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ORIGINAL ARTICLE

Characteristics of the Educational Status of Special Education Schools for the Physically Disabled in South Korea; Through Text Mining Analyses of School Goals and School Evaluations

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ABSTRACT

The purpose of this study is to investigate the characteristics of the educational status of special education schools for the physically disabled by analyzing text data on school goals and school evaluations in special schools for the physically disabled nationwide in South Korea. As a result of analysis, regarding the school goals and school evaluations of 21 special education schools for the physically disabled nationwide, the noun word that appeared most often in the school goals was “Student” and the adjective word was “Healthy.” The verb word was “Develop.” The noun word that appeared most frequently in the school evaluation of curriculum organization and operation was “Student” and the adjective word was “Educational.” The verb word was “Be.” The noun word that appeared most frequently in the school evaluation of the classes was “Student,” and the adjective word was “Various.” The verb word was “Be.” In conclusion, the school goals for physical disabilities were focused on improving the health of students with physical disabilities, and school evaluations appeared to focus on the individual curriculum for students with physical disabilities. In the future, it will be necessary to investigate the current status of special education for students with physical disabilities according to the degree of disability.

Keywords: Physically disabled, special education schools, 2022 special education curriculum, school goals, school evaluations

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1. Introduction

In Korean education, the paradigm of the special education curriculum is changing from “Given alternative curriculum” to “Student-customized curriculum.” The Ministry of Education confirmed and announced the revised special education curriculum on December 22, 2022. Recently, as the number of students with severe disabilities among students eligible for special education is increasing, this revised curriculum defines a customized curriculum that considers the student's disability characteristics and educational needs and specifies in detail the target of application of the basic curriculum¹⁾. The special education curriculum consists of a general curriculum, a kindergarten curriculum, a common curriculum, a selection-oriented curriculum, and a basic curriculum. Among these, it is reported that the basic curriculum is the one that most reflects the uniqueness of special education²⁾. The basic curriculum of special education develops a level-specific curriculum with content linked to real life, focusing on core competencies necessary for life in the community, so that each disabled student can smoothly cope with future daily life and occupational activities³⁾. The Ministry of Education reported that it established a basic curriculum system, established a new subject called activities of daily living for students with severe disabilities, and strengthened curriculum support for integrated education, improving the curriculum to be customized for students with content related to real life¹⁾.

On the other hand, according to the 2023 special education statistical survey published by the Ministry of Education, there is no significant numerical change in the number of special education recipients with physical disabilities in South Korea, which will be 9,522 (8.7%) out of 109,703 in 2023, compared to 9,639 (9.3%) out of 103,695 in 2022⁴⁾. Nevertheless, the number of students with physical disabilities in South Korea is the second highest after intellectual disability, autistic disorder, and developmental delay, and among students with two or more severe disabilities, it is reported that students with physical disability and intellectual disability are the most numerous⁵⁾. It is reported that there are seven definitions of physical disabilities: A person with a physical disability is a person who has a permanent disability in the function of one arm, one leg, or torso, a person who has lost the thumb of one hand above the phalangeal joint, or a person who has lost all two or more fingers, including the second finger of one hand, above the first phalanx joint, a person who has lost one leg above the transverse ankle joint, people who have lost all toes on both feet, a person who has lost the function of the thumb of one hand, or a person who has lost the function of two or more fingers, including the second finger of one hand, a person who is severely short due to dwarfism or who has significant deformities or deformities in their spine, and a person who is recognized as having a physical disability greater than or equal to one of the above items⁶⁾.

In the case of special education targeting students with physical disabilities, it is necessary to consider not only support for improving physical activity functions in daily life but also the learning ability and disability characteristics of students due to the severity and overlap of disabilities. In addition, it is very necessary for special education schools for the physically disabled to organize and operate a curriculum to respond to the characteristics of students with disabilities⁷⁾. However, it has been reported that it is very difficult to organize a curriculum for the majority because physical disabilities have a wide range of types or causes and are characterized by diversification of severity and duplication in students with disabilities⁸⁾. Therefore, in order to fulfill individualized education for students with physical disabilities, it is reported that each school needs to build an educational environment so that learners can independently design the curriculum on what and how to learn based on their career path and aptitude⁹⁾. Regarding the customized education according to learner tendencies proposed by the Ministry of Education in the 2022 revised curriculum, it has not yet been clearly investigated whether special education schools for the physically disabled are presenting school goals and obtaining school evaluations accordingly.

Meanwhile, in general, the most important principle of learning design means reducing various obstacles that appear when learning, and it must be successfully applied to students in educational goals, and educational evaluations¹⁰⁾. In order to essentially implement the learning process, the school must set school goals that reflect the needs of school members and society, operate the curriculum by establishing the composition and completion system of subjects, and conduct school evaluations focusing on students' performance processes and results. It is reported that students' capabilities can be strengthened as a result¹¹⁾. In addition, the school goals and school evaluations of these educational institutions serve as standards for teachers to carry out daily educational activities or provide direction, structure, and evaluation in carrying out educational activities¹²⁾. However, no study has ever been conducted to characterize the school goals and school evaluations of special education schools for the physically disabled using text mining analyses, and there has yet to be a study examining whether these characteristics are related to the newly revised special education curriculum. Therefore, the purpose of this study is to investigate the characteristics of the educational status of special schools for the physically disabled in South Korea by objectively analyzing the school goals and characteristics of school evaluations in special schools for the physically disabled nationwide through text mining analyses.

2. Materials and Methods

2.1. Special education schools for the physically disabled

This study analyzed 21 special education schools for the physically disabled nationwide as listed in the 2023 special education statistics published by the Ministry of Education ⁴⁾. The specific schools' name is (1) Hankuk Woojin School, (2) Seoul Narae School, (3) Seoul Jeongmin School, (4) Seoul Saerom School, (5) Yonsei University Rehabilitation School, (6) Jumong School, (7) Busan Hyenam School, (8) Daegu Sungbo School, (9) Daegu Bogun School, 10) Incheon Eunkwang School, (11) Eunhye School, (12) Daejeon Seongsae Rehabilitation School, (13) Gwangju Saerom School, (14) Myeonghye School, (15) Hansarang School, (16) Cheongju Hyehwa School, (17) Sungdeok School, (18) Nazarene Saeggum School, 19) Dongam Chadol School, (20) Jeonbuk Pureun School , (21) Jeju Youngji School (Table 1).

2.2. Primary outcomes

2.2.1. School goals of special education schools

In this study, only the specific school goals related to student achievement were set as primary outcome measures among the school goals published on the website of each special education school for physical disabilities.

2.2.2. School evaluations of special education schools

In this study, school evaluation data called "School Evaluation Reports" were downloaded from the homepage of each special education school for the physically disabled. In addition, if the school evaluation reports could not be downloaded from the schools' website, "School Evaluation Indicators and Comprehensive Evaluation Opinions" was downloaded through the information disclosure site (so-called School Information)¹³⁾ of elementary schools, middle schools, and high schools nationwide established in accordance with the Elementary and Secondary Education Act. The qualitative reports and implications regarding the items of 'curriculum organization and operation' and 'classes and evaluation innovation' listed in the school evaluation reports were set as school evaluations. Those who evaluated classes and evaluation innovation were students' parents, and teacher and staff of the schools.

