

# Current situation of recognition of twice exceptional (2E) children by teachers in charge of special support for children enrolled in regular classes and parents of children with developmental disabilities

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## Abstract

This study asked teachers who routinely work with children with developmental disabilities about their experience with so-called 2E children, who have both developmental disabilities and giftedness, and at the same time surveyed parents of children with developmental disabilities about whether they recognized that their children were gifted or not. The results showed that about half of the professional teachers surveyed had experience with 2E children, and about half of the parents' responses indicated that they recognized that their children were gifted. In both surveys, ASD children were significantly more common in the cases of 2E children who were identified. Both teachers and parents expressed a desire for more flexible educational opportunities that would allow for the development of giftedness, and a desire for increased recognition and support systems at school and in the real world.

Keywords: 2E children, developmental disabilities, gifted, Autism Spectrum Disorder

## Introduction

A new system of education for children with disabilities in Japan was established under the name of “special support education” as a result of a legal revision in 2006. The purpose of this system is to provide an individualized and optimized education based on the characteristics of each child who needs support. As a result of the reforms, children with so-called developmental disabilities such as ADHD, LD, and ASD without intellectual disabilities, which had not been officially recognized as disabilities in the previous education system for children with disabilities, were recognized as the main target of support. The government has also positioned the promotion of inclusive education as a top priority, and has decided to strengthen measures for children in need of support who are enrolled in regular classrooms. In fact, according to a 2022 the Ministry of Education, Culture, Sports, Science and Technology (MEXT) survey, approximately 8.8% of children with developmental disabilities are enrolled in regular classes in Japan (2022, MEXT), making the promotion of inclusive education in regular classes, including universal design of classes, an urgent task.

On the other hand, it has long been known that some children are uniquely gifted, and it has been pointed out that they deserve an individualized education (Renzulli, 1977). And while some children with exceptionalities may be too intellectually gifted in certain areas, they are also known to be relatively maladjusted to the educational environment of their age group (2010, Sumida). For this reason, some countries and regions take measures such as “early learning” by allowing children to enroll or take courses beyond their original grade level, or by taking them out individually and providing them with a different menu of education. In 2021, MEXT recommended the need for educational support for gifted children at the “Expert Committee on the Way of Guidance and Support in Schools for Students with Unique Talents in Specific Fields” (2021, MEXT), but in Japanese public education, the educational system to develop exceptional talent However, the current situation is that the educational system for developing exceptional talent has not yet been established in Japanese public education.

It has long been recognized that there are a small number of gifted children who are not only exceptionally gifted, but also have developmental disabilities such as learning difficulties, hyperactivity and

impulsivity, and interpersonal difficulties (Baum, 1983) (Baum, Owen, 1988). Of course, there are often cases in which developmentally disabled children are discovered to have a combination of talents that would make them gifted children. Such children with both exceptionalities and developmental disabilities are called twice exceptional (2E) children, and are characterized by the need for both educational support as gifted children and support for the challenges caused by their developmental disability characteristics (Cooper et.al, 2004) (Gilman BJ, 2004) (Gilman BJ. et.al, 2013). Despite the fact that support systems for either characteristic are still developing, it is believed that there is insufficient awareness among teachers and other stakeholders regarding 2E in the first place.

## Objectives

In Japan, there is a form of “classroom instruction” in which children with disabilities who are enrolled in regular classes attend a separate classroom for about one session per week, where a special teacher for special needs education provides individualized instruction. This system is hereafter referred to as a “resource room. Since the inception of special support education, the number of children using resource rooms has increased rapidly in line with the growing recognition of developmental disabilities. In this study, we will survey teachers in charge of resource rooms to find out how many children with both giftedness and developmental disabilities they have worked with. In parallel, parents of children with developmental disabilities will be asked whether their children have exceptional talents, and if so, what kind of talents and abilities they have. The purpose of this study is to compare the differences in the cognitive realities of the two groups.

