JE

Journal of Inclusive Education
Printed 2024.0830 Online ISSN: 2189-9185
Published by Asian Society of Human Services

iStock.com / Anastasia Mandryka

August
2024
13

DOI: doi.org/10.20744/incleedu.13.0_64
Journal of Inclusive Education, VOL.13 64-82

ORIGINAL ARTICLE

Comparison of the Implementation Status of Disability Simulation in Elementary School;
Through a Survey of Teachers at University-affiliated Elementary School in Japan and Taiwan

Hsuanling CHEN [1)] Shoko MIYAMOTO [2)]

1) Graduate School of Comprehensive Human Science, University of Tsukuba
2) Institute of Human Sciences, University of Tsukuba

＜Key-words＞
Disability simulation, elementary school, regular class teachers, compare study, inclusive education

s2430341@tsukuba.ac.jp（Hsuanling CHEN）

Journal of Inclusive Education, 2024, 13:64-82. © 2024 Asian Society of Human Services

ABSTRACT

This study focuses on the status of disability simulation in elementary school and compares Taiwan and Japan. This study aims to clarify and compare the status of disability simulation and difficulties associated with them in elementary schools. We conducted a survey among six regular class teachers at each of the ten university-affiliated elementary schools in Taiwan (60 teachers in total) and all 68 national university-affiliated elementary schools in Japan (408 teachers in total). The response rates for Taiwan and Japan were 25% (12 teachers) and 23% (93 teachers), respectively. The results revealed that Taiwanese teachers experienced difficulties related to a lack of personnel, while Japanese teachers faced challenges obtaining and preparing the necessary materials and equipment. Consequently, it is recommended that school staff collaborate more effectively and establish connections with external organizations in Taiwan. Furthermore, in Japan, resources should be made available and smooth cooperation with external organizations should be ensured.

Received
28 June, 2024

Revised
5 August, 2024

Accepted
13 August, 2024

Published
30 August, 2024

Online ISSN: 2189-9185

DOI: doi.org/10.20744/incleedu.13.0_64
Journal of Inclusive Education, VOL.13 64-82

I. Introduction

1. Disability Awareness and Simulation

The Convention on the Rights of Persons with Disabilities (CRPD) specifies measures to realize the rights of persons with disabilities to ensure the human rights and freedoms of persons with disabilities as well as to promote their respect. Moreover, it prohibits discrimination against persons with disabilities and promotes their participation and inclusion in the society. According to Kato et al., building an inclusive education system requires "understanding people with disabilities" in the surrounding community[1]. The National Institute of Special Needs Education pointed out that understanding of disabilities can be significantly deepened by integrating educational activities into regular classes, such as the period for integrated studies [2].

Disability simulation has been used for developing disability understanding and promoting positive attitudes[3),4),5)]. Moreover, it was implemented as a component of disability understanding education activity in research studies conducted in Taiwan and Japan [6),7),8),9)].

We can gain a deeper understanding of the barriers faced by individuals with special needs and the transformative processes that they undergo through disability simulation experiences[10)]. Furthermore, simulating the state of disability allows the person who is being simulated to feel the inconvenience and anxiety of people with disabilities and makes them more aware[6),7),8)]. Based on the aforementioned content, disability simulation experiences serve to enhance the understanding of individuals with disabilities by allowing the participants to experience the daily challenges and to feel the associated inconvenience and anxiety.

2. Special Needs Education and Disability Simulation in Elementary School in Taiwan

In 2022, the Yearbook of Special Education Statistics of the Republic of China reported that 19.98% of regular elementary schools have special needs classes, 65.50% have resource classes, and 14.52% offer itinerant instructions. Additionally, 98.71% (48,707 children) of children receiving special needs education attend regular elementary schools, with 77.72% (37,854 children) utilizing resource classes[11)]. According to Chen et al., children with disabilities in Taiwan are increasingly being enrolled in regular classes, with a growing number attending resource classrooms. This trend highlights the movement towards a more inclusive educational environment for children with disabilities[12)]. Therefore, children with and without disabilities in Taiwan are believed to learn in the same learning environment.

Regarding to the disability type of school-age students in elementary school in Taiwan, the disability categories in special education classes primarily include intellectual disabilities (1,885 students, approximately 39%) and autism (1,426 students, approximately 30%) out of a total of 4,826 students. For students in resource classes, the majority of disabilities are developmental disorders such as learning disability (LD), autism spectrum disorder (ASD), and attention deficit hyperactivity disorder (ADHD) (27,897 individuals, approximately 74%)[11)].

Jian et al. reported that although children with special needs are enrolled in regular classes, there is a lack of understanding and acceptance of these children among peers and teachers[13]. Therefore, it is important for children in an inclusive educational environment to understand disabilities.

Qiu states that it is important to engage in special needs education promotion activities in order to promote inclusive education in Taiwan, and disability simulation experience is one of the practical methods for promoting special needs education at schools where employees are employed[14]. In a survey conducted by Lin, the number of disability simulation experiences (54%) was second only to video materials (59%), and respondents indicated that the disability simulation experience was one of the most effective practices[15]. Moreover, Yang et al. conducted a class for second-grade elementary school students to make them understand disabilities, including a simulation experience of hearing impairment and physical disabilities, and found that the questionnaire respondents expressed feeling inconvenienced by persons with disabilities[16]. Jian et al. conducted a class on intellectual disability that provided simulation experiences of intellectual disabilities for elementary school children and found that the attitude toward children with intellectual disabilities could be greatly improved, based on the post-class interviews[13]. This shows the importance of understanding disabilities and the use of disability simulation experience among elementary schools in Taiwan in doing so.

