International Journal of Education and Practice
2023 Vol. 11, No. 3, pp. 486-499
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/61.v11i3.3427

A comparative study of teaching strategies in inclusive elementary classrooms in Indonesia, Taiwan, Thailand and the USA

Jiraporn Chano[1+]
Chi Cheng, Wu[2]
Herli, Salim[3]
Kritzer, Jeffrey[4]

[1]*Faculty of Education, Mahasarakham University, Thailand.*
Email: jiraporn.j@msu.ac.th
[2]*College of Creative Media, Kun Shan University, Taiwan.*
Email: deakinroy@gmail.com
[3]*Universitas Pendidikan Indonesia, Serang, Indonesia.*
Email: herlisalim@upi.edu
[4]*Department of Teacher Education, University of Nebraska, Kearney, USA.*
Email: kritzerjb@unk.edu

(+ Corresponding author)

Article History
Received: 16 March 2023
Revised: 4 July 2023
Accepted: 21 July 2023
Published: 18 August 2023

Keywords
Disability
Inclusion
Regular teachers
Special educational needs
Teaching strategies.

ABSTRACT

The teaching strategies for inclusive elementary schools can differ between countries due to a combination of cultural, educational and systemic factors. Understanding these differences is essential for developing effective teaching strategies that meet the diverse needs of all students. Therefore, this study aimed to compare teachers' teaching strategies in inclusive elementary classrooms in Indonesia, Taiwan, Thailand and the USA. A questionnaire with 14 teaching strategies, designed with five-point options, was administered to collect data. A total of 171 respondents were recruited: 50 each from Indonesia, Taiwan and Thailand, and 21 from the USA. Descriptive statistics, one-way analysis of variance and Tukey's post hoc test were applied to examine the frequency of teaching strategies and test for any significant differences among the four countries. The results showed that the respondents in the participating countries demonstrated preferences for certain strategies, and significant differences were found among the countries. While the strategies used may differ from country to country, the goal remains the same: to create an inclusive learning environment that meets the needs of all students. Ultimately, inclusive education not only benefits students with disabilities but also contributes to creating a more diverse and inclusive society.

Contribution/Originality: This study is one of the few studies that systematically compare regular elementary teachers' preferred strategies in addressing a broad range of students' learning needs. It may help researchers understand how the development history of special education and the deficit perspective shape teaching practice.

1. INTRODUCTION

Inclusive education has become a significant agenda in the international community, as the United Nations has made a series of declarations to create equal education for all students (e.g., (UNESCO, 1994, 2008; United Nations, 2006; United Nations Committee on the Rights of Persons with Disabilities, 2016)). It is required that all students receive education alongside their peers in regular educational settings, regardless of linguistic, cultural, disability or racial background—that is, create an Education for All (UNESCO, 1994). One main concern is drawn to students with disabilities, who are vulnerable to being marginalised in educational practice due to their exceptional learning needs. This trend has stimulated many countries to stipulate laws to guarantee the educational engagement of students with disabilities or incorporate inclusive education into the legislation at present (Ediyanto et al., 2021;

Taiwanese Ministry of Education, 2019; Vorapanya & Dunlap, 2014). For example, in Thailand, the education regarding students with disabilities is profoundly impacted by the international inclusive education movement, while in Taiwan, inclusive education was later incorporated into the legislation.

Meanwhile, plenty of studies have been introduced to enhance students' learning in mainstream classes (e.g., (Brede, Remington, Kenny, Warren, & Pellicano, 2017; Duran, Zhou, Frew, Kwok, & Benz, 2013; Florian & Rouse, 2009). The outcome of inclusive education hinges on many contextual factors, among which teachers' expertise is proven to decisively determine the outcomes of students' performances in mainstream classes (e.g., (Sharma, Forlin, Deppeler, & Yang, 2013; Sharma & Jacobs, 2016; Srivastava, De Boer, & Pijl, 2015; Waitoller & Artiles, 2013; Wray, Sharma, & Subban, 2022). Accordingly, pre- and in-service programmes were implemented to strengthen teachers' knowledge and skills in addressing the challenges of including students with disabilities (Florian & Rouse, 2009; Lancaster & Bain, 2010; McCrimmon, 2015; Srivastava et al., 2015).