## Questionnaire Survey

### 1. Survey of teachers in charge of resource rooms

A questionnaire created by google form was sent to 24 teachers in charge of resource rooms at elementary and junior high schools in A City, via a QR code sent through the schools, and we asked them to answer the questions. The questions are shown in Table 1.

Table 1: Questions for Teachers

QT1	Years in charge of resource room
QT2	Number of 2E children
QT3	Types of Disability
QT4	Types of Talents
QT5	Specific Details
QT6	Education conducted
QT7	Ideal education:Support room
QT8	Ideal education:Whole school

### 2. Survey of parents of children with developmental disabilities

A questionnaire created with google form was sent to members of a family association for developmentally disabled children in B Prefecture through a representative via e-mail for members. Although it was difficult to ascertain the number of family members who could receive the e-mail, it was expected to be in the dozens. The questions are shown in Table 2.

Table 2: Questions for Parents

QP1	2E or not
QP2	Types of Disability
QP3	Types of Talents
QP4	Specific Details
QP5	Education conducted outside of school
QP6	Education conducted at schools
QP7	Education expected from school
QP8	System you want for your children
QP9	Ideal education:School
QP10	Preferred Support System

## Results

### 1. Results of survey of resource room teachers

The survey was distributed to 24 respondents, and responses were received from a total of 21. The response rate was 87.5%.

Figure 1 shows the results of the number of teachers by years of experience in the QT1 resource room.

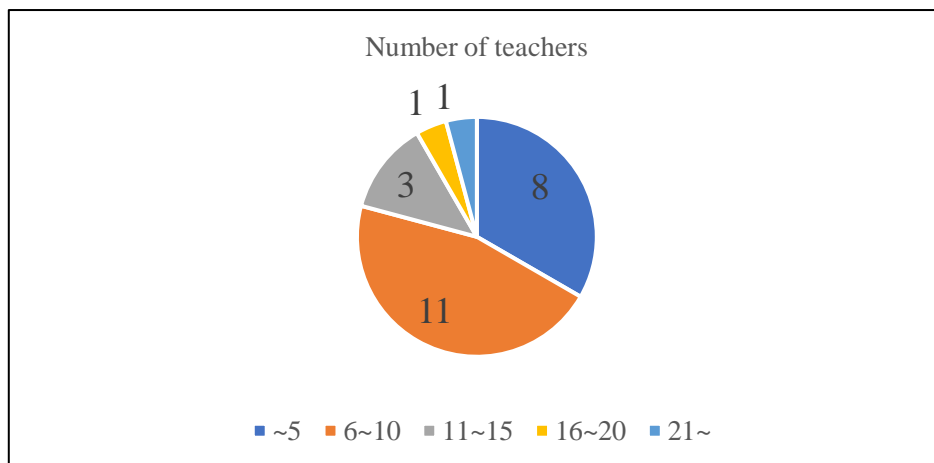


Figure 1: years of experience in resource room

QT2 Figure 2 shows the results of the number of children assigned with special talents.