3. Special needs education and disability simulation in elementary school in Japan

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT) report regarding special needs education in Japan, it is necessary to create an environment where regular classes, regular classroom instruction, special needs classes, and special needs schools may serve as diverse learning places[17]. According to the special need education materials, the number of children receiving special needs education in elementary increased from 157,273 (2.24%) in 2010 to 380,942 (5.91%) in 2020, those receiving regular classroom instruction increased from 56,254 (0.80%) in 2010 to 116,633 (1.81%) in 2020[18),19]. The MEXT reported that understanding persons with disabilities is essential for promoting special education in order to establish an inclusive education system[17]. Therefore, the number of children receiving special education has increased over the past decade in Japan, and over 30% of children with disabilities receive regular classroom instructions. Thus, disability understanding becomes increasingly important.

Regarding to the disability type of school-age students in elementary school in Japan, the primary disabilities among special education class students are intellectual disabilities (96,639 students, approximately 45%) and emotional disorder and autism (110,409 individuals, approximately 51%). Among students receiving inclusive education support, the most common disabilities are developmental disabilities such as LD, ASD, and ADHD (59,495 individuals, approximately 51%)[19].

Based on previous research in Japan, Tsutsumi et al. conducted a survey among elementary schools in Japan and found that 28 of the 31 schools that responded were

"implementing or planning to implement" disability simulation experiences[6]. Imaeda et al. found that 54% of elementary schools conducted disability simulation experiences[7]. Accordingly, it can be concluded that disability simulation experience is frequently used by Japanese elementary school teachers when conducting classes on disabilities. The use of disability simulation experiences in programs and classes for elementary school students has been extensively researched. Kato et al. conducted a disability understanding programs for LD and ADHD targeting sixth-grade elementary school children that demonstrated effective improvements in students' understanding of these disabilities[1]. Tanabe et al. conducted an activity for sixth-grade elementary school students that included an eye-mask experience in a classroom to enhance their understanding of disabilities, and the feedback sheet revealed an increase in the number of descriptions of ingenuity for children with disabilities[20]. Furthermore, Murata et al. simulated language disorders in fifth-grade elementary school children, and the after-questionnaire showed positive attitudes toward people with disabilities[21].

However, the research conducted by Imaeda et al. and Higuchi et al. was analyzed based on disability type, and the survey conducted by Imaeda et al. showed that in the disability simulation experience conducted in elementary schools, the types of disability were visual impairment (46.3%), physical disability (38.8%), hearing impairment (21.3%), sickly (15.4%)[22]. According to the survey conducted by Higuchi et al., among the 36 cases of disability simulation, 15 cases involved visual impairment, five cases involved hearing impairment, 15 cases involved physical disability, and only one case involved sickness[8].

Therefore, this study demonstrated the importance of understanding persons with disabilities along with the promotion of inclusive education in Japan, as well as the use of disability simulation experience as a method of disability understanding education in elementary schools. However, the majority of disability simulation experiences involve visual and physical impairments.

4. Challenge of Disability Simulation

Several studies have demonstrated the effects of the disability simulation experience[13),16),23),24)]. Although disability simulation has several benefits, previous studies have criticized its focus on functional impairment, exaggeration of the helplessness of people with disabilities, and accuracy of the disability simulation experience[25),26)]. A disability simulation experience will become meaningless if only "inconvenience" is emphasized[24)]. Therefore, it is important to design disability simulation experiences carefully in order to prevent misconceptions.

Furthermore, a meta-analysis study conducted by Flower et al. in the US revealed that disability simulation experiences had little negative effects, but no significant effects[27)]. A subsequent meta-analysis study on disability simulation experiences in Korean elementary schools found no negative effects[28)]. The Korean study focused on Korean primary school students, while the US study focused on English-speaking regions. These differences suggest that the effectiveness of disability simulation experiences varies across regions and

cultures. Despite this, no comparative studies on disability simulation experiences have been conducted, highlighting the need for such research in order to better understand regional and cultural differences.

Taiwan and Japan are both influenced by the CRPD and have increasingly focused on enhancing disability awareness and fostering an inclusive society. Although national policies or laws emphasize inclusion, the implementation may vary between countries, and it is particularly important to explore the practice of inclusive education in different countries[29]. Both Taiwanese and Japanese laws emphasize inclusive education and highlight the importance and necessity of disability awareness education[2),12]. Despite differences in the educational environments for children with and without disabilities in Taiwan and Japan, the distribution of types of students with disabilities in elementary schools is very similar[11),19)] and both have high rates of implementing disability simulations[6),7),9)]. Therefore, by comparing the results of Taiwan and Japan, we can deeply investigate how educational methods used in different educational environments impact teachers and understand the effects of educational policies.

This study aims to clarify and compare the status of disability simulation and difficulties associated with them in elementary schools. Therefore, this study will answer the following three research questions: (1) What is the status of the implementation of disability simulation in elementary schools in Japan and Taiwan? (2) What are the difficulties associated with conducting disability simulations at university-affiliated elementary schools? (3) Based on the status and issues associated with implementing disability simulation at university-affiliated elementary schools in Japan and Taiwan, what are the differences between Japan and Taiwan?

Ⅱ. Method

1. Participants

The survey participant included regular elementary school teachers at university-affiliated elementary school in Japan and Taiwan. We included one teacher from each grade of each school (a total of six teachers per school). In addition, the survey includes the following details:

(1) Participants in Taiwan: There are six regular class teachers at each grade in each university-affiliated elementary school in Taiwan (there are 10 university-affiliated elementary schools in Taiwan), making it a total of 60 participants.

(2) Participants in Japan: There are six regular class teachers at each grade in each university-affiliated elementary school in Japan (there are 68 university-affiliated elementary schools in Japan), making it a total of 408 participants.