On the other hand, applying teaching strategies is subject to a country's distinctive conditions, such as educators' beliefs, social conventions and resources. Therefore, each country may present a unique profile of teaching practice, which could provide valuable lessons and insights. Moreover, educational practice is dynamic, and instant review is essential to improve inclusive practice. Therefore, this study aimed to figure out and compare the differences in teaching strategies in Indonesia, Taiwan, Thailand and the USA. Due to the religious and economic differences, this study presented multiple-facets of teaching practice regarding inclusive education

Accordingly, the following research questions were suggested to guide the study namely: What frequency of teaching strategies was practiced by regular elementary teachers in Indonesia, Taiwan, Thailand and the USA? Did regular elementary teachers in Indonesia, Taiwan, Thailand and the USA significantly differ in their teaching strategies?

2. LITERATURE REVIEW

2.1. Indonesian Context

The international trend is propelling the progress of inclusive education. In 1997, the government ratified the 'Law of Persons with Disabilities' to fulfil the ideal of education for all, as declared in the Salamanca Statement in 1994, a United Nations' joint declaration. Significantly, the law explicitly mandated the right of 'students with disabilities' to access education. Furthermore, in 2002, the 'Protection of Children' law was stipulated, enabling students with disabilities to choose enrolment in regular schools (Wibowo & Muin, 2018). In addition, inclusive education was propelled as the government laid out the 2019–2024 working plan in 2016 to push for inclusive education (UNESCO, 2023).

These legislations led to a surge of students, including those from regular schools. For instance, in 2003, each province was urged to choose at least four regular schools, from primary to senior high level, and vocational schools to enrol students with special educational needs (SEN) (Efendi, 2018). In 2008, 925 regular schools accepted the enrolment of students with disabilities, and the number leaped to 32,000 in 2017. However, this still left the demand of 1.6 million students with disabilities far behind (Hasugian, Gaurifa, Warella, Kelelufna, & Waas, 2019). It was estimated that merely one in ten students with disabilities had the opportunity to receive a school education (Aprilia, 2017).

Studies reveal that often resources fall far short of the needs of students with disabilities (Ediyanto, Punnachaiya, & Sumonsiri, 2017; Notoprayitno & Jalil, 2019; Sari, Sarofah, & Fadli, 2022). Specifically, students with disabilities have to struggle to receive essential assistance equipment, such as hearing aids and glasses, and school buildings are not built with ramps and elevators. As for teachers' expertise, they are not yet well-prepared to counter the challenges of including students with disabilities. To curb this situation, resource shortages in urban areas are being alleviated (Mulyadi, 2017; Sari et al., 2022). Sari et al. (2022) pointed out that urban teachers were competent in including students with disabilities, including in class management skills, curriculum modification,

adoption of alternative assessments and implementing effective strategies. Governmental financial and human support had also increased. However, outside cities, teachers' competency and human resources were too scant to attend to the needs of students with disabilities.

2.2. Taiwanese Context

Modelling upon the IDEA in the USA to protect the educational rights of students with disabilities, the Special Education Act in Taiwan was initially ratified in 1984. Until 2023, the Act has experienced nine revisions, laying out substantial frameworks and crafting special education programmes for the Taiwanese. Until now, the Taiwan government has enacted many laws to help the learning of students with disabilities. The contents cover a wide range of dimensions, including pedagogy, curriculum, transition, (para)medical therapy, transportation, early intervention, due process and so forth (Taiwanese Ministry of Education, 2019). For example, one Act demanded the statutory elements of an Individualised Educational Plan (Taiwanese Ministry of Education, 2019), while another subordinative law details diagnosis standards and procedures (Taiwanese Ministry of Education, 2019).

Inclusive education is typically interpreted as a regular class, serving as an option for placing students with disabilities (authors). When determining an educational setting for students with disabilities, a regular school in the neighbourhood is required as a priority under the law (Taiwanese Ministry of Education, 2019). However, a student may be placed in other settings if the regular school cannot accommodate their needs. However, no enforcement is stated concerning adjustments to fit a student's needs. In a sense, it becomes highly flexible and even somewhat subjective when deciding on an educational setting for a student with a disability.