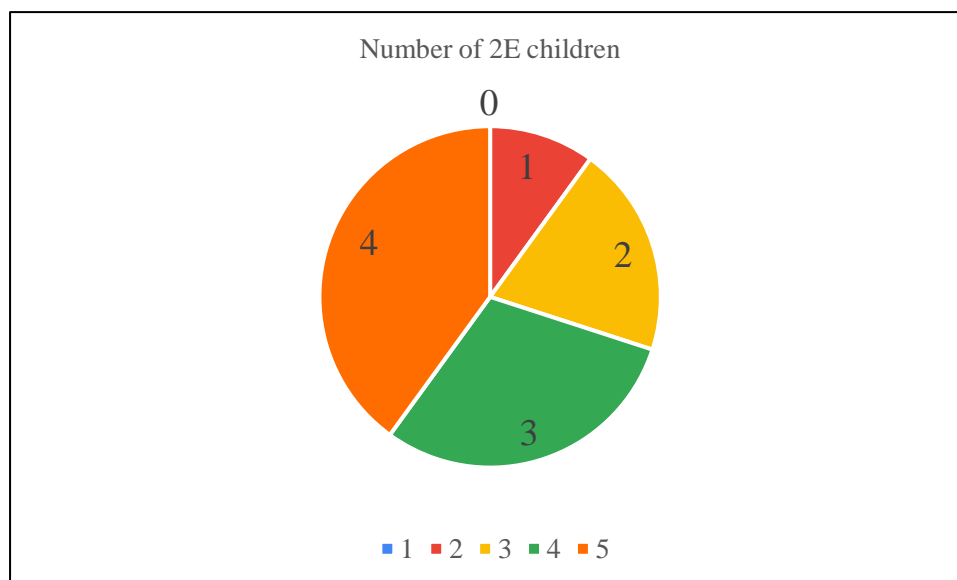


Figure 2: Number of children assigned with special talents

QT3-QT6 Table 3 shows the disability types of gifted children, areas of giftedness, appearance, and results of education provided at school.

Table 3: types of disability, types of talents, specific details, and education conducted at school before

No	Types of Disability	Types of Talents	Specific Details	Education conducted
1	ASD	Knowledge of interests	Train and car types	Learning letters by vehicle name
2	ASD,LD	Knowledge of interests	World history and international affairs	Asked about history and praised it.
3	ASD	Nonspecific memory	Memorize all conversations and statements	support sort out excessive memories
4	LD	Knowledge of interests	International affairs news	Listening and knowledge addition support
5	ASD	Arts Related	Painting ability	Design-related career support
6	ASD	Arts Related	Painting ability	Use pictures for communication
7	ASD	Arts Related	Crafting ability	Opportunities to teach other students
8	ASD	Arts Related	Painting ability	Art classes according to his wishes.
9	ASD	Knowledge of interests	History	Creation of historical illustrated book
10	ASD,ADHD	Science	Solutions and chemical reactions	Internet learning and presentation
11	ADHD	Science	Biology	Creation of illustrated book
12	ADHD	Science	Water creatures	Production of aquariums
13	ADHD	Knowledge of interests	World Geography and Flags	Used to motivate another study

QT7 and QT8 Table 4 shows the ideal teaching outcomes that teachers would like to achieve in the resource room and throughout the school.

Table 4: Ideal teaching that teachers would like to do in the resource room and throughout the school.

Resource room	Whole school
Develop the talents	Enabling education tailored to individual characteristics
Increase self-esteem	Collaboration with external experts such as universities
Dealing with Difficulties	Dealing with Difficulties
Communication and SST	Allowing children to choose what they want to learn
Monitoring and dialogue	Environment that respects diversity
	Allowing students to skip grades
	Expanding school options

## 2. Results of a survey of parents of children with developmental disabilities

Twenty-seven respondents responded to the survey, but the response rate is unknown because the number of respondents who received the survey e-mail cannot be ascertained.

Figure 3 shows the results of QP1, “Do you think your child has a special talent, and how many is it?”

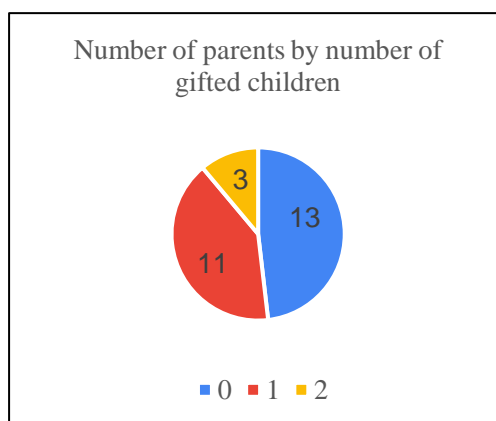


Figure 3: Results of 27 parents asked about the number of gifted children.

QP2-QP8 Table 5 shows the results of parents' responses regarding their own children's talents.

Table 5: Results of Parents' Responses Regarding Their Child's Talents

No	Types of Disability	Types of Talents	Specific Details	Education conducted	Education conducted at schools	Education expected from school	System you want for your children
1	ASD	Arts Related	Accurately identify chords heard	Enjoy Piano Class	nothing	Difficult	Work-Related Education
2	ASD	Math	Unparalleled mathematical ability	Attend a math tutoring school	nothing	Develop the talents	Opportunities to showcase your talents
3	ASD	Memory	Outstanding in reading and learning	Cram schools and special clubs	nothing	Develop the talents	Opportunities to showcase your talents
4	ASD	Knowledge of interests	Extremely knowledgeable about railroads	Participation in railroad events	nothing	Tailored to interests	Participation in college classes
5	ASD	Arts Related, Memory	Perfect pitch, Painting, Memorize everything	Taking piano lessons	nothing	Respected by classmates for their talents	unstated
6	ASD	Arts Related, Memory	Painting, Memorize everything	Learning piano, drums, painting, and English	nothing	Free choice of study content	Tools to evaluate talent
7	ASD	Math	9999 times 9999 at age 7	Learning with tablet apps	nothing	Let him learn as he likes	Skipping grades
8	ASD	Language	Outstanding language skills	(Undocumented)	nothing	Stop boring repetition	Tools to evaluate talent
9	ASD	Memory	Memorize everything	(Undocumented)	nothing	Situations where talent is demonstrated	Environment for developing talent
10	ADHD	Arts Related	(Undocumented)	Music school	nothing	Let him learn as he likes	unstated
11	LD	Memory	Listen once and memorize completely	(Undocumented)	nothing	unstated	unstated
12	ASD, ADHD	Memory	Memorize everything, good at card games	Upper grade learning, Programming	nothing	Presentation of Favorite Things	Facilities where children can develop their talents
13	ASD, Intellectual dis.	Knowledge of interests	Amazing Anime Knowledge	Upper Grade Learning	nothing	Situations where talent is demonstrated	Counseling Center on Talent
14	ASD, ADHD	Arts Related	Painting and Crafts	Not implemented	art club	Education to recognize individuality	Where life skills are developed.
15	ASD, ADHD	Arts Related	Listen once and play the guitar precisely	Learn from guitarists and voice trainers	Performances at cultural festivals	Opportunities to play guitar	Performing Stage
16	ASD, ADHD	Science, Math	Explaining the Environment with Science	Math and Kanji Qualifications, Experiment	Set up individual tasks	Teachers' understanding and free choice	Facilities where children can develop their talents
17	ADHD	(Undocumented)	(Undocumented)	What the Family Association recommends	nothing	unstated	Counseling Center on Talent

Table 6 shows the results of responses to QP9 and QP10 parents about the ideals they want for schooling and society.

Table 6: Results of responses regarding the ideals that parents seek in school education and society.

Ideal education:School	Preferred Support System
Enabling education tailored to individual characteristics	Places and opportunities to showcase talents
Collaboration with external experts such as universities	Choice of schools where you can develop your talents
Dealing with Difficulties	Employment Support
Allowing children to choose what they want to learn	Financial support
Environmentst that respects diversity	Get together with similar children
Allowing students to skip grades	Enlightenment of gifted children
Expanding school options	Reduce the urban-rural divide
Do not force them to be like others	Government and University Collaboration

## Analysis and Discussion of Survey Results

Not only in Japan, but also through the enactment of the Law for the Support of Persons with Developmental Disabilities and the launch of special support education, there has been an increase in awareness and systems to recognize children with developmental disabilities and provide them with the necessary support. However, support for gifted children and support systems for children with both developmental disabilities and giftedness have not yet been established, and even recognition itself is insufficient. One reason for this may be that the concept of gifted children is difficult to incorporate into the health care, disability welfare, and education systems because it does not have formal criteria like those for determining illness or disability (Reis SM, et. al., 2014).

However, the most significant feature of Japanese special-needs education is its emphasis on rational consideration that does not necessarily presuppose a formal diagnosis or recognition of disability, and on the development of an educational environment based on the concept of universal design. In response to such a trend of the times, the summary of the Expert Committee on the Ideal Future of Guidance and Support in Schools for Students with Special Talents in Specific Fields was issued in 2022, and it is highly significant that the government has formally indicated its policy that it attaches great importance to this issue. This study is an attempt to extract the actual situation of 2E children from the local community, where there are few reports on the actual situation of 2E children because they are not subject to disease, disability, or special support education, and there is no formal definition of 2E. One of the objectives of the study was to make both the teachers in charge of the resource room and the parents of children with developmental disabilities aware of the survey.