2. Questionnaire Design and Content

The questionnaire consists of the following three sections: (1) Face Sheet; (2)

Implementation of Disability Simulation Experience; and (3) Difficulties in Conducting Disability Simulation Experience. Sections (2) included the disability simulation experience, the types of disabilities simulated, the age of participants, the content of the implementation, and implementers, the aims of disability simulation, and the reasons for not implementing it. Sections (2) and (3) were developed based on previous research by Higuchi et al., Imaeda et al., and Huang[7),8),9)]. The questionnaire on sections (2) and (3) is multiple-choice. Based on the advice of elementary school teachers in Taiwan and Japan, the structure of the questionnaire was carefully examined and refined to ensure it accurately captured the relevant educational insights.

3. Distribution and Collection of Questionnaires

The survey was conducted from June 7 to August 31, 2023. The process began with telephone inquiries to the selected schools to determine their willingness to cooperate. Subsequently, the schools received a research cooperation request, a consent letter, an overview of the survey, questionnaires, and return envelopes. We considered the receipt of the completed questionnaires and consent letters from the schools as confirmation of their cooperation. This method ensured a structured data collection, while respecting the administrative processes of the schools involved. This questionnaire took approximately 10 minutes to complete.

4. Data Analysis Methods

Descriptive statistics and Fisher's exact tests were used for the questionnaire items, whereas keyword methods were used for free descriptions and analyses. We used the Fisher's exact tests of independence to test if two categorical variables are independent (not related) or dependent (related). In the present study, tests of independence were conducted on the proportion of responses to the question in Taiwan and Japan. The keyword method is a qualitative data analysis technique used to extract important information from text data such as free descriptions, interview. It refers to identify the frequently occurring words and group them and categorize them. The steps of the keyword method are (1) data input, (2) data summarization and formatting, (3) keyword extraction, (4) keyword structing and (5) aggregation[30)].

5. Ethical Considerations

This study approved by the Ethical Application Committee of University of Tsukuba, Japan (ID number: Tsuku2022-62A).

DOI: doi.org/10.20744/incleedu.13.0_64
Journal of Inclusive Education, VOL.13 64-82

Ⅲ. Results

1. Respondents of this questionnaire

The author obtained permission from eight schools in Taiwan (48 participants) and 67 schools in Japan (402 participants) to send questionnaires after requesting their cooperation of this survey by phone. The questionnaire surveys were then mailed to these schools. We received responses from two schools in Taiwan (12 participants) and 16 schools in Japan (93 participants). The recovery rates in Taiwan and Japan were 25% and 23%, respectively.

2. Implementation of the disability simulation experience

1) The rate of implementing disability simulation experiences in Japan and Taiwan

In terms of the comparison of the disability simulation experiences, when asked "Have you ever conducted or participated in disability simulation activity?", four respondents (33.3%) answered "Yes" in Taiwan, four respondents (4.3%) answered "Yes" in Japan, eight (66.7%) answered "No" in Taiwan, and 89 (95.7%) answered "No" in Japan. The Fisher's exact test indicated that Taiwan and Japan had significantly different participation rates in disability simulation experiences (p =.006).

<Table1> Comparison of the status of disability simulation in Taiwan and Japan

		Taiwan		Japan		
		N	%	N	%	p -values
Age	1st Grade	4	44	0	0	.082
	2nd Grade	2	22	0	0	.471
	3rd Grade	0	0	2	22	.471
	4th Grade	0	0	4	44	.082
	5th Grade	1	11	0	0	1.00
	6th Grade	2	22	3	33	1.00
	total	9	100	9	100	
Disability type	Visual impairment	3	33	4	44	1.00
	Hearing impairment	0	0	1	11	1.00
	Language disorders	1	11	0	0	1.00
	Physical disability	3	33	4	44	1.00
	LD	1	11	0	0	1.00
	ASD	1	11	0	0	1.00
	total	9	100	9	100	
Implementer	Respondent himself/herself	6	67	2	22	.153
	Teacher in the same school	3	33	2	22	1.00
	External Lecturers	0	0	5	56	.029*
	total	9	100	9	100	

※Disability types include intellectual disability, visual impairment, hearing impairment, language disorder, physical disability, sickness, LD, ASD, ADHD, and many more.
However, only those items with answers are displayed.
The p – values calculated using the Fisher's exact test for all items are indicated.
*significant at the 0.05 level (2 tailed).

Table 1 shows the comparison of the status of disability simulation in Taiwan and Japan. It shows the details such as age, disability type, and implementer of the disability simulation in Taiwan and Japan. The table shows the number (N) and percentage (%) of respondents in each category.

Fisher's exact test was conducted to examine the association between the age of participants, disability type, and implementer. The results indicated that no significant differences were observed for the age of participants, disability type.

In terms of the implementers, the results indicated that Japan had a significant difference between the "external lecturers" (p =.029). There was no significant difference between the "respondent himself/herself (p = .153) " and "teacher in the same school (p = 1.00). However, it was observed that in Taiwan, the implementer tends to be the respondent himself/herself more frequently than in Japan. In contrast, Taiwan does not have any "external lecturers" as the implementer, but in Japan, the implementer tends to be "external lecturers".

<Table2> Comparison of details of the implementation and types of disabilities in Taiwan and Japan

		Details of the implementation	
		Taiwan	Japan
Disability type	Visual impairment	Wearing an eye mask	Wearing an eye mask, night vision goggles, Braille translation, and goalball
	Hearing impairment	×	Hearing loss experience through wearing headphone
	Language disorders	Conveying a message through body language without speaking	×
	Physical disability	The experience of working with a non-dominant arm, sitting in a chair, and hitting a ball of different heights by hand	Walking experience wearing a cane or weight, caregiver experience, wheelchair experience, boccia
	LD	Make children to observe and empathize with the difficulties caused by learning disabilities	×
	ASD	Observed and empathized with the Autism classmate	×

※Disability types include intellectual disability, visual impairment, hearing impairment, language disorder, physical disability, sickness, LD, ASD, ADHD, and others. However, only those items with answers are displayed.

Table 2 shows the detailed information regarding the implementation and types of disabilities. According to Table 2, the type of disability simulation used in Taiwan included visual impairment, language disorders, physical disability, LD, and ASD. In Japan, the type of disability simulation included visual impairment, hearing impairment, and physical disability. Over the course of the implementation period in Japan, visual impairment simulations such as the eye mask experience, night vision goggle experience, Braille translation experience, and goalball experience were conducted. Physical disability simulation experience included walking with a cane or weight, caregiver experience, wheelchair experience, and boccia.

3. Aim of conducting disability simulation

Table 3 shows a comparison of the aim of disability simulations in Taiwan and Japan. It shows the number (N) and percentage (%) of respondents who answered “Yes” to each item. According to Fisher’s exact test, there are no significant differences in the aims of conducting disability simulations in Taiwan and Japan.

<Table3> Comparison of aim of disability simulation in Taiwan and Japan

Aim of the disability simulation	Taiwan		Japan		
	N	%	N	%	p - values
Understand the characteristics of disabilities	2	50	2	50	1.00
Imagine the difficulties encountered in various situations due to disabilities	4	100	3	75	1.00
Imagine the psychological state of individuals with disabilities when they encounter difficulties	3	75	3	75	1.00
Feel the hardships faced by individuals with disabilities firsthand	3	75	1	25	.486
Others	1	25	1	25	

The p - values calculated using Fisher’s exact test for all items are indicated.

4. Reasons for not conducting disability simulation

Table 4 shows the reasons for not conducting disability simulations in Taiwan and Japan. It shows the number (N) and percentage (%) of respondents who answered “Yes” to each item.

<Table 4> Reasons for not conducting disability simulations in Taiwan and Japan

Reasons for not doing so	Taiwan		Japan		
	N	%	N	%	p -values
Don't know how to do it because it's specialized	0	0	40	49	.007**
It is not necessary	2	25	8	10	.266
Might lead to bias because there are children with disability in class	1	13	1	1	.234
Don't have a teaching plan or teaching materials	0	0	18	22	.193
Not in the teaching plan at school	2	25	35	43	.461
Don't know what kind of positive effect it will have	1	13	16	20	1.00
No time to prepare	2	25	27	33	1.00
Not enough people to conduct such activities	4	50	6	7	.004**
Don't know how parents feel about “disability”	2	25	5	6	.106
Can't find an external instructor	1	13	10	12	1.00
Don't know what the disadvantages might be	0	0	9	11	1.00
Others	3	38	8	10	

The p - values calculated using Fisher’s exact test for all items are indicated.
**significant at the 0.01 level (2 tailed).
*significant at the 0.05 level (2 tailed).

According to Fisher’s exact test, Taiwan had a significantly higher number of responses citing "not enough people to conduct such activities responses" (p =.004). In contrast, Japan had a significantly higher proportion of respondents who answered “don't know how to do it because it's specialized” (p =.007). For the other items, no significant differences were observed.

Taiwan had three responses (38%) and Japan had eight responses (10%) to the option of "others". The free description of "others" was analyzed using keyword method, and the results are shown in Table 5. The process involved summarizing and refining the responses, extracting keywords, and structuring. As a result, there are various reasons, including "implementing disability-related content in other classes", "no special needs for the enrolled child", "the class already understands the situation of the enrolled child with disabilities", "lack of parental understanding", "lack of teacher awareness & preparation", "implement in other grades", "no current need to implement", and "no opportunity to implement".

<Table 5> Keyword analysis of free description about reasons for not conducting disability simulation in Taiwan and Japan

Country	No. of respondent	Result of keyword analysis (reasons for not conducting)
Taiwan	1	Implementing disability-related content in other classes
	2	No special needs for the enrolled child
	3	The class already understands the situation of the enrolled child with disabilities
Japan	6	Lack of parental understanding
	5,7,12	Lack of teacher awareness & preparation
	4, 8,11,13	Implement in other grades
	9	No current need to implement
	10	No opportunity to implement

6. Difficulties in conducting disability simulation

In terms of the difficulty of implementing the disability simulation, more than half of the respondents in both Taiwan and Japan felt that it was difficult to implement (Table 6).

<Table 6> Difficulties in implementing disability simulations in Taiwan and Japan

		Taiwan		Japan		
		N	%	N	%	*p*-values
Experiencing difficulties in conducting disability simulation		6	50	56	69	.205
Reasons for feeling difficulties	Cannot ensure safety due to a lack of personnel	5	83	14	25	.008**
	Difficulties in securing and preparing the necessary materials and equipment	1	17	39	68	.021*
	Challenges in selecting teaching content that is appropriate for the developmental stages of the children	2	33	31	54	.412
	Uncertainty of instructional content	0	0	28	49	.029*
	Others	0	0	7	12	

The *p*- values calculated using Fisher's exact test for all items are indicated.
**significant at the 0.01 level (2 tailed).
*significant at the 0.05 level (2 tailed).

The Fisher's exact test was used to examine the association between difficulties in implementing disability simulations in Taiwan and Japan. There was a significantly higher proportion of Taiwanese respondents who agreed with the statement "cannot ensure safety due to a lack of personnel (p =.008)", while Japan had a significantly higher proportion of respondents who agreed with "uncertainty of instructional content (p =.029)". For the other items, there were no significant differences in both countries.

Ⅳ. Discussion

1. Status and issues of implementing disability simulation experience in elementary school affiliated with university in Taiwan

There are 10 and the elementary school affiliated with national university in Taiwan. The university-affiliated elementary schools and universities have a collaborative department called the Research division. It shows the high connection on research between university and elementary schools.

It was observed that the elementary schools in Taiwan conducted simulation experiences of visual impairment, language disorder, physical disability, ASD, and LD, and the simulation experiences of invisible disabilities, such as language disorder, ASD and LD, were also conducted. In 2022, the Yearbook of Special Education Statistics of the Republic of China reported that there were enrolled in elementary schools, and 8,025 students (16%) with ASD, and 19,519 students (39.56%) with LD[11]. Therefore, it is believed that teachers at elementary schools affiliated with national universities in Taiwan may experience simulation of invisible disabilities such as LD and ASD, especially considering the high enrollment rate of students with ASD and LD in elementary schools in Taiwan.

In terms of the reason for not conducting disability simulation, the option "don't know how to do it because it's specialized" received no response. According to the Yearbook of Special Education Statistics of the Republic of China, among the 6,662 special needs education teachers at the elementary school level, 4,226 are working in resource classes in elementary schools, with 3,967 teachers (94%) possessing a special needs education teaching certificate[11]. Besides, all of the university-affiliated elementary schools in Taiwan have established resource rooms. Lin noted that teachers in resource classes also provided consultation on special education to regular class teachers[31]. Additionally, a high proportion of teachers who work in regular schools hold special education qualifications in Taiwanese elementary school, making them capable of resolving special education-related questions within the same school. Consequently, this infrastructure may be the reason why "don't know how to do it because it's specialized" is not cited as a reason for not conducting disability simulations in Taiwan.

2. Status and issues of implementing disability simulation in elementary schools affiliated with national universities in Japan

In terms of the type of disability and content of implementation, it was observed that disability simulation often focused on visual impairment, hearing impairment, and physical disability. Ono et al. pointed out that visual impairment, hearing impairment, and physical disability are the most commonly covered topics in elementary and junior high school textbooks, and there seems to be a trend towards addressing visual and physical impairments specifically within these educational levels [32]. Higuchi et al. and Ochi et al. confirmed that visual and physical disabilities were the most common types of disabilities that were simulated in elementary schools[8), 33]. In addition, it highlighted the importance of simulating visible disabilities, such as visual and physical disabilities.

The most frequently cited reasons for not conducting a disability simulation experience were "don't know how to do it because it's specialized" and "not in the teaching plan at school".

For "don't know how to do it because it's specialized", the free description by No. 5, 7, and 12 stated "lack of teacher awareness & preparation" as the reason why they did not conduct disability simulation (Table 6). According to Nagase et al., not enough research has been conducted on teacher training courses related to the training of teachers who can practice disability understanding education[34]. According to Higuchi et al., if workshops were offered on the themes of special needs education and teaching methods for "classes on disabilities," it would be possible to reduce the difficulties related to teachers' disability understanding education[8]. Sano et al. highlighted those teachers who emphasized training on understanding and responding to students with special needs for the implementation of understanding disabilities education[35]. Thus, it is believed that many elementary school regular class teachers did not conduct the disability simulations because they thought they "don't know how to do it because it's specialized". In addition, securing training time for regular class teachers and teacher education programs on disability understanding education created from the perspective of special education were considered essential.

For "Not in the teaching plan at school," the free description by No. 10 stated the reason why they did not conduct disability simulation (Table 6). The university-affiliated elementary schools in Japan strengthen their role within the educational system by supporting advanced educational practices, research. According to Survey on the Current Status of National University-Affiliated Schools in FY 2018 (Basic Survey), these schools are characterized by a variety of features, including collaboration between different types of schools, curriculum management, proactive and collaborative learning in response to new curriculum guidelines, inclusive education, ICT utilization, and addressing bullying issues[36]. Therefore, there are various study topic in the university-affiliated elementary schools in Japan and it is not necessarily that all university-affiliated elementary schools focus on disability awareness education, such as disability simulation experiences.

Besides, according to previous studies, it was observed that "disability understanding education" was not explicitly stated in the Curriculum guidelines in Japan, and the

disability understanding education in schools was often implemented in "the period for integrated studies" and "morality period" [6),7),37)]. However, the content of disability understanding education does not have a clear position in the curriculum[37)]. Taguchi et al. observed that teaching materials on disability were not necessarily covered in the "morality period" and that schools did not adequately plan for the content related to disability understanding into the curriculum of "the period for integrated studies" in each school[38)]. Therefore, it is assumed that no disability simulation is conducted in university-affiliated elementary schools in Japan due to a high proportion of respondents believing that it is "not in the teaching plan at school".

In the future, it is necessary to clarify the position of the curriculum for disability understanding education in Japan.

3. Comparison of disability simulation in Taiwan and Japan

The types of disabilities simulated in elementary schools in Taiwan include visual impairment, language disorders, physical disability, LD, and ASD. The types of disabilities simulated in elementary schools in Japan include visual impairment, hearing impairment, and physical disability. The simulation experiences of visual and physical impairments provide participants with a variety of experience contents that allow them to experience the various characteristics of the disability. Thus, it is apparent that there are various types of disability simulations in Taiwan, and that there is diversity in one type of disability simulation in Japan. However, it is also important to ensure that simulations accurately reflect the characteristics of each disability. For example, visual impairment simulations should not only cover total blindness, but also include experiences that simulate low vision and tunnel vision, which are common characteristics of visual impairment.

In terms of teaching tools for disability simulation, tools used during these experiences, such as eye masks and balls, are typically readily available within the school or can be easily procured in Taiwanese elementary schools. However, the tools used for visual impairment and physical disability simulations, such as braille, night vision goggles, goal balls, wheelchairs, and boccia, are more challenging to prepare in Japanese elementary schools. Moreover, this study showed that 68% of Japanese elementary school teachers reported "difficulties in securing and preparing the necessary materials and equipment" as a significant challenge. Ochi et al. highlighted the difficulty in securing materials such as experience kits in elementary schools[33)]. Furthermore, this study showed that 55% of disability simulations were implemented by external lecturers. Since external lecturers already possess the necessary equipment, such as wheelchairs, it is feasible to implement diverse simulation experiences for specific disabilities. Therefore, the development and preparation of experience kits, teaching tools, and instructional manuals is essential for schoolteachers to conduct these simulations effectively.

When comparing the reasons for not conducting disability simulations in Taiwan and Japan, the option "don't know how to do it because it's specialized" was selected by none in Taiwan, but by 40 (49%) in Japan (Table 5). There were three free descriptions of "Lack of

teacher awareness & preparation" (Table 6). According to Chen et al., over 70% of mainstream teachers in Taiwan received more than three hours of training[12]. According to the Current Status and Issues of Teachers' Expertise in Special Needs Education, 58.8% of teachers received training in special needs education from 2003 to 2008. However, many regular classroom teachers reported a lack of understanding, knowledge, and experience in developmental disabilities, and that it was important to take classes from the perspective of special needs education in each subject[39]. Kitayama summarized previous studies on comparative culture and observed a tendency for self-criticism and more humility in Japan[40]. Therefore, in this study, it was presumed that Taiwan and Japan differed in their answer regarding "don't know how to do it because it's specialized." However, Yasuzato pointed out that it is necessary to enhance training to promote disability understanding among faculty and staff due to their lack of understanding of disabilities[34]. Moreover, Su et al. highlighted the need to increase the quality of training (e.g., teaching methods used in schools) and opportunities (e.g., long-term workshops) related to special education in Taiwan[41]. Therefore, this highlights the importance of teacher training programs and enhancing regular class teachers' expertise related to understanding disabilities, such as disability simulation.

4. Difficulties in conducting disability simulation among teachers in Taiwan and Japan

In terms of difficulties in conducting disability simulation experiences, both Taiwan (50%) and Japan (69%) reported experiencing difficulties. There are significant differences in "cannot ensure safety due to a lack of personnel (p=.008)" and "difficulties in securing and preparing the necessary materials and equipment (p=.021)". In Taiwan, teachers cited "cannot ensure safety due to a lack of personnel" (83%) as the main difficulty. Lin showed similar findings, indicating that primary schools in Taipei face challenges due to a shortage of staff and limitations on who can conduct such simulations[15]. Previous studies have emphasized the necessity of collaboration among school staff [14),35] and the importance of connections with external organizations[37]. In comparison to Japan, teachers in Taiwan tend to rely more on collaborations within their schools rather than with external lecturers from external organizations. Therefore, Taiwanese elementary schools should enhance collaboration among school staff and establish connections with external organizations. Additionally, it is recommended to develop partnerships with external organizations in order to enhance the quality of these simulations and provide more specialized experience content.

However, Japanese elementary school teachers reported "difficulties in securing and preparing the necessary materials and equipment (68%)" as their major challenges. It revealed a tendency to rely on external instructors in Japan. Furthermore, Nishidate et al. highlighted the importance of securing wheelchairs and making course arrangements for such experiences[42]. Higuchi et al. found that many teachers found it was challenging to choose appropriate instructional content as well as prepare the necessary materials and tools[8]. Compared to Taiwan, Japan has a variety of experiences within a single type of disability, most likely due to the availability of specialized external instructors. There are

various challenges in Japan, including establishing connections with these instructors and securing the necessary materials. In addition, despite a tendency to conduct disability simulations in collaboration with external institutions, there are concerns about securing the appropriate materials and planning. This suggests the importance of ensuring the availability of resources and smooth cooperation with external organizations for a successful disability simulation.

5. Limitation of This Study

This study had a notably low response rate (20%). It is considered that the low response rate was the result of the survey design, time constraints, the distribution method of survey, and the interest of disability-related topic. This survey included large proportion of free-description questionnaires, so it may be related to low response rate. The previous study has revealed that teachers feel burdened by responsibilities extending beyond teaching, which leads to stress[42]. Teachers at elementary schools affiliated with national universities in Taiwan and Japan may have felt burdened with answering questions during business hours and felt, which could lead to biased results due to the significant difference in response rates between Taiwan and Japan. The distribution method of survey in this study is mail survey and there is a high possibility that recipients will ignore the questionnaire, leading a low response rate[43]. Moreover, this method is problematic when recipients are not interested with the topic of survey[43]. The topic of disability simulation may not have been perceived as directly relevant or interesting to all participants in this survey[44]. Those factors mentioned above could all potentially contribute to the low response rate in this study.

Additionally, since this study focused on university-affiliated elementary schools in Japan and Taiwan, a lead bias may be present in the results for other elementary schools.

Acknowledgements

The authors express their deepest gratitude to the elementary schools affiliated with national universities in Taiwan and Japan for taking time out of their busy schedules to complete the questionnaires.

The authors express their deepest gratitude to Professor Emeritus Masayoshi Tsuge and his lab. This research was conducted at the University of Tsukuba under the supervision of Professor Emeritus Masayoshi Tsuge. This study is based in part on a master's thesis submitted to the Graduate School of the University of Tsukuba in 2023.

References

1) Kato M & Takeda T. A proposal for the implementation of a proposal of plan for special needs understanding education in elementary school. *Graduate School of Teacher Education Wakayama University bulletin of Course Specializing in Professional Development in Education*. 2018, 2, 159-167. DOI: 10.19002/AA12779311.2.159
2) National Institute of Special Needs Education. *Research on the Development of Professional Skills and Training Curriculum in Inclusive Education Systems*. 2013, Tokkyoken, C-91. https://www.nise.go.jp/cms/7,8611,32,142.html.
3) Iwata N. Simulation Exercises in Disability Awareness Training: Reinforce the Limitations of Conventional Individualistic Approaches to Disability. *The Okinawa International University journal of culture and society*. 2006, 9(1), 47-68.
4) Murakami R, Fukumoto H, Ujina K, Hayashida M, Tanimoto T, Funabashi A, et al. A Study of the Efficacy of Lectures Incorporating the Handicap Simulation Activities in the Department of Education. *The Bulletin of the Center for Special Needs Education Research and Practice Graduate School of Education, Hiroshima University*. 2016, 14, 87-95. DOI: 10.15027/39727
5) Herbert J. Simulation as a Learning Method to Facilitate Disability Awareness. *Journal of Experiential Education*. 2000, 23(1), 5-11. DOI: 10.1177/105382590002300102
6) Tsutsumi Y, Imaeda F, Yamamoto T, & Kanamori Y. Pilot Study of the Current Circumstances of a Program for Understanding Disorders and Involving Practical Tasks: A Report of Lesson Practice in Regular Classes (2nd Report). *Memoirs of Osaka Kyoiku University, Ser.IV Education, Psychology, Special Support Education and Physical Culture*. 2009, 58(1), 81-102. DOI: 10.32287/TD00009863
7) Imaeda F, Kusunoki K, & Kanamori Y. A Study on Conditions of Special Needs Understanding Education in Local Ordinary Elementary and Junior High Schools (1st Report)-Based on Surveys of the Status of the Implementation and the Awareness of Teachers-. *Memoirs of Osaka Kyoiku University, Ser.IV Education, Psychology, Special Needs Education and Physical Education.* 2013a, 61(2), 63-76. DOI: 10.32287/TD00027428
8) Koki H, Hayashida M, Kawahara A, & Shinkai A. Status of Implementation and Issues of Classes on Disabilities in Public Elementary Schools: Questionnaire Survey toward Teachers in Charge. *The Bulletin of the Center for Special Needs Education Research and Practice, Graduate School of Humanities and Social Sciences, Hiroshima University*. 2021, 19, 1-12.DOI: 10.15027/50711
9) Huang HY. The Study of Special-Education Propaganda Executed by the Primary Schools in Taitung County. Unpublished master's thesis, National Taitung University, Taitung, Taiwan. August 2017. https://hdl.handle.net/11296/6652z8

10) McKenney A. Attitude Changes Following Participation in Disability Simulation Activities. *Therapeutic Recreation Journal*. 2018, 52(3), 215-236. DOI: 10.18666/TRJ-2018-V52-I3-8543
11) Ministry of Education. *Yearbook of Special Education Statistics the Republic of China in 2022.* 2022, Ministry of Education Publishing, Taipei, Taiwan.
12) Chen H & Tsuge M. Inclusive Education Practices in Taiwan. In K. Koreeda, M. Tsuge, S. Ikuta, E. Dalton, & L. Ewe (Eds.), *Building Inclusive Education in K-12 Classrooms and Higher Education: Theories and Principles*. 2023, IGI Global.
13) Jian X, Huang G, & Chen J. An Analysis of the Effectiveness of Peer Acceptance Program in Promoting Peer Assistance Behavior for Students with Intellectual Disabilities in Elementary School Classes. *Annual Journal of the Special Education Association of the Republic of China*. 2014, 103, 179-191. https://www.airitilibrary.com/Article/Detail?DocID=a0000110-201411-201501210011-201501210011-179-191
14) Qiu, Y. Inclusive Education and Special Education Advocacy on Schools. Student Affairs and Guidance Counseling. 2021, 59(4), 63-67. DOI: 10.6506/SAGC.202103_59(4).0007
15) Lin Y. Teachers' Perceptions on the Implementation and Effectiveness of the Advocacy Activities for Inclusive Education in Elementary Schools in Taipei. Unpublished master's thesis, University of Taipei, Taipei, Taiwan. June 2013. https://hdl.handle.net/11296/6d6tkm
16) Yang B. & Zhong L. The effectiveness of "introduction for children with special needs" activities in the acceptance of children with special needs among 2nd grade students *Bulletin of Eastern-Taiwan Special Education.* 2006, 8, 71-95. https://special.moe.gov.tw/periodicalInfo.php?guid=C00582EB-57D7-4127-AADE-AC69887743CF&paid=1015&_g=F539E768-96EF-4F17-ADEA-1229F3D9C069&_p=38&token=c493748b3ca5157b11f4e9672d09e7c5
17) Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2012) Promotion of Special Needs Education for Building an Inclusive Education System Towards the Formation of a Cohesive Society (Report). https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/044/houkoku/1321667.htm (15, June 2024)
18) Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2010). Special Needs Education Materials. https://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2013/10/04/1309803_1.pdf. (15, June 2024)
19) Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2020). Special Needs Education Materials. https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/044/attach/1321668.htm (15, June 2024)
20) Tanabe S. & Hosoya K. "Practical Research on 'Thinking and Activity-based' Lessons in Disability Understanding Education for Elementary School Students." *Journal of Special Needs Education in Hokkaido.* 2017a, 11, 1-13. DOI: 10.50964/jsneh.11.0_1

21) Murata H, Suzuki K, Fujishima S, & Hosoya K. "Practical Lessons for Promoting Understanding of Disabilities through School Interactions between Elementary and Special Support Schools." *Journal of Special Needs Education in Hokkaido*. 2016, 10, 1-9. DOI: 10.50964/jsneh.10.0_1

22) Imaeda F, Kusunoki K, & Kanamori Y. A Study on Conditions of Special Needs Understanding Education in Local Ordinary Elementary and Junior High Schools (2nd Report) - Based on Analysis of the Status of the Implementation as Suggested by the Type of Disabilities -. *Memoirs of Osaka Kyoiku University, Ser.IV Education, Psychology, Special Needs Education and Physical Education.* 2013b, 62(1), 75-85. DOI: 10.32287/TD00027680

23) Hurst C, Corning K, & Ferrante R. Children's acceptance of others with disability: The influence of a disability-simulation program. *Journal of Genetic Counseling*. 2012, 21(6), 873-883. DOI: 10.1007/s10897-012-9516-8

24) Yamamoto T. Practice for Understanding Handicaps toward Elementary-School-Level Students: Effect of 'Can-Do' Simulation. *Bulletin of Tsukuba International University.* 2003, 9, 61-81. DOI:10.20843/00000149

25) Burgstahler S. & Doe T. Disability-related simulations: If, when, and how to use them in professional development. *Review of Disability Studies: An International Journal*. 2004, 1(2). https://www.researchgate.net/publication/245938386

26) Matsubara T, & Sato T. Reconstruction of disability simulation experiences: Collaborative experience of Disability. Journal of volunteer stud*ies*. 2011, 11, 85-98. DOI:10.24800/isvsjapan.11.0_85

27) Flower A, Burns MK, & Bottsford-Miller NA. Meta-analysis of disability simulation research. *Remedial and Special Education*. 2007, 28(2), 72-79. DOI: 10.1177/07419325070280020601

28) Jeon M. Meta-Analysis of Disability Simulation Research for Elementary Students in Korea. *International Journal of Special Education*. 2018, 33(1), 140-151.

29) Mitchell D. Contextualizing inclusive education: Evaluating old and new international perspectives. *Routledge*. 2005.

30) Naoyuki K, Ryoji N, Masaktsu I, & Keiichi S. A Consideration Analysis Method for Free Writing Document with KW-Method. *Journal of Civil Engineering Information Processing System*. 1995,4,1-8. DOI: 10.11532/journalac1992.4.1

31) Lin S. Special Education in Taiwan. *Journal for the study of Japanese language education practice.* 2017, 4, 71-90. DOI: 10.14992/00014818

32) Ono S. Vision impaired simulation in school education: implementation and details. *Understanding Special Need.* 2007, 9, 83-92. https://ndlsearch.ndl.go.jp/books/R000000004-I8976508

33) Ochi M, Komatsu K, & Hosoya K. Survey on the Implementation Status of Visual Impairment Understanding Education for Elementary Schools. *Journal of Hokkaido University of Education（Clinical Research in Education）,* 2023, 73(1), 107-118. DOI: 10.32150/00010853

34) Nagaie K & Fujita K. A review on training of practical ability about education for deepening awareness of issues relating to disabilities and people with disabilities. *Archives of Yamaguchi Prefectural University.* 2021, 14, 1-8. https://ypir.lib.yamaguchi-u.ac.jp/yp/1641
35) Sano M, Sekihara M. A survey on the necessity and implementation of education to understand disability. *Bulletin of Teaching Profession Graduate School Joetsu University of Education.*2022, 9,131-141. http://hdl.handle.net/10513/00008422
36) Japan Association of National Universities (2019) Survey on the Current Status of National University-Affiliated Schools in FY 2018 (Basic Survey) February 2019. https://www.jaue.jp/_src/883/8ca48b868a8893ae_8d9197a791e58aw958d91ae8aw8dz898082c98ad682b782e98ec091d492b28db881i955c8e8695t82ab81j.pdf
37) Yasuzato, T. A Basic Study on the Issues of Disability Understanding Education in Elementary and Junior High Schools-From the research after "Understanding Disability: Theory and Practice of Barrier-free Mind"-. *The Journal of Understanding Special Needs.*2023,24, 15-30. http://bfree.no.coocan.jp/jsrikai/img/NO_J24-2.pdf
38) Taguchi T, Hayashi A, Hashimoto S, Ikeda K, Otomo K, Kanno A, et al. A basic study to construct the special education program in the teacher-training courses of University: Knowledge and understanding of persons with disabilities and handicaps: A Study of teacher-training course students. *Bulletin of Tokyo Gakugei University*. 2012, 63(2), 303-319.
39) Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2010). Special committee on the status and challenges of special education expertise for teachers (4th session, Distribution Material No. 8). https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/044/attach/1298226.htm. (7, November 2023)
40) Kitayama S. Cultural self-concepts and psychological processes (Special Issue: Intercultural Psychology and Cultural Psychology). *Social Psychology Research*. 1995, 10(3), 153-167. DOI: 10.14966/jssp.KJ00003724647
41) Su Y. & Wang T. Challenges of Inclusive Education: Experiences from Regular Classroom Teachers. *Bulletin of Special Education*. 2003, 24, 39-62.
42) Nishidate A, Miyata N, Tokuda K. Wheelchair Exercises in Elementary School Education: A Survey of Teachers' Understanding, Awareness, and Teaching about Special Needs. *Bulletin of the Faculty of Human Development Sciences, University of Toyama*. 2012, 7(1), 51-60. DOI: 10.15099/00000823
43) Tagami F., Junko Y, & Terumi T. Teachers' mental health: A review. *Annual Report of Educational Psychology in Japan.*2004 43(0), 135-144. DOI: 10.5926/arepj1962.43.0_135
44) Suzuki A. Questionnaire design. *Nakanishiya Shuppan co.ltd*. 2016, Kyoto, Japan.
45) Groves R, Fowler Jr, Couper M, Lepkowski J, Singer E, & Tourangeau R. Survey Methodology. *John Wiley & Sons, Inc.* 2009, Hoboken, New Jersey.

Journal of Inclusive Education

EDITORIAL BOARD

Journal of Inclusive Education

Vol.13 August 2024

Presidents | Masahiro KOHZUKI & Injae LEE

Publisher | Asian Society of Human Services
50-1, Shimotsukiyamacho, Murasakino, Kita-ku, Kyoto-city, Kyoto, 603-8222, Japan
E-mail: ashs201091@gmail.com

Production | Asian Society of Human Services Press
50-1, Shimotsukiyamacho, Murasakino, Kita-ku, Kyoto-city, Kyoto, 603-8222, Japan
E-mail: ashs201091@gmail.com

Journal of Inclusive Education
Vol.13 August 2024

CONTENTS

Original Articles

Activity Report

Published by
Asian Society of Human Services
Kyoto, Japan