2.3. Text data analysis

Regarding the analysis of school goals and school evaluations, we conducted an analysis of unstructured text data through text mining to determine the characteristics of special education schools for the physically disabled nationwide. Text mining is an analysis technique that extracts useful information from text data. It is used in various academic fields because it builds text data (the preprocessing process) and extracts information that is not specified in the original text through text data analysis¹⁴⁾. KH Coder version 3 Beta 07 was used as analysis software. High-frequency keywords were extracted only from nouns, adjectives, and verbs through the extracted word list. Cases where the keyword appeared less than five times were excluded from the results of this study. Additionally, the connections between frequently related keywords were visualized through co-occurrence network analysis.

3. Results

3.1. Number of teachers and students in special education schools for physical disabilities

Among the 21 special education schools, one school did not have an elementary school and one school did not have a high school. The schools with the largest number of teachers, including elementary, middle and high schools, were Daegu Sungbo School (85), Seoul Jeongmin School (77), and Jeju Youngji School (73). The schools with the largest number of students were Daegu Sungbo School (233), Jeju Youngji School (203), and Seoul Jeongmin School (178).

Table 1. Number of teachers and students in special education schools for physical disabilities nationwide in 2023

	Schools	Teachers			Students			
		Elementary School	Middle & High School	Total	Elementary School	Middle School	High School	Total
1	Hankuk Woojin School	23	37	60	80	31	37	148
2	Seoul Narae School	16	31	47	53	23	23	99
3	Seoul Jeongmin School	27	50	77	84	46	48	178
4	Seoul Saerom School	14	9 *	23	36	21	-	57
5	Yonsei University Rehabilitation School	12	17	29	43	20	23	86
6	Jumong School	17	29	46	78	41	40	159
7	Busan Hyenam School	23	27	50	75	33	36	144
8	Daegu Sungbo School	33	52	85	117	59	57	233
9	Daegu Bogun School	16	24	40	52	21	29	102
10	Incheon Eunkwang School	10	21	31	32	27	39	98
11	Eunhae School	28	33	61	88	29	45	162
12	Daejeon Seongsae Rehabilitation School	8	14	22	21	22	16	59
13	Gwangju Saerom School	11	15	26	36	17	3	56
14	Myeonghye School	-	30	30	-	36	40	76
15	Hansarang School	22	14	36	54	19	17	90
16	Cheongju Hyehwa School	12	18	30	26	16	19	61
17	Sungdeok School	13	20	33	44	24	24	92
18	Nazarene Saegum School	21	14	35	64	15	22	101
19	Dongam Chadol School	9	26	35	47	36	27	110
20	Jeonbuk Pureun School	10	23	33	48	23	35	106
21	Jeju Youngji School	28	45	73	90	65	48	203

* This number refers to the number of middle school teachers only.

3.2. School goals regarding students in special education schools for the physically disabled

Among the school goals, the school goals related to student are as shown in Table 2. The positioning of school goals took the form of detailed goals for students in the form of descriptions of comprehensive school goals and policies to achieve them (Table 2).

Table 2. Specific school goals for students in special education schools for physical disabilities

Schools	Specific school goals for students
1 Hankuk Woojin School	Self-directed students who have the basic abilities and qualities necessary for their lives and careers; Students who process and utilize various information to solve rational problems; Students who conversely utilize knowledge, skills, and experiences in various fields; Students discovering and enjoying the meaning and value of life; Students who express their thoughts and feelings effectively and respect the opinions of others; Students who actively participate in community development with the values and attitudes required of local, national and global community members
2 Seoul Narae School	Healthy students with basic living habits; Students with good character who are considerate and cooperative; Students who open up the future by nurturing dreams and talents
3 Seoul Jeongmin School	Healthy students with basic lifestyle habits, Sincere students who overcome obstacles and adapt to society, and students who cooperate by nurturing dreams and dreams and exploring career paths
4 Seoul Saerom School	To nurture students who learn and grow while developing their individuality and talent through diverse and rich experiences; To nurture students who live together who can respect and communicate with each other while nurturing their dreams in the local community; To nurture students who have healthy bodies and minds through the harmonious development of the body and good character
5 Yonsei University Rehabilitation School	Students who overcome obstacles with a positive mind and sense of purpose; Students who think creatively and develop their own specialties and talents; Students who develop self-reliance and a sense of community in daily life
6 Jumong School	Students with different lifestyles, Students who develop their talents and aptitudes, and Students who are physically and mentally healthy
7 Busan Hyenam School	Students with good character; Students who are physically and mentally healthy; Students exploring careers
8 Daegu Sungbo School	Students who achieve healthy and independence and learning and growth
9 Daegu Bogun School	Students who can create new things and solve problems in an integrated way; Students who actively challenge new environments and strive for self-realization; Students who express themselves in a hyper-connected society based on empathy and understanding and respect others; Students who practice a happy life with community values and attitudes
10 Incheon Eunkwang School	A healthy person overcoming a disability; A person who live righteously and help each other; A person who develops talent and ability; A person who adapts through experience
11 Eunhae School	A person who understands disabilities and strive to improve basic living skills; A person who live together with respect for themselves and others; A person who grows as member of society by developing career paths and aptitudes; Intellectually/Physically/emotionally harmonious person
12 Daejeon Seongsae Rehabilitation School	Cultivation of communication skills with good character, practice of basic etiquette, keeping orders and rules; Development of basic motor skills, development of basic physical strength development of health/hygiene habits, development of ability to adapt to group life, development of ability to adapt to various environments, strengthening of career/vocational education, Formation of basic living habits, development of personal handling skills, development of daily life expression skills, provision of a pleasant educational environment, operation of student-centered educational activities, ties between parents and community
13 Gwangju Saerom School	Students who strive to improve their living skills; Students who enjoy learning and practicing; Students who develop their future dreams and develop their ability to express themselves
14 Myeonghye School	Balanced student with a loving and cooperative attitude and nurturing self-reliant people through character education activities based on the Catholic view of education
15 Hansarang School	Those who strive to improve their senses and motor skills; Those who manage their own work; Those who strive to express their opinions; Those who have basic life skills; Those who enjoy leisure and develop their talents
16 Cheongju Hyehwa School	Students who have grown harmoniously into active members of society
17 Sungdeok School	Students with basic habits and abilities necessary for daily life; Students with a healthy mind and body who know joy; Students with self-reliance capable of social integration; Students who grow by helping each other
18 Nazarene Saeggum School	Students who learn and practice hard; Students who love themselves and consider others; Students with good character
19 Dongam Chadol School	Raising healthy people whose minds and bodies are harmoniously developed by overcoming and improving disability; Raising self-sufficient people who handle their own work by acquiring new knowledge and skills; As a member of a community that aims for a welfare society, raise a polite person whose love themselves and their neighbors
20 Jeonbuk Pureun School	Keep your body and mind healthy by exercising; Acquire academic background and develop talents and specialties; Achieve your dream with a strong will to overcome obstacles; Develop talents and acquire independent living skills; Cultivate good character and practice love with neighbors
21 Jeju Youngji School	Students with healthy mind and body; Students who develop their talents; Students dreaming of self-reliance

3.2.1. Results of keyword appearance frequency count

In the preprocessing stage, the number of all extracted words (use) counted from the school goals was 774 (515), and the number of words (use) counted by distinguishing lexical words was 219 (197). Table 3 shows the results of the number of words that appear more than 5 times. Among noun words, words appeared in the order of “Student,” “Skill,” and “Person,” and among adjective words, words appeared in the order of “Healthy,” “Basic,” and “Good.” Among verb words, words appeared frequently in the order of “Develop,” “Learn,” “Nurture,” and “Strive” (Table 3).