First, from the results of QT2, about half (11) of the 21 respondents who were teachers in charge of the resource room experienced a child who was considered to be 2E. Also, from the results of QP1, about half (14) of the 27 parents who responded recognized that their child was gifted. Since Japanese resource room personnel are responsible for a total of more than 10 developmentally disabled children per year, this figure can be said to be about one in several dozen, taking into account the number of years they have been in charge. It is expected that future data could change as recognition of gifted and 2E children becomes more widespread and criteria for judgment are established. On the other hand, the results show that about half of the children with developmental disabilities recognize that their child is gifted, but there are two reasons why this cannot be simply compared to the number of experiences in the resource room. The first is that parents may have low standards for judging what their children are good at as “talent. Second, it is possible that the more parents who believed that their children were gifted in the first place, the more likely they were to respond to this survey.

Although, although having some kind of disability or difficulty is a prerequisite for formal use of the resource room in Japan, the classroom is not necessarily a place where only disabilities or difficulties are addressed, and one of the purposes of the program is to develop strengths and strengths by making use of strengths and strengths. From the specific outcomes that parents perceive, these are not necessarily abilities that are naturally discovered by the resource room teacher. It is necessary for teachers and parents to share more information about strengths when developing individualized instructional plans.

A total of 13 2E children experienced by the resource room personnel had a total of 7 ASD alone, 3 ADHD alone, 1 ASD+LD, 1 ASD+ADHD, and 1 LD alone disability type. A  $\chi^2$  goodness-of-fit test of the frequency distribution of these results showed a predominance of ASD alone with  $\chi^2=10.4$ ,  $p<0.05$ . Two other respondents had ASD comorbidity. On the other hand, among the 17 2E children whose parents responded, 9 had ASD alone, 2 had ADHD alone, 4 had ASD + ADHD, 1 had ASD + intellectual disability,

and 1 had LD alone. Similarly, a  $\chi^2$  goodness-of-fit test showed a predominance of ASD alone with  $\chi^2=13.3$ ,  $p<0.01$ . Another five children had comorbid ASDs, and both the resource room and the parents were predominantly ASDs in the 2E children. These findings may be related to the fact that ASDs are sometimes associated with extraordinary memory abilities and that Overexcitabilities, which Dąbrowski proposed as a characteristic common in gifted children, is similar to sensory sensitivity in ASDs (Dąbrowski, 1972). This may not be unrelated to the tendency of gifted children to want to talk about areas of interest to them, but to have difficulty forming peer groups. Katagiri also reported that it is important to assess 2E children's maladaptive status to determine whether it is due to high giftedness or developmental disability characteristics (Katagiri, 2023). Supporters and educators need a perspective that assesses each child's individual life and learning support needs, regardless of talent or difficulty.

Many of the results of QT7 "Education I would like to have in a resource room" and QT8 "Ideal school system" asked of teachers and QP9 "What I would like to see in a school" asked of parents were similar. Specifically, they were "development of talents," "opportunities for success," "development of self-confidence and self-esteem," "response to difficulties," and "individual optimization or learning that allows the student to choose. These are all important items for the promotion of inclusive education, and the knowledge of special needs education and inclusive education should be applied to the education of 2E children.

In QP10, "Social support system for 2E children," the parents shared the same opinion as the teachers regarding "regional cooperation, including universities," but their opinions regarding "employment support" and "financial support" were more sincere and unique to them. It can be said that a major challenge is the lack of sufficient support systems and social resources to maximize the development of children with developmental disabilities, even if they are gifted. In order to improve these resources, it is essential that the reality that there are many children who have both developmental disabilities and talents be better known, and that practical research be conducted through the provision of individually optimized learning.

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