The parallel between regular and special education is consolidated as the Act states the statutory financial allocation of 4.5% and 5.0% of the annual budget in the central and local governments (Taiwanese Ministry of Education, 2019). However, the prosperity of special education seems not to have brought about teachers' welcoming attitudes towards including students with disabilities. For example, a recent survey (Wu, Salim, Chang, & Chano, 2022). indicated that Taiwanese preschool teachers demonstrated a slightly less favourable attitude towards including students with disabilities than their Indonesian counterparts, even though both countries have slightly welcoming attitudes in other words, the parallelism may cause regular teachers to think that special teachers are more competent at instructing students with disabilities.

2.3. Thai Context

The education of students with disabilities in Thailand is primarily stimulated and guided by the spirit of 'Education for All', specified in the Salamanca Statement in 1994 (Hill & Sukbunpant, 2013; UNESCO, 1994). Even though Thai legislation for students with disabilities began in the late 2000s, inclusive education has become one of the national educational goals within a decade (Hill & Sukbunpant, 2013). This does not mean that no education was provided to students with disabilities before the enactment of legislation related to students with disabilities. For example, in 1978, a programme was launched to accept students with disabilities into regular schools (Techasrivichien, 2005). Thai educational rights for students initially aimed to ensure access to schooling, which began in 1999 when 'the National Education Act Buddhist Era (B.E). 2542' was ratified, proclaiming a free 12-year education for students with and without disabilities aged from 7 to 16. In 2004, 390 model schools for inclusion were set up to develop inclusive education. Subsequently, 'the First Education for Disabilities Act Buddhist Era (B.E.) 2551' was ratified in 2008, which specified that students with disabilities could choose to enrol in regular classes and that schools needed to design an IEP for them (Hauwadhanasuk, Karnas, & Zhuang, 2018; Hill & Sukbunpant, 2013). Furthermore, in 2017, inclusive education was written into one of the goals of the 2017 to 2036 National Educational Plan (UNESCO, 2023). However, educational practice takes time to keep pace with the legislation's requirements. Some literature listed obstacles to inclusion, including insufficient equipment, building infrastructure, teacher expertise, in-service and pre-service training, school atmosphere and leadership (e.g.,

(Hauwadhanasuk et al., 2018; Vibulpatanavong, 2017)). Moreover, teachers had difficulties developing an IEP for students with disabilities and modifying the curriculum. However, most regular teachers tended to accept students with disabilities to study in their classes (Agbenyega & Klibthong, 2015) and were willing to increase teaching professions related to addressing inclusion (Agbenyega & Klibthong, 2014).

2.4. American Context

The provision of free and public education for students with disabilities in the USA began with the enactment of the Education for All Handicapped Children Act in 1975, which was later renamed as Individuals with Disabilities Education Act (IDEA) in 1990 (Streett, 2019). With nearly half a century of development, an increasing number of students are covered under IDEA every year, with most enrolling from inclusive environments. For example, in the 2020–2021 school year alone, over 7.5 million students received special education and related services, with 66% of them from regular classes (National Center for Education Statistics, 2020).

To enhance teachers' expertise in inclusive education, IDEA requires all teachers, including regular teachers, to study special education courses, master curricula and assessment adjustments and implement differentiated instruction. However, some studies still indicate that regular teachers feel unprepared to deal with students with disabilities (Martin, Losen, & Belfiore, 2014; Pan & Tan, 2018). Thus, ongoing support, including continued professional development programmes, is considered crucial to ensure the quality of inclusive education (Cook & Odom, 2013; Hocutt & Algozzine, 2017). IDEA articulates the concept of the least restrictive environment, which means maximising the potential for students with disabilities to study with non-disabled peers, as the far-reaching principle of placing a student with a disability. In this sense, inclusive classes are the only option, and alternative part-time exclusion or segregation might be seen as appropriate for some students with disabilities. The continuum of alternative placements has prevailed until now, including regular classes, resource rooms, special classes and special schools. In this sense, inclusive education works as one option and, at best, a priority.