Table 3. Extracted 19 words and frequency count

	Noun	Frequency	Adjective	Frequency	Verb	Frequency
1	student	42	healthy	11	develop	12
2	skill	11	basic	9	learn	5
3	person	9	good	6	nurture	5
4	talent	9			strive	5
5	life	8				
6	character	7				
7	community	7				
8	development	7				
9	body	6				
10	mind	6				
11	ability	5				
12	living	5				

3.2.2. Analysis results of the co-occurrence network

Moreover, as a result of conducting the co-occurrence network, the potential co-occurrence relationships of the extracted words were divided into a total of eight subgraphs, as shown in Figure 1. As a characteristic of school goals, the eight subgraphs were given the following titles (Table 4). The title of the first subgraph can be said to be “Qualities and abilities required as members of society” for students with physical disabilities, and keywords such as “Skill,” “Strive,” and “Nurture” were found. The title of the second subgraph is “Independent community life” for students with physical disabilities, and keywords such as “Basic,” “Community,” and “Development” were found. The title of the third subgraph can be said to be “Living in harmony with disability” for students with physical disabilities, and keywords such as “Person,” “Disability,” and “Live” were found. The title of the fourth subgraph can be said to be “Problem solving ability” of students with physical disabilities, and keywords such as “Express”, “Problem”, and “Solve” were found. The title of the fifth subgraph is “Education about body movements” for students with physical disabilities, and keywords such as “Educational,” “Practice,” and “Activity” were found. The title of the sixth subgraph can be said to be “Students developing their talent,” and keywords such as “Student,” “Develop,” and “Talent” were found. The title of the seventh subgraph can be said to be “Good character,” and keywords such as “Good” and “Character”. Finally, the title of the eighth subgraph can be said to be “Physicality and Mentality,” and the keywords “Physically,” “Mentally,” and “Be” were found (Figure 1).

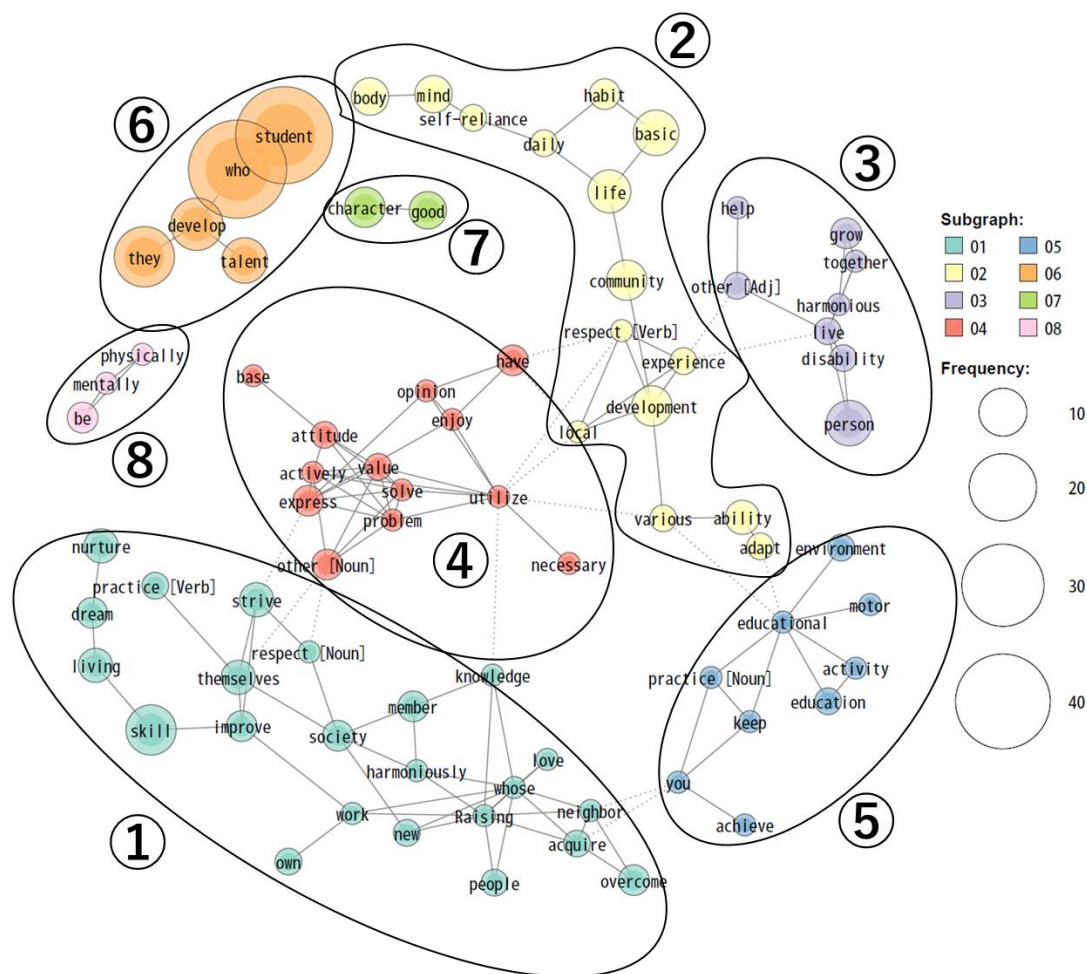


Figure 1. Subgraph classification in co-occurrence networks about specific school goals for students

Table 4. Titles of 8 subgraphs

Subgraph title	
1	Professional knowledge and training required to become a member of society
2	Independent community life
3	Living in harmony with disability
4	Problem solving ability
5	Education about body movements
6	Students developing their talent
7	Good character
8	Physicality and Mentality

3.3. School evaluations regarding students in special education schools for the physically disabled

Table 5 summarizes the evaluation of the organization and operation of the curriculum and the evaluation of the classes in special education schools for the physically disabled.

Table 5. Evaluation of the organization and operation of the curriculum and the classes in special education schools for physical disabilities

Schools	Evaluation of the organization and operation of the curriculum	Evaluation of the classes
1 Hankuk Woojin School	In COVID-19, the curriculum was organized and operated to reflect the needs of students and the characteristics of the school.	Our school shares individualized education plans, achievement evaluations, and life guidance information to help students adapt at the beginning of the semester and strives for student growth through regular consultation with the Individualized Education Support Team. The teacher frequently shared the student's performance with the guardian and supported the student's growth through this.
2 Seoul Narae School	We organize a school curriculum that suits the characteristics of our students and operate a curriculum for each class that meets the characteristics of the class and the needs of the students (rehabilitation, water/sensory exercise, class-specific activities, etc.). A variety of systematic career-related programs were operated in connection with curriculum and CEA.	Through the Individualized Education Support Team Council and parent consultations, we establish and operate an individualized education plan that reflects the characteristics of each student and the needs of parents. Efforts were made to provide evaluations that support student growth through restructuring achievement standards appropriate for the characteristics of students with physical disabilities and severe or multiple disabilities and evaluating them through class observations.
3 Seoul Jeongmin School	Through parental consultation and consultation with the Individualized Education Support Team, we establish and operate an individualized education plan that reflects the characteristics of students and the needs of parents. A curriculum including basic lifestyle habits and character education was organized and operated, and efforts were made to cooperate between families and schools to enhance character education.	Efforts were made to provide evaluations that would help students grow and develop through class observations. We conducted classes in which students could participate happily by utilizing various communication methods that reflected the students' characteristics, assistive technology devices, textbooks, and teaching aids.
4 Seoul Saerom School	We organized and operated a curriculum that matched the characteristics of the school, the needs of its members, and the development of students' future capabilities. We also utilized a variety of learning materials that took the individual differences of students into account. Career education was revitalized by operating career education activities that reflected students' interests and aptitudes, job understanding, and parents' demands in connection with CEA and the free grade system.	All teachers actively participated in teaching research activities to strengthen teaching capabilities and improve teaching. We operated various small group activities, such as teacher learning communities, to enhance teachers' expertise.
5 Yonsei University Rehabilitation School	We have formed and operated an individualized education support team and systematically established educational plans, implemented classes, recorded evaluations, and provided results based on students' characteristics and parents' needs. Using the curriculum and CEA, we organized picture exchange communication, sensory integration, five sense play, exploration activities, electric wheelchairs, book play, etc. that fit the characteristics of our school and operated a school curriculum suitable for students with physical disabilities. In order to reorganize the curriculum for practical learning, village instructors with expertise were utilized, and in connection with various experts in the community, we prepared for adaptation to the community after graduation and various social participation activities. We provide a variety of career education programs that consider each student's talent, aptitude, and future, as well as vocational education to help students learn the basic skills and attitudes required in various job fields so that they can live as members of the community.	Research and sharing were actively carried out through course-specific consultations and the operation of teacher learning communities. The curriculum was reorganized for student growth, and evaluations (performance, observation, and regular exams) tailored to each student were conducted. The fairness of attendance management and evaluation was enhanced through deliberation by the Academic Performance Management Committee; evaluation plans and standards were disclosed in advance, and the objection period was faithfully operated.
6 Jumong School	An individualized education plan was established and implemented that took into account the educational needs of special education students. We operate a customized career and vocational education course to strengthen the future life capabilities of disabled students.	A variety of student participation classes and cooperative learning-centered classes are conducted. Considering the type and characteristics of disability, we operate a variety of process-based evaluation methods, subjects, and periods. The fairness of evaluation was improved by effectively operating the Academic Performance Management Committee.
7 Busan Hyenam School	By operating a customized curriculum that reflects the educational needs of individual students and a curriculum centered on life skills needed in real life, class participation improved and school goals were achieved.	Character education was set up as a special project of the school, and a character program was operated that took into account the chronological age of each school level to cultivate good character. Through the medical support project, a systematic and effective medical support system was established for medical support needs, and special health care support was provided. Students' cultural and artistic experiences were expanded by attracting a variety of high-quality performances such as puppetry, dance, and theater. We created a fun and safe school environment and strengthened safety education and safety training. The e-sports intramural athletic competition provided students with confidence, a sense of accomplishment, and satisfaction.
8 Daegu Sungbo School	Through the integrated design of curriculum-class-evaluation-records and the operation of the reflection week, efforts were made to integrate curriculum-class-evaluation-records based on individual curriculum plans to help students grow and develop and the level, characteristics, and future of individual students. We were able to establish an individualized education plan centered on subjects and life that reflects life priorities.	We worked to revitalize school culture and arts education and received positive evaluations by operating a positive behavior support program.

9	Daegu Bogun School	To improve students' social adaptability, a program utilizing community resources was effectively operated. Experience-centered educational programs with the local community were systematically operated. Efforts were made to identify students' career paths and occupational characteristics through vocational evaluations. We operate a variety of career and job experience programs that take into account the type and degree of a student's disability, aptitude, and specialties.	We strived to cultivate good character through practice-oriented character education. A character education plan tailored to the school's unique characteristics was implemented in a substantial manner. He worked hard to cultivate good character, such as respecting his parents and the elderly.
10	Incheon Eunkwang School	Individualized education for each subject is appropriately operated considering the current level of students. Individual support programs for after-school educational activities and on-campus programs were well-run, reflecting the needs of students and parents who were surveyed in advance at the beginning of the semester.	Gaps in learning due to COVID-19 were minimized through in-person classes, remote classes, and the provision of alternative learning materials for students who were absent.
11	Eunhae School	The type and characteristics of the student's disability and the needs of the parents were actively reflected through consultation, and an individualized education plan was established focusing on the burden of the homeroom teacher. We understand the level of students learning and plan and operate a curriculum appropriate for individual needs. We share students' needs during curricular activities with teachers of the same grade and make joint efforts to provide teaching and learning activities appropriate for them.	We provided students with a variety of career and job information and career counseling and utilized the human and material resources of the local community to operate the 'College Life Experience Program for Students with Disabilities' to provide students with a variety of information and experience opportunities. Through connections with various external organizations and the invitation of professional instructors, various career experiences and opportunities for individual students to explore their careers were provided. The career activity room and career counseling room were renovated to increase the use of vocational education equipment, operate various career programs, and provide stable career counseling. Career counselors conducted individual and group career counseling with students and parents to listen to students' career concerns and provide appropriate career coaching.
12	Daejeon Seongsae Rehabilitation School	Despite many restrictions on educational activities due to COVID-19, efforts were made to try various educational methods and improve teacher expertise. Special projects for each curriculum were operated for each course. In order to encourage diverse experiences and the self-development of students, we operate a curriculum focusing on play that develops the five senses in elementary schools, a creative career education free grade system in middle schools, an intensive career education grade system in high schools, and a 3-UP independent education program in major departments. In order to enhance the expertise of teachers, it has been of great help in teaching classes to new and low-experience teachers by operating class research club, various consulting scholarships, on-campus mentoring scholarships, autonomous scholarships, and class openings. Through various cultural arts education, students' potential abilities were discovered, which contributed to improving self-confidence, fine motor skills, and character and interpersonal skills.	Through classes utilizing the school library, students are provided with opportunities to improve their ability to search for information and their self-directed learning attitude, and school-autonomous reading education is provided through reading festivals, school book report contests, reading libraries, library use education, and color story classes. Reading education was strengthened through the program.
13	Gwangju Saerom School	Considering student growth, curriculum reorganization, classes, evaluation, and records were carried out systematically and consistently. A variety of evaluation methods were implemented to ensure students' holistic growth and true academic advancement. In accordance with COVID-19 response guidelines, we disinfect the school and respond quickly when confirmed cases occur to prevent group infections. Through school announcements, students were instructed to remember to ventilate the classroom, wash their hands, check their temperature, and wear masks.	Appropriate feedback was provided according to the evaluation results to resolve the student's academic achievement gap and learning difficulties. The class emphasized learner initiative and cooperation. Equitable learning was supported by restructuring the sensory integration and experience-centered classes needed for students with severe and multiple disabilities through a curriculum practice based on teacher cooperation classes.
14	Myeonghye School	Subject councils, departmental councils, teacher workshops, and department head workshops were used to build plans among teachers, and existing classes and tasks were assessed and taken into consideration while making plans for the upcoming school year. Parents' opinions on significant topics related to the curriculum and operations of the school were gathered through a survey of parents. We made every effort to give pupils career education so they could become independent, and we worked to maintain continual contact between teachers and parents for the sake of the students.	Various topic encounters were used to foster collaborative and creative mindsets. Through the curriculum reconstruction project class, I gained the interpersonal and social skills required to interact with others and communicate while resolving issues within the same grade. We created classes that offer students real-world learning opportunities by redesigning the curriculum. We established a body-mind balance based on fundamental knowledge through a variety of experiences, as well as an attitude of empathy and cooperation with others. The emphasis on PE and health-related activities was to participate in a range of activities with the aim of boosting self-esteem and giving students a sense of accomplishment via exercise.
15	Hansarang School	According to the student's level and disability characteristics, it was run as a moderate and overlapping disability curriculum. It also featured a personalized education program that represented the students' educational needs through imaginative experiential activities.	According to the student's level and disability characteristics, it was run as a moderate and overlapping disability curriculum. It also featured a personalized education program that represented the students' educational needs through imaginative experiential activities.
16	Cheongju Hyehwa School	There was a change in the positive perception of school members regarding the operation of the professional learning community, and there was a lot of useful training through the professional learning community this year.	There was a change in the positive perception of school members regarding the operation of the professional learning community, and there was a lot of useful training through the professional learning community this year.

17	Sungdeok School	By collaborating with similar organizations, regional restrictions on career experience were broadened. Instead of concentrating just on enhancing social and professional skills, a variety of occupational skills were developed, including knowledge of the law, etiquette, and human rights. Opportunities for career experience were expanded for students eligible for special education in the transition period through subsidies for career vocational education focused curriculum and youth business school.	Activities in the ukulele club gave parents a chance to interact and lessened the strain of parenting. Children's direct exposure to job experience activities through career vocational club activities boosted their trust in school instruction. Many families took part in the family support program thanks to the parents' association's strong support.
18	Nazarene Saeggum School	The demands and needs of school members were reflected in the organization and operation of the school curriculum. The curriculum was reorganized to suit the characteristics of each grade and subject. A school curriculum was implemented that takes advantage of regional characteristics and the material and human resources of the community. A curriculum reflecting core competencies was organized and operated.	We conducted student-centered classes and classes that fostered collaborative learning and tried to ensure that no student was left out by providing a variety of learning opportunities tailored to students' talents and specialties. The growth process of each student was observed and recorded. Career education tailored to the student's developmental stage was provided.
19	Dongam Chadol School	Individualized education is based on school conditions and student levels. It was done with this in mind. The school curriculum was faithfully implemented according to the academic schedule.	Teaching and learning methods for each subject were provided to suit the characteristics of the subject. Students were appropriately guided to develop the correct basic lifestyle habits. Each student's problems were identified, appropriate measures were established, and guidance was provided in connection with the home.
20	Jeonbuk Pureun School	By implementing more than 100% of the 7 types of safety education classes for students, all students were able to cultivate safety awareness and make safety a part of their daily lives through various educational activities such as field trips, curriculum, training activities, and fire drills.	According to the plan to open classes to all teachers at least three times a year, classes are made public to parents and fellow teachers, and the quality of teaching and learning is improved through council meetings, increasing trust and satisfaction among students and parents, and expanding opportunities for class research for teachers themselves.
21	Jeju Youngji School	In order to provide educational activities that meet the educational needs of students with severe and multiple disabilities, the curriculum and time were reduced, and the number of CEA increased. A free semester system centered on career exploration activities, topic selection activities, arts and sports activities, and club activities was operated for second-year middle school students. It was implemented in a variety of ways to suit the characteristics of students, such as by course, grade, disability area, and class, reflecting the curriculum, regional characteristics, school conditions, and student and parent needs.	Before conducting field experience learning, we identified the dangerous areas and travel routes of destinations and transit points in advance and conducted safety guidance in a systematic and planned manner. We also tried to make safety awareness a part of daily life by repeating safety education on a regular basis through CEA.

3.3.1. School evaluation of curriculum organization and operation

3.3.1.1. Results of keyword appearance frequency count

In the preprocessing stage, the number of all extracted words (use) counted from the school evaluation of curriculum organization and operation was 1,497 (915), and the number of words (use) counted by distinguishing lexical words was 399 (359). Table 6 shows the results of the number of words that appear more than 5 times. In nouns, words appeared in the order of "Student," "Curriculum," and "Education," and in adjectives, words appeared in the order of "Educational," "Various," and "Individual." Among verbs, words appeared frequently in the order of "Be," "Operate," and "Reflect" (Table 6).

Table 6. Extracted 33 keywords and frequency count

	Noun	Frequency	Adjective	Frequency	Verb	Frequency
1	student	40	educational	12	be	45
2	curriculum	27	various	7	operate	21
3	education	24	individual	6	reflect	10
4	school	22	creative	5	make	8
5	activity	20	individualized	5	implement	7
6	characteristic	15			organize	6
7	need	15			establish	5
8	career	12			take	5
9	class	11				
10	parent	9				
11	plan	9				
12	program	9				
13	community	8				
14	teacher	8				
15	disability	7				
16	variety	7				
17	effort	6				
18	grade	6				
19	life	6				
20	skill	6				
21	experience	5				

3.3.1.2. Analysis results of the co-occurrence network

As a result of conducting the co-occurrence network, the concurrent relationships of the extracted words were divided into a total of eight subgraphs, as shown in Figure 2. As a result of reviewing eight subgraphs as characteristics of school evaluations for curriculum organization and operation, the following titles were presented (Table 7). First of all, the title of the first subgraph can be said to be “Creative and diverse experiences and activities,” and keywords such as “Activity,” “Career,” and “Variety” were found as specific features. The title of the second subgraph is “Discovering students’ career aptitude through learning,” and keywords such as “Utilize,” “Vocational,” and “Evaluation” were found. The title of the third subgraph can be said to be “Implementation of curriculum considering individual characteristics,” and keywords such as “Student,” “Curriculum,” and “Education” were found as specific features. The title of the fourth subgraph can be said to be “A teacher who develops students’ talents,” and keywords such as “Develop,” “Enhance,” and “Focus” were found as specific features. The title of the fifth subgraph can be said to be “Suitable for the region,” and keywords such as “Regional” and “Suit” were found. The title of the sixth subgraph can be said to be “Individual and group learning,” and keywords such as “Community,” “Member,” and “Learning” were found. The title of the seventh subgraph can be said to be “Organizing and operation of individualized plans,” and keywords such as “Individualized,” “Plan,” and “Effort” were found as specific features. The title of the eighth and final subgraph can be said to be “Accumulation of various specialized knowledge,” and the keywords “Expertise,” “Skill,” and “Experience” were found as specific features (Figure 2).

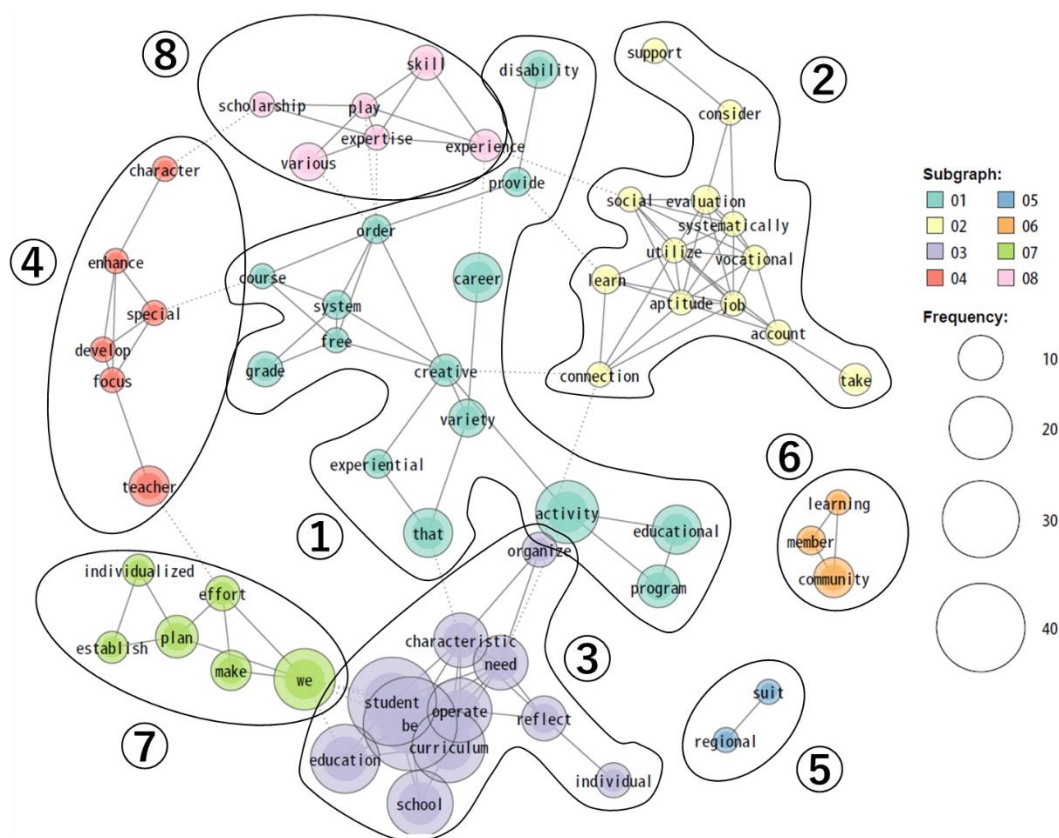


Figure 2. Subgraph classification in co-occurrence networks about evaluation of the curriculum

Table 7. Titles of 8 subgraphs

Subgraph title	
1	Creative and diverse experiences and activities
2	Discovering students' career aptitude through learning
3	Implementation of curriculum considering individual characteristics
4	A teacher who develops students' talents
5	Suitable for the region
6	Individual and group learning
7	Organizing and operating an individualized plan
8	Accumulation of various specialized knowledge

3.3.2. School evaluation of classes

3.3.2.1. Results of keyword appearance frequency count

In the preprocessing stage, the number of all extracted words (use) counted from the school evaluations of the classes was 1,280 (800), and the number of words (use) counted by distinguishing lexical words was 401 (361). Table 8 shows the results of the number of words that appear more than 5 times. In nouns, the words “Student,” “Class,” and “Evaluation” appeared most frequently. In adjectives, the word “Various” appeared most frequently. Among verbs, words appeared frequently in the order of “Be,” “Provide,” and “Operate” (Table 8).

Table 8. Extracted 30 keywords and frequency count

	Noun	Frequency	Adjective	Frequency	Verb	Frequency
1	student	36	various	6	be	40
2	class	19			provide	16
3	education	15			operate	9
4	career	12			conduct	7
5	activity	10			learn	7
6	evaluation	10				
7	school	10				
8	support	9				
9	teacher	9				
10	learning	8				
11	parent	8				
12	character	7				
13	characteristic	7				
14	experience	7				
15	program	7				
16	variety	7				
17	disability	6				
18	opportunity	6				
19	teaching	6				
20	community	5				
21	curriculum	5				
22	growth	5				
23	plan	5				
24	safety	5				

3.3.2.2. Analysis results of the co-occurrence network

As a result of conducting the co-occurrence network, the concurrent relationships of the extracted words were divided into a total of 21 subgraphs, as shown in Figure 3. As a result of reviewing 21 subgraphs as characteristics of school evaluations of classes, the following titles were presented (Table 9). First of all, the title of the first subgraph can be said to be “Individualized education and support counseling,” and keywords such as “Activity,” “Career,” and “Variety” were found as specific features. The title of the second subgraph is “Use information,” and keywords such as “Utilize,” “Vocational,” and “Evaluation” were found. The title of the third subgraph can be said to be “Topic development method,” and keywords such as “Subject,” “Method,” and “Develop” were found as specific features. The title of the fourth subgraph can be said to be “Need and level,” and keywords such as “Need” and “Level” were found as specific features. The title of the fifth subgraph can be said to be “Various participation,” and keywords such as “Various” and “Participate” were found. The title of the sixth subgraph can be said to be “Become a student,” and keywords such as “Student” and “Be” were discovered independently. The title of the seventh subgraph is “Academic performance management through committee,” and keywords such as “Academic,” “Committee,” and “Fairness” were found as specific features. The title of the eighth subgraph can be said to be “The sense of creating and accomplishing projects,” and the keywords “Project,” “Accomplishment,” and “Sense” were found as specific features. The title of the ninth subgraph can be said to be “Cultivate good character,” and the keywords “Character,” “Cultivate,” and “Good” were found as specific features. The title of the

tenth subgraph can be said to be “Individual counseling room,” and the keywords “Individual,” “Counseling,” and “Room” were found as specific features. The title of the eleventh subgraph can be said to be “Cooperate to resolve,” and the keywords “Cooperation,” “Base,” and “Resolve” were found as specific features. The title of the twelfth subgraph can be said to be “Boost through interaction,” and the keywords “Interact,” “Give,” and “Boost” were found as specific features. The title of the thirteenth subgraph can be said to be “Actively enhance,” and the keywords “Actively” and “Enhance” were found as specific features. The title of the fourteenth subgraph can be said to be “Reading at the library,” and the keywords “Library” and “Read” were found as specific features. The title of the fifteenth subgraph can be said to be “Expand satisfaction,” and the keywords “Satisfaction” and “Expand” were found as specific features. The title of the sixteenth subgraph can be said to be “Experiential,” and the keywords “Experiential” and “Also” were found as specific features. The title of the seventeenth subgraph can be said to be “Career and job,” and the keywords “Career” and “Job” were found as specific features. The title of the eighteenth subgraph can be said to be “Stability and systemization,” and the keywords “Safety” and “Systematic” were found as specific features. The title of the nineteenth subgraph can be said to be “Medicine and special,” and the keywords “Medical” and “Special” were found as specific features. The title of the twentieth subgraph can be said to be “Family and club,” and the keywords “Family” and “Club” were found as specific features. Finally, the title of the 21st subgraph can be said to be “Fostering Student Collaboration,” and the keywords “Collaborative” and “Foster” were found as specific features (Figure 3).

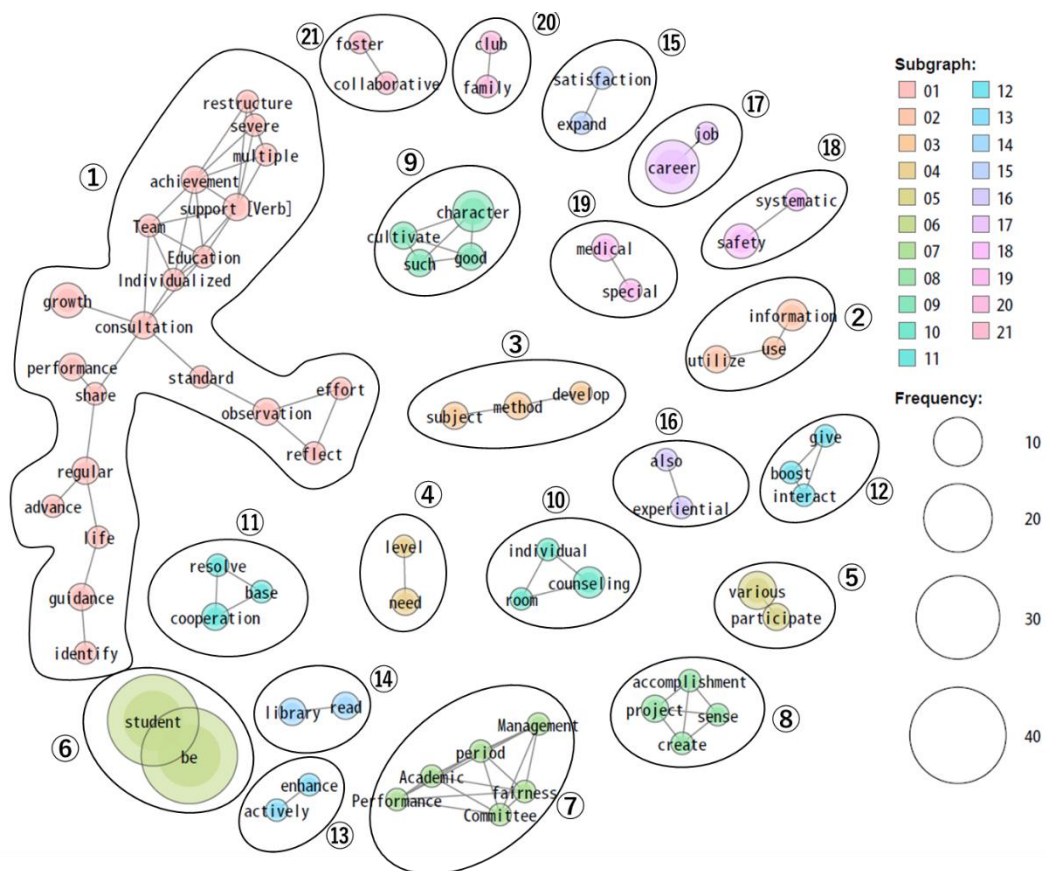


Figure 3. Subgraph classification in co-occurrence networks about evaluation of the curriculum

Table 9. Titles of 21 subgraphs

Subgraph title	
1	Individualized education and support counseling
2	Use information
3	Topic development method
4	Need and level
5	Various participation
6	Become a student
7	Academic performance management through committee
8	The sense of creating and accomplishing projects
9	Cultivate good character
10	Individual Counseling Room
11	Cooperate to resolve
12	Boost through interaction
13	Actively enhance
14	Read at the library
15	Expand satisfaction
16	Experiential
17	Career and job
18	Stability and systemization
19	Medicine and special
20	Family and club
21	Fostering student collaboration

4. Discussion

The study investigated the characteristics of education status of special education schools for the physically disabled by analyzing text data on school goals and school evaluations in special education schools nationwide for the physically disabled in South Korea. As a result of the analysis of school goals, most schools presented specific school goals for students. The noun word that appeared most frequently in school goals was “Student,” the adjective word was “Healthy,” and the verb word was “Develop.” In addition, as a result of co-occurrence network analysis, a total of eight characteristics indicated in school goals: (1) Professional knowledge and training required to become a member of society, (2) Independent community life, (3) Living in harmony with disability, (4) Problem solving ability, (5) Education about body movements, (6) Students developing their talent, (7) Good character, and (8) Physicality and Mentality. The noun word that appeared most often in relation to curriculum organization and operation was “Student,” the adjective word was “Educational,” and the verb word was “Be.” As a result of co-occurrence network analysis, a total of eight characteristics indicated in school evaluations: (1) Creative and diverse experiences and activities, (2) Discovering students’ career aptitude through learning, (3) Implementation of curriculum considering individual characteristics, (4) A teacher who develops students’ talents, (5) Suitable for the region, (6) Individual and group learning, (7) Organizing and operating an individualized plan, and (8) Accumulation of various professional knowledge. Regarding the school evaluations of the classes, the noun word that appeared most often was “Student,” the adjective word was “Various,” and the verb word was “Be.” As a result of co-occurrence network analysis, a total of 21 characteristics indicated.

To the best of our knowledge, this is the first study to investigate the educational status of special education schools for the physically disabled in South Korea by analyzing text data on the school goals and school evaluations of the special education schools for the physically disabled. This study was able to visualize characteristics of school goals and school evaluations of special education schools for the physically disabled in South Korea.

In the results of this study, excluding “Student,” which appeared most frequently in the school goals of special education schools for the physically disabled, the next most frequent noun word was “Skill.” It was suggested that improving students' skills is of utmost importance as a school goal for special education schools for the physically disabled in this study. The majority of children with cerebral palsy attending special education schools for the physically challenged have physical limitations because they have motor disabilities due to brain damage. Therefore, it was found that special schools for the physically disabled were providing specific skills based on professional knowledge about the physical disabilities in all classroom environments, including physical education, and this result was consistent with previous research^{15,16}. In the physical education curriculum for special education announced by the Ministry of Education, it is reported that students with physical disabilities aim to improve their quality of life by applying the skills acquired from the characteristics of exercise and sports areas to their daily lives¹⁷. Moreover, considering that “Healthy” and “Development” showed similar frequencies as “Skill” in this study, it is possible that the school goals for students in special education schools for physical disabilities were focused on the health of students with physical disabilities. The results were consistent with previous studies in that there was a possibility of focusing on developing physical activities and exercise areas that considered the characteristics of the disability¹⁸.

In this study, eight characteristics of school goals for students with physical disabilities were presented. The Ministry of Education emphasized that each region's schools are responsible for organizing and operating special education subjects, and reports that subjects should be designed to reflect the characteristics of each school level. The Ministry of Education also improved the subject of creative experiential activities (CEA) in the 2022 revised special education curriculum into learning content that promotes student-centered activities. In addition, Activities of Daily Living (ADL) is a new subject established in 2022 in consideration of the uniqueness of special schools and the characteristics of each student's disability¹. The two subjects are reported to have a complementary relationship with other required subjects⁹. In the case of creative experiential activities in elementary schools, specific school goals focus on forming basic lifestyle habits and exploring and discovering individuality and talents. CEA in middle school focus on establishing self-identity and exploring one's career path. It is reported that CEA in high school focus on establishing a sense of community, cultivating practical skills for living together, and designing and preparing for career paths¹⁷. In the case of daily life activities, school goals for each elementary, middle, and high school are not set. By developing students' remaining abilities and potential, students understand themselves and their surroundings and cultivate life adaptation skills necessary for present and future life. It also aims at an attitude of living together as an active member of society in the community¹⁷. Most of the special education schools in this study were elementary, middle, and high schools, and had the same characteristics about school goals with “Professional knowledge and training required to become a member of society,” “Independent community life,” “Problem solving ability,” and “Education about body movement.” In other words, special education schools for the physically disabled may be implementing a curriculum of CEA and ADL with the goal of becoming independent as community members. Students with physical disabilities have significant differences in physical function and intellectual ability, so there are many difficulties in developing and applying a curriculum suitable for their characteristics and needs. It has been

reported that CEA provide opportunities for students with physical disabilities to improve their physical motor skills, apply social rules, and promote communication, and also promote social integration through community participation¹⁹). The characteristics of the school's goals for physical disabilities in this study were consistent with the direction of the newly revised special education curriculum^{1,9,17}), and it is possible that customized individual education for students with physical disabilities is being implemented.

The words that appeared most frequently in the school evaluations of the organization and operation of the curriculum in this study were "Student," "Educational," and "Be." In addition, the noun words that appeared most frequently in the school evaluations of the classes were "Student," "Various," and "Be." Considering these two school evaluations results, it is thought that the school provides a variety of educational programs to students. According to Park et al. (2017), Because teachers focus on explaining knowledge as accumulated results to students through subject education, they report that there is a lack of awareness in terms of field application or implementation of the need for students to learn independently²⁰). In this study, one of the characteristics of the school evaluations of the curriculum organization and operation of a special education schools for the physically disabled is "Creative and diverse experiences and activities," "Implementation of curriculum considering individual characteristics," and "Organizing and operating an individualized plan." The characteristics of the school evaluations of the classes included "Individualized education and support counseling," "Various participation," and "Experiential." Considering these results, it is thought that a variety of curriculums are provided and that individualized education plans are being evaluated for organizing and operating, so it is thought that student-tailored curriculum is being implemented more smoothly than in the past. In addition, as characteristics of school evaluations for curriculum organization and operation, "Individual and group learning", and as characteristics of school evaluations of classes, "Topic development method," "Various participation," "The sense of creating and accomplishing projects," and "Cooperation to resolve", "Boost through interaction", "Experiential", and "Fostering student collaboration". It is possible that this result was influenced by CEA centered on experiential activities that have a complementary relationship with other subjects and ADL centered on activities that promote self-directed lives by enhancing students' ability to adapt to life. In addition, one of the characteristics of school evaluations for curriculum organization and operation was "Discovering students' career aptitude through learning" and "Accumulation of various specialized knowledge," and as a characteristic of school evaluations of classes, "Career and job." It is reported that CEA also include self-understanding activities that help learners understand their interests and aptitudes, as well as career awareness and exploration activities that explore and recognize various occupations¹⁷). It is possible that organizing the curriculum including these subjects led to job-related evaluations of students. However, as a characteristic of the school evaluations of the classes in this study, no characteristics related to the specific subject were found. In the case of special physical education, according to Kim et al., there are various difficulties in achieving educational achievement due to the degree and type of disability of students with physical disabilities, differences in individual motor ability and physical development, school facilities and equipment, and limitations of the curriculum²¹). The subjects of this study were the special education schools that educates students with physical disabilities without distinguishing between degrees of disability, and it is possible that a positive school evaluation was not obtained because physical disabilities are accompanied by various difficulties in physical activity compared to other areas of disability.

On the other hand, other characteristics of school evaluations for classes included "Academic performance management through committee" and "Family and club." According to Jeong et al. (2012), as the relationship between parents and

special education teachers becomes increasingly difficult, parents believe that teachers will be negligent in their children's education because of their responsibility for evaluation reports and results, whereas there is a reason why teachers evaluate students' remaining abilities by focusing on social and emotional development rather than basic academic ability²²). In the results of this study, it is considered that parents are actively participating in classes because they were evaluated for managing academic performance through an academic performance management committee that included parents.

There is some limitation of this study. First, school evaluation of classes is not by students who took the class, but by parents and faculty. Second, because this study does not address school goals and school evaluations for students with multiple disabilities who have physical disabilities, it is difficult to generalize the results. In the future, there is a need to investigate the special education for students with physical disabilities according to the degree of disability, and the method of investigation also needs to be considered.

5. Conclusion

The school goals of South Korea's special education schools for the physically disabled were found to focus on improving the health of students with physical disabilities and their independence as community members. It was suggested the schools was evaluated positively for providing a variety of curriculum and organizing and operating an individualized education plan in the school evaluation of the organization and operation of the curriculum and the school evaluation of the classes. In addition, it was suggested that students' career and vocational abilities were receiving positive evaluations. In the future, there is a need to clearly investigate the status of special education in special schools for physical disabilities according to the degree of disability by considering the survey method.

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