none"> <li>- The curriculum of special support schools was revised in all its aspects.</li> <li>- In the schools for physical disabilities, therapeutic education was implemented as the name of 'rehabilitation training'.</li> </ul>
3 <sup>rd</sup> Stage (1993 to 1999)	<ul style="list-style-type: none"> <li>- The 6<sup>th</sup> revision of curriculum of special support school was done.</li> <li>- physical disabilities calle'activity for rehabilitation training' in school.</li> <li>- The curriculum mainly included sensory-perceptual training, speech-language training, vocational training, physical training, training for physical activity, social and psychological training.</li> <li>- The contents of curriculum were qualitatively improved.</li> <li>- The flexible operation of activities for therapeutic education was disabled.</li> <li>- Diverse needs of children with severe and multiple disabilities were reflected.</li> </ul>
4 <sup>th</sup> Stage (2000 to 2008)	<ul style="list-style-type: none"> <li>- The 7<sup>th</sup> revision of curriculum of special needs education was done.</li> </ul>

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	<ul style="list-style-type: none"> <li>- Uniformed activities of therapeutic education centering on the types of disabilities were rejected.</li> <li>- Diverse names of activities in each type of disabilities were unified to activity of therapeutic education.</li> <li>- Eight kinds of trainings have been implemented; speech-language therapy, auditory training, physical therapy, vocational therapy, sensory-motion-perceptual training, training for psychological and behavioral adjustment, gait training and daily living training.</li> <li>- National Common Basic Curriculum and elective-centered curriculum were introduced for inclusive education.</li> <li>- The subjects related to occupation were actualized and diversified reinforcing the vocational education for the adjustment to society in the future.</li> <li>- Common vocational subjects were presented.</li> <li>- Problems to apply the National Common Basic Curriculum were proposed.</li> </ul>
5 <sup>th</sup> Stage (Since 2009)	<ul style="list-style-type: none"> <li>- Special Needs Education Promotion Law was abolished.</li> <li>- Act on Special Needs Education for Disabled Persons, etc. was enforced.</li> <li>- The term of 'service related to special needs education' was used.</li> </ul>

Source: Revised from White Paper of Special Needs Education of Korea National Institute for Special Education(2010)

## 2) Teaching Methods for Children with Physical Disabilities in Special Needs Education

### A. Teaching-Learning Method

Whether teaching-learning method can be properly modified depending on the disabilities of student is a key factor for successful special needs education. Therefore, teachers who are in charge of children with physical disabilities need to know what teaching-learning method and how to modify it.

Teaching-learning method of children with physical disabilities is based on the process of task analysis. The most properly individualized educational goals for students need to be established based on the results of the evaluation of the abilities of students with the tasks subdivided through the task analysis. Then, learning is planned based on the subdivided tasks that students couldn't perform and teaching can be begun. Based on the task analysis, the courses of each stage to perform target tasks can be prepared by dividing subdivided tasks into smaller tasks. In the process of performing subdivided tasks, teachers determine the degree and methods of supports for students to develop independence as much as possible. The records of subdivided tasks is used for the curriculum to suggest necessary skills and activities for students and the records of

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students' performance in each stage is also used to evaluate the efficiency of teaching-learning process (Hea-Dong JEONG 1998).

When teaching children with physical disabilities in regular classes, the matters to be especially attended to are as follows:

First, individualized education plans that are proper for students needs to be established based on the educational analysis. Educational plans need to be made, after determining the capacity of students through comprehensive analyses and reviews based on the exact diagnosis and research on viability, physical condition, family background, learning ability, personality, etc.,

Second, physical problems need to be sufficiently considered. Physical disabilities are produced by diverse causes presenting diverse symptoms through diverse parts of body. In recent, most of educational subjects are children with cerebral palsy. These children with cerebral palsy have multiple disabilities including motor function disorder, abnormal brain wave, epilepsy, hearing and visual disorder, perception disorder, language disorder, etc.; these physical characteristics need to be known specifically.

Third, advices of medical doctors for teaching and treatment methods need to be found. Advices of medical doctors for teaching and treatment methods are devised to prevent secondary disabilities and to develop remaining abilities

Fourth, teachers need to be guided to gain trust. Teaching for children with physical disabilities essentially aim to remove anxiety and strain. Children with physical disabilities need to trust teachers and to actively interact with others.

## **B. Establishment of Educational Environment**

The ways to establish the environment for the proper education for children with physical disabilities in regular schools are suggested as follows:

First, teachers need to understand children with physical disabilities well, to studies productive class management methods, and to explore and practice the methods and skills for class management. Assistants for special needs education need to help teachers practice the methods and skills for class management well by giving them supports.

Second, facilities and researches for the disabilities of students need to be considered.

Third, services related to special needs education can be considered positive in school or environment that those services can be applied, even though those services do not reach the level of special needs education services in special support schools.

Fourth, when students without disabilities attempt to approach with cooperative and friendly attitudes, unnecessary supports or behaviors that may cause rejection or dependence need to be avoided.

Fifth, overprotectiveness or excessive completion needs to be avoided in order to develop remaining abilities. In addition, special counseling during school life is required.

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### **C. Teachings related to the Education for Children with Physical Disabilities**

#### **① Physical Therapy·Vocational Therapy·Speech-Language Therapy**

There are students who need physical and vocational therapy among children with physical disabilities. Physical therapy room, vocational therapy room and speech-language therapy where equipments are furnished need to be installed to schools with students who require those therapies.

#### **② Prosthesis·assisting devices·Equipment for Learning and living**

There are students who take advantage of prosthesis or assisting devices. Prosthesis is an artificial substitute for a part of the body that is missing and assisting devices are the devices to replace the functions that do not exist through body. Teachers need to know the functions of prosthesis and assisting devices and how to use them, to understand what the students can and cannot do and to cooperate with professionals of prosthesis and assisting devices to help students who use prosthesis and assisting devices. Specially devised equipments are required to help children with physical disabilities learn and live conveniently.

#### **③ Placement**

Children with physical disabilities need to be placed according to the degrees and types of disabilities, available services in community and medical prognosis of disabilities (Seung-Kook KIM 1996). Most of children with mild and moderate degrees of physical disabilities have been included in regular classes together with children without disabilities; while children with physical disabilities learn in regular classes, they can get supports by visiting resources room only when they need supports. Students may be given not only services for development or course works, but also physical, language and vocational therapies in the resource room or therapy room by teachers or itinerant teachers. Students with physical disabilities may be educated at home by parents or itinerant teachers when they cannot go to school because of severe physical disabilities or when they live in the areas where there is proper school or when they stay at home temporarily, even though they are affiliated with school.

While children with physical disabilities are hospitalized for examination or treatment, they may be educated in hospital. The education in hospital may be implemented in hospital classes or hospital schools that are installed already or it can be taken charge by itinerant teachers. For the children who have too severe physical disabilities to be taken care of at home, they may be taken into care to and be educated in residential institute.

### **3) The Current Situation of Children with Physical Disabilities**

Based on the results of the 2008 survey of actual condition of special needs education that is performed at three years intervals in South Korea, among the 66,885 subjects of special needs education, there are 8,410 children with physical disabilities (See Table 9).

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Table 9. Distribution of the Subjects of Special Needs Education

(Unit: Number of Persons and institutes)

Special Support and Regular Schools	Kinds of schools	Disability	2008
Total	Total	Number of Institutes	9,681
		Number of Students	66,885
		Number of Students with Physical Disabilities	8,410
Special Support Schools	Total	Number of Institutes	520
		Number of Students	21,550
		Number of Students with Physical Disabilities	3,028
	Kindergartens	Number of Institutes	116
		Number of Students	970
		Number of Students with Physical Disabilities	196
	Elementary Schools	Number of Institutes	138
		Number of Students	7,422
		Number of Students with Physical Disabilities	1,387
	Middle Schools	Number of Institutes	136
		Number of Students	6,323
		Number of Students with Physical Disabilities	772
	High Schools	Number of Institutes	130
		Number of Students	6,835
		Number of Students with Physical Disabilities	673
Special Classes of Regular Schools	Total	Number of Institutes	4,764
		Number of Students	35,637
		Number of Students with Physical Disabilities	3,196
	Kindergartens	Number of Institutes	203
		Number of Students	679
		Number of Students with Physical Disabilities	127
	Elementary Schools	Number of Institutes	3,120
		Number of Students	21,665
		Number of Students with Physical Disabilities	2,106
	Middle Schools	Number of Institutes	1,007
		Number of Students	7,736
		Number of Students with Physical Disabilities	596
	High Schools	Number of Institutes	434
		Number of Students	5,557
		Number of Students with Physical Disabilities	367

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Full Inclusive Education	Total	Number of Institutes	4,397
		Number of Students	9,698
		Number of Students with Physical Disabilities	2,186
	Kindergartens	Number of Institutes	914
		Number of Students	1,543
		Number of Students with Physical Disabilities	252
	Elementary Schools	Number of Institutes	1,678
		Number of Students	3,376
		Number of Students with Physical Disabilities	853
	Middle Schools	Number of Institutes	940
		Number of Students	2,127
		Number of Students with Physical Disabilities	473
	High Schools	Number of Institutes	865
		Number of Students	2,652
		Number of Students with Physical Disabilities	608

Source: Survey of Actual Condition of Special Needs Education, Korea National Institute for Special Needs Education(2008)

Remark 1: The subjects of special needs education are the students who require special needs education among persons with disabilities who are included to the database of registered disabled persons, namely, the students who are selected as the subjects of special needs education and who are attending special support schools or being taught in special classes or regular classes of regular schools.

Remarks 2: The number of children with physical disabilities who are currently nursery care service was excluded.

As for the degree of adjustment of children with physical disabilities to school life or as a whole, 85.8% answered that they are well-adjusted to school life and 10.9% answered that they are never adjusted to school life(See Table 10).

Table 10. The Degree of Adjustment of Children with Physical Disabilities to School Life

(Unit: %, Number of Persons)

Degrees	Children with Physical Disabilities	Total number of the subjects of Special Needs Education
Very well-adjusted	0.0	1.4
Well-adjusted	3.2	18.3
Not well-adjusted	85.8	69.5
Never adjusted	10.9	10.8
Total	100.0	100.0

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National Estimation	11,080	80,763
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Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

Remark: Number of children with physical disabilities who are currently given nursery care services among persons with disabilities who live at home was included.

As for the problems to disturb the school life of children with physical disabilities, 33.5% answered that no problem exists, 21.4% the lack of understanding of teachers and 18.1% the lack of understanding of friends respectively(See Table 11).

Table 11. Problems of School Life of Children with Physical Disabilities

(Unit: %, Number of Persons)

Problems	Children with Physical Disabilities	Total number of the subjects of Special Needs Education
The lack of understanding and the teasing of friends	18.1	20.6
The lack of understanding and the prejudice of teachers	21.4	6.8
Excessive attention of teachers	-	-
Keeping up with the progress of classwork	8.0	34.6
Discomfort to utilize educational equipment	2.4	1.9
Inadequacy of educational contents	0.0	2.8
Participation in cleaning or school activities	8.2	2.2
The lack of specialized teachers	6.1	8.2
Absence of assistants for special education	0.0	3.6
The lack of convenient facilities in schools	0.0	1.4
Inconvenience to commute between home and school	2.4	2.5
No problem exists.	33.5	15.2
Others	0.0	0.2
Total	100.0	100.0
National Estimation	11,080	80,763

Source: Survey on Actual Condition of Special Education, Korea National Institute for Special Education(2008)

Remark: Number of children with physical disabilities who are currently given nursery care services among persons with disabilities who live at home was included.

56.7% of respondents answered that they want rehabilitative treatment services for

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children with physical disabilities to be expanded and 30% answered that they want the supports for advanced education to be reinforced; 13.0% answered that they want the support system for the livelihood of the children who are left alone by the loss of ability to support them due to very old age or the bereavement of parents to be established (See Table 12).

Table 12. Things to be needed most for future education

(Unit: %, Number of Persons)

	Children with Physical Disabilities	Total number of the subjects of Special Needs Education
Reducing medical expenditure	0.0	6.6
Expanding the nursing facilities only for children with physical disabilities	0.0	7.5
Expanding free special education services	0.0	25.1
Expanding rehabilitative treatment services for children with physical disabilities	56.7	21.6
Expanding family support services for children with physical disabilities	0.0	4.6
Reinforcing the supports for advanced education	30.4	13.8
Establishing the support system for the livelihood of the children who are left alone by the loss of ability to support them due to very old age or the bereavement of parents	13.0	20.9
Total	100.0	100.0
National Estimation	11,080	80,763

Source: National Survey on Persons with Disabilities, Korea National Institute for Special Education(2008)

Remark: Number of children with physical disabilities who are currently given nursery care services among persons with disabilities who live at home was included.

## V. Suggestions

For this study, Characteristics of Children with Physical Disabilities and Curriculum and Teaching Method for Them in the Special Support Education have been analyzed.

As they present passive attitude due to the high degree of physical dependency on others and the students with terminal diseases are likely to present depression, aggression and withered attitude, which means that psychological and physical efforts

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that children with physical disabilities have to make to overcome disabilities can cause great stress. Except children with cerebral palsy, most of children with physical disabilities have similar level of intelligence with children without disabilities. Among children with cerebral palsy, there are students with intellectual impairment and students with normal or excellent level of intellectual potential. children with cerebral palsy among children with physical disabilities have language and communicational disorder and these communicational disorders vary from articulation disorders and the disorders of articulatory organs and are differentiated according to the types of cerebral palsy. Children with physical disabilities who have inherent movement disorders may have difficulty in communication. There is infinite variety of the abilities of persons with physical disabilities depending on the types, causes and characteristics of their disabilities; therefore, the curriculum for them needs to be modified according to their abilities and characteristics and the necessary and proper supports need to be given.

Even though the educational environment that students became to be able to select the curriculum that they need and want to theoretically has been provided, there have been problems because of the tendency that the degrees of disabilities of students who enter special schools for physical disabilities have been more severe and the number of disabilities that they have have increased.

To solve these problems, teaching-learning methods that are properly modified according to the characteristics of children with physical disabilities are required.

Teaching-learning method of children with physical disabilities is based on the process of task analysis. The most properly individualized educational goals for students need to be established based on the results of the evaluation of the abilities of students with the tasks subdivided through the task analysis. In addition, to implement proper education for children with physical disabilities, educational environment for them needs to be prepared; the placement of specialized teachers for physical disabilities, the installment of equipments according to the characteristics of disabilities, etc.

As the children with physical disabilities who currently attend schools struggle with the lack of understanding of teachers and peers, the supports need to be urgently given to them. To solve those problems related to maladjustment of children with physical disabilities, trainings for teachers in charge of the education for children with physical disabilities need to be implemented in order to help teacher understand them and acquire professional knowledge and educational program for children without disabilities need to be prepared in order to help them understand disabilities and be equipped with cooperative and friendly attitudes. Moreover, the curriculum needs to be modified according to the abilities and characteristics of children with physical disabilities and diverse studies on the curriculum need to be performed in the future.

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