3. METHOD

3.1. Participants

The respondents of this study are regular teachers in inclusive elementary classrooms in Indonesia, Taiwan, Thailand and the USA, using a purposive sampling technique. It is a non-probability sampling technique where the researcher selects participants for a study based on specific criteria or characteristics. The reason for utilizing purposive sampling technique was to select participants who were most likely to provide the information that is needed to answer the research questions. Therefore, the teachers at the elementary schools affiliated with the researchers' universities were invited to fill the questionnaires. Meanwhile, to balance the number of the participants, 50 participants from each country was set as the goal. Eventually, a total 171 teachers were involved in the survey, 50 each from Indonesia, Taiwan and Thailand, and 21 from the USA.

3.2. Instrument

The questionnaire developed by Kritzer (2014) was used as the tool to collect data since it was initially developed to survey the teaching strategies practiced in regular school across different countries. It consisted of two parts. The first one included eight questions to collect information on respondents (e.g., gender, teaching years, educational background) and extra resources to address the diverse needs of students' backgrounds (e.g., visiting teachers, withdrawing practice). The second part contained 14 questions concerning a list of strategies that included differentiation, peer-tutoring, cross-age, cross-grade, one-to-one, parental professional development (PD), rewarding, seat-adjustment, pre-teaching, visual cues, test skills, self-advocacy, learning corners and relaxing skills that are adopted by teachers in classrooms. Each question was designed with five interval options (i.e., hardly,

yearly, monthly, weekly and daily), and the respondent was asked to choose one that appropriately matched the frequency of the strategy typically practiced.

3.3. Data Analysis

The SPSS package 28 (IBM Corp, 2020) was used to run the statistical analysis. First, descriptive statistics was used to measure basic features of the data, such as mean, standard deviation (SD) and frequency. Further, the one-way analysis of variance (ANOVA) was conducted to test any significance between the participating countries. If any statistical significance occurred, then a Tukey's honest significant difference (HSD) Test was performed to identify which groups significantly differed.

4. RESULTS

There were 171 regular elementary teachers involved in this survey. Table 1 depicts the demographic information of the participants according to their countries. A total of 50 respondents were sampled each from Indonesia, Taiwan and Thailand, while 21 teachers were sampled from the USA. The ratio of females to males was 7:3.

Generally, females accounted for approximately 65% of each country's participants, except for a much higher proportion of 82% in Indonesia. The participants were distributed across each grade, with the most significant proportion (nearly 30%) in grade 6, the smallest proportion (around 10%) in grade 4 and the other grades in between. Teaching experience covered a broad range of teaching years, with 16.3% within 7 years, 11.1% between 8 and 12 years, 33.7% between 13 and 20 years and 39.8% over 21 years.

As to student numbers in the class, Indonesia, Taiwan and the USA reported an average of around 25 students, while Thailand reported a higher enrolment of 33. All American and nearly all Taiwanese teachers indicated that the class included certain students who needed extra help in terms of literacy and/or mathematics. In addressing the diversity of teaching practice, 86%, 85% and 74% of Taiwanese, American and Thai teachers, respectively, reported that the pull-out programme was practiced, as opposed to only 8% of Indonesian teachers. Further, more than half of the Indonesian respondents and 40% of the American counterparts indicated they regularly received assistance from visiting teachers. In contrast, only 8% and 16% of the Taiwanese and Thai counterparts stated this service.

Table 1. Participants' background by country.

Variable	Level	Indonesia (%)	Taiwan (%)	Thailand (%)	USA (%)	Total (%)
Gender	Male	9 (18.0)	18 (36.0)	17 (34.0)	7 (33.3)	51 (29.8)
	Female	41 (82.0)	32 (64.0)	33 (66.0)	14 (66.7)	120 (70.2)
Teaching years	0–7	13 (26.0)	8 (16.0)	4 (6.0)	4 (19.1)	29 (16.3)
	8–12	11 (22.0)	2 (4.0)	2 (4.0)	4 (19.0)	19 (11.1)
	13–20	10 (20.0)	24 (48.0)	16 (32.0)	6 (28.5)	56 (33.7)
	>21	16 (32.0)	16 (32.0)	29 (58.0)	7 (33.3)	23 (39.8)
Grade	1st	8 (16.0)	7 (14.0)	7 (14.0)	1 (4.8.1)	23 (13.5)
	2nd	11 (22.0)	6 (12.0)	0 (0.0)	2 (9.5)	19 (11.1)
	3rd	11 (22.0)	10 (20.0)	3 (6.0)	5 (23.8)	29 (17.0)
	4th	4 (8.0)	7 (14.0)	2 (4.0)	4 (19.3)	17 (9.9)
	5th	5 (10.0)	12 (24.0)	13 (26.0)	3 (14.3)	33 (19.3)
	6th	11 (22.0)	8 (16.0)	25 (50.0)	6 (28.6)	50 (29.2)
Students	No.	24.9	25.66	33.22	23.33	27.36
Learning disability	Yes	34 (68.0)	48 (96.0)	40 (80.0)	21 (100)	143 (83.6)
	No	16 (32.0)	2 (4.0)	10 (20.0)	0 (0.0)	28 (16.4)
Withdrawal	Yes	4 (8.0)	43 (86.0)	37 (74.0)	18 (85.7)	102 (59.8)
	No	46 (92.0)	7 (14.0)	13 (26.0)	3 (14.3)	69 (40.4)
Visiting teacher	Yes	26 (52.0)	6 (12.0)	8 (16.0)	8 (38.13)	48 (28.1)
	No	24 (48.0)	44 (88.0)	423 (84.0)	13 (61.9)	123 (71.9)

Table 2 shows 14 strategies practice by four countries. Cross-age grouping, cross-grade grouping, and parental PD were universally the least employed strategies across the countries. Furthermore, each country had preferences and disinclinations for certain strategies.

The data show that Indonesian teachers have a high mean score for several strategies, such as peer-tutoring (M = 4.06) and relaxation skills (M = 4.26), which tended to be practiced weekly. Other strategies that were employed nearly every week included learning corners (M = 3.82), self-advocacy (M = 3.88), test skills (M = 3.68) and the rewarding system (M = 3.54).

One-to-one instruction (M = 3.42), pre-teaching (M = 3.42), visual cues (M = 3.42), differentiated instruction (M = 3.04) and seat adjustment (M = 3.18) were practiced slightly more commonly than monthly. Apart from that, across-grade grouping (M = 2.74), parental PD programmes (M = 2.54) and across-age grouping (M = 2.12) were the least used in teaching practice.

Obviously, cross-age grouping scored below the median at 2.50. In Taiwanese terms, one-to-one instruction was the most prevalent (M =4.24). The other common strategies included the rewarding system (M = 3.98), pre-teaching (M = 3.84), peer-tutoring (M = 3.72), visual cues (M = 3.58), test skills (M = 3.56) and self-advocacy (M = 3.54).

These strategies were practiced more often than monthly, leaning towards weekly. Relatively, differentiated instruction (M = 3.02), seat adjustment (M = 3.12) and relaxation skills (M = 3.18) were utilised slightly more often than monthly.

Furthermore, learning corners (M = 2.96) were nearly utilised monthly, while parental PD programmes (M = 2.58) were used more frequently than yearly, leaning towards monthly. The least employed strategies were sequenced as cross-age grouping (M = 1.24) and cross-grade grouping (M = 1.26), indicating that teachers hardly employed these strategies.

The Thai teachers reported a low frequency of practicing several strategies in Thailand. The frequently practiced strategies included the following: one-to-one (M = 3.86), peer-tutoring (M = 3.72), pre-teaching (M = 3.58), visual cues (M = 3.54), learning corners (M = 3.52), self-advocacy (M = 3.46), relaxing skills (M = 3.34) and rewarding (M = 3.30).

These strategies were used more often than monthly. In comparison, differentiated instruction (M = 2.52), test skills (M = 2.94), seat adjustment (M = 2.94) and cross-age grouping (M = 2.70) were generally used less than monthly. Additionally, cross-grade grouping (M = 1.92) and parental PD programmes (M = 1.94) were only practiced once per year.

Regarding the USA, differentiated instruction (M = 4.71) and visual cues (M = 4.86) were the most commonly used strategies and were almost utilised daily. Other strategies used more than weekly included seat adjustment (M = 4.48), self-advocacy (M = 4.24), rewarding (M = 4.24), learning corners (M = 4.24), pre-teaching (M = 4.14) and relaxing (M = 4.05). Peer-tutoring (M = 3.81) and test skills (M = 3.67) were also utilised more often than monthly and leaned towards weekly. Even so, the scores were still above 3.5 points, indicating that both strategies were used frequently. Additionally, cross-age grouping (M = 1.60), parental PD programmes (M = 1.86) and cross-grade grouping (M = 1.90) were less commonly practiced in the American context.

Overall, most of the teaching strategies in inclusive elementary classrooms have been applied successfully among the teacher in Indonesia, Taiwan, Thailand and the US. However, three teaching strategies have recorded an overall low mean score: cross-age (M = 1.97), cross-grade (M = 196) and parental PD (M = 2.29).

For cross-age, Indonesia, Taiwan and the USA recorded a low score and the least practice among the teachers. While cross-grade, the three countries that include Taiwan, Thailand and the USA show a low score. Finally, there are two countries (Thailand and the USA) that have recorded a low mean score for Parental PD.

Table 2. Practicing several strategies.

Strategy	Country	*N*	*M*	SD	Score
Differentiation	Indonesia	50	3.04	1.124	High
	Taiwan	50	3.02	1.491	High
	Thailand	50	2.52	1.165	High
	USA	21	4.71	0.902	High
	Total	171	3.09	1.384	High
Peer-tutoring	Indonesia	50	4.06	0.793	High
	Taiwan	50	3.72	1.356	High
	Thailand	50	3.72	0.784	High
	USA	21	3.81	1.123	High
	Total	171	3.83	1.029	High
Cross-age	Indonesia	50	2.12	1.118	Low
	Taiwan	50	1.24	0.657	Low
	Thailand	50	2.70	1.282	High
	USA	20	1.60	1.273	Low
	Total	170	1.97	1.218	Low
Cross-grade	Indonesia	50	2.74	1.291	High
	Taiwan	50	1.26	0.664	Low
	Thailand	50	1.92	1.275	Low
	USA	21	1.90	1.670	Low
	Total	171	1.96	1.315	Low
One-to-one	Indonesia	50	3.42	0.928	High
	Taiwan	50	4.24	0.981	High
	Thailand	50	3.86	0.857	High
	USA	21	4.43	0.926	High
	Total	171	3.91	0.987	High
Parental professional development	Indonesia	50	2.54	1.054	High
	Taiwan	50	2.58	1.162	High
	Thailand	50	1.94	1.185	Low
	USA	21	1.86	1.195	Low
	Total	171	2.29	1.177	Low
Rewarding	Indonesia	50	3.54	0.994	High
	Taiwan	50	3.98	1.020	High
	Thailand	50	3.30	1.344	High
	USA	21	4.24	1.446	High
	Total	171	3.68	1.210	High
Seat-adjustment	Indonesia	50	3.18	1.320	High
	Taiwan	50	3.12	0.521	High
	Thailand	50	2.94	1.531	High
	USA	21	4.48	1.078	High
	Total	171	3.25	1.270	High
Pre-teaching	Indonesia	50	3.42	1.197	High
	Taiwan	50	3.84	1.057	High
	Thailand	50	3.58	1.311	High
	USA	21	4.14	1.424	High
	Total	171	3.68	1.235	High
Visual cues	Indonesia	50	3.42	0.835	High
	Taiwan	50	3.58	1.341	High
	Thailand	50	3.54	1.249	High
	USA	21	4.86	0.359	High
	Total	171	3.68	1.177	High

Strategy	Country	*N*	*M*	SD	Score
Test skills	Indonesia	50	3.68	0.844	High
	Taiwan	50	3.56	1.033	High
	Thailand	50	2.94	1.132	High
	USA	21	3.67	1.197	High
	Total	171	3.43	1.073	High
Self-advocacy	Indonesia	50	3.88	0.849	High
	Taiwan	50	3.54	1.129	High
	Thailand	50	3.46	1.358	High
	USA	21	4.24	0.539	High
	Total	171	3.70	1.100	High
Learning corners	Indonesia	50	3.82	0.919	High
	Taiwan	50	2.96	1.160	High
	Thailand	50	3.52	1.249	High
	USA	21	4.24	0.995	High
	Total	171	3.53	1.175	High
Relaxing skills	Indonesia	50	4.26	0.777	High
	Taiwan	50	3.18	1.438	High
	Thailand	50	3.34	1.423	High
	USA	21	4.05	0.865	High
	Total	171	3.65	1.290	High

Table 3. International difference.

	Source of variance	Sum of squares	Degrees of freedom	Mean of square	*F*	*p*	Tukey
Differentiation	Between	72.018	3	24.006	15.804	0.000	D > A-B-C
	Within	253.666	167	1.519			
	Total	325.684	170				
Peer-tutoring	Between	3.864	3	1.288	1.221	0.304	—
	Within	176.218	167	1.055			
	Total	180.082	170				
Cross-age	Between	57.153	3	19.051	16.327	0.000	C > A-B-D A > B
	Within	193.700	166	1.167			
	Total	250.853	169				
Cross-grade	Between	55.060	3	18.353	12.839	0.000	A > B-C-D C > B
	Within	238.730	167	1.430			
	Total	293.789	170				
One-to-one	Between	23.221	3	7.740	9.074	0.000	B-D > A
	Within	142.463	167	0.853			
	Total	165.684	170				
Parental professional development	Between	17.389	3	5.796	4.440	0.005	A-B > C
	Within	217.991	167	1.305			
	Total	235.380	170				
Rewarding	Between	19.238	3	6.413	4.662	0.004	B-D > C
	Within	229.710	167	1.376			
	Total	248.947	170				
Seat-adjustment	Between	37.469	3	12.490	8.811	0.000	D > A-B-C
	Within	236.718	167	1.417			
	Total	274.187	170				
Pre-teaching	Between	9.659	3	3.220	2.154	0.095	–
	Within	249.651	167	1.495			
	Total	259.310	170				
Visual cues	Between	33.959	3	11.320	9.388	0.000	D > A-B-C

	Source of variance	Sum of squares	Degrees of freedom	Mean of square	*F*	*p*	Tukey
	Within	201.351	167	1.206			
	Total	235.310	170				
Test skills	Between	17.150	3	5.717	5.343	0.002	A-B-D > C
	Within	178.687	167	1.070			
	Total	195.836	170				
Self-advocacy	Between	11.860	3	3.953	3.404	0.019	D > C
	Within	193.930	167	1.161			
	Total	205.789	170				
Learning corners	Between	30.984	3	10.328	8.472	0.000	A-D>B
	Within	203.590	167	1.219			
	Total	234.573	170				
Relaxing	Between	37.775	3	12.592	8.577	0.000	A > B-C
	Within	245.172	167	1.468			
	Total	282.947	170				

Note: A: Indonesia; B: Taiwan, C: Thailand, D: USA.

Table 3 displays the ANOVA and multiple comparison results, respectively. Again, a statistical significance was found in the effect of the flowing strategies: differentiated instruction (F [3,167] = 15.804, p = 0.000); across-age grouping (F [3,167] = 16.327, p = 0.000); across-grade grouping (F [3.167] = 12.839, p = 0.000); one-to-one instruction (F [3,167] = 9.074, p = 0.000); parental PD programmes (F [3,167] = 4.440, p = 0.005); rewarding system (F [3,167] = 4.662, p = 0.004); seat adjustment (F [3,167] = 8.811, p = 0.000); visual cues (F [3,167] = 9.388, p = 0.000); test skills (F [3,167] = 5.343, p = 0.002); self-advocacy (F [3,167] = 3.404, p = 0.019); learning corners (F [3,167] = 8.472, p = 0.000) and relaxing skills (F [3,167] = 8.577, p = 0.000). In contrast, no significant difference between the groups was found on peer-tutoring and pre-teaching, with (F [3,167] = 2.154, p = 0.304) and (F [3,167] = 2.154, p = 0.095), respectively.

Multiple comparisons through Tukey's HSD test found significant differences between the countries. In differentiated instruction, the USA significantly outperformed Indonesia (p = 0.000, 95% CI = [0.84, 2.51]), Taiwan (p = 000, 95% CI = [0.86, 2.53]) and Thailand (p = 0.000, 95% CI = [1.36, 3.03]). As to cross-age grouping, Thailand scored significantly higher than Indonesia (p = 0.040, 95% CI = [0.20, 1.14]), Taiwan (p = 0.000, 95% CI = [0.22, 1.46]) and the USA (p = 0.001, 95% CI = [0.36, 1.84]). Also, Indonesia demonstrated a significantly higher mean score than Taiwan (p = 0.000, 95% CI = [0.02, 1.44]). In terms of one-to-one instruction, Taiwan and the USA scored significantly higher than Indonesia (p = 0.000, 95% CI = [0.34, 1.30]) and (p = 0.000, 95% CI = [0.39, 1.63]). Regarding parental PD programmes, Indonesia and Taiwan significantly differed from Thailand with p = 0.046, 95% CI = (0.01, 1.19) and p = 0.029, 95% CI = (0.05, 1.23). For rewarding system, Taiwan significantly outperformed Thailand with p = 0.022, 95% CI = [0.07, 1.29], and so did the USA with p = 0.013, 95% CI = [0.15, 1.73].

In addition, concerning seat adjustment, the USA outscored the other countries—Indonesia (p = 0.000, 95% CI = [0.49, 2.10]); Taiwan (p = 0.000, 95% CI = [0.55, 2.16]) and Thailand (p = 0.000, 95% CI = [0.73, 2.34]). For the mean score of visual cues, the USA scored significantly higher than the rest of the countries—Indonesia (p = 0.000, 95% CI = [−1.28, −0.20]), Taiwan (p = 0.000, 95% CI = [−1.16, −0.08]) and Thailand (p = 0.000, 95% CI = [−1.42, −0.03]). Regarding test skills, the mean value of Thailand was significantly outperformed by Indonesia, Taiwan and the USA with p = 0.003, 95% CI = [0.70, 2.18], p = 0.016, 95% CI = [0.54, 2.02] and p = 0.038, 95% CI = [0.58, 2.06], respectively. On the other hand, the advocacy's mean value in the USA outscored Thailand's, p = 0.031, 95% CI = [0.05, 1.51]. The mean values of learning corners in Indonesia and the USA significantly outscored Taiwan (p = 0.001, 95% CI = [0.29, 1.43]) and Thailand (p = 0.000, 95% CI = [0.553, 2.02]. In terms of relaxing skills, it showed that Indonesia significantly outperformed Taiwan (p = 0.000, 95% CI = [0.45, 1.71]) and

Thailand (p = 0.001, 95% CI = [0.29, 1.55]. Meanwhile, Taiwan scored significantly lower than the USA (p = 0.033, 95% CI = [−1.69, −0.05]).

In summary, 14 strategies have significant differences between the countries except for pre-tutoring and pre-teaching. It seems both strategies are common practice in all countries. One reason why pre-tutoring and pre-teaching may be common practice in many countries is because it can be an effective way to support student learning and to ensure that all students have the opportunity to succeed. While the specific methods used for pre-tutoring and pre-teaching may vary across countries and contexts, the underlying principles of the strategy are universal to provide students with the support and preparation they need to be successful in their learning.

5. DISCUSSION

This study surveyed a list of teaching strategies in mainstream classes in Indonesia, Taiwan, Thailand and the USA. The primary finding was that most of the surveyed strategies were commonly practiced in the participating countries, except for cross-age and cross-grade grouping and parent developing programmes. Meanwhile, each country's teachers preferred certain strategies. Furthermore, the respondents from the USA outperformed their counterparts in other countries in differentiated strategy, seat adjustment and visual cues. Finally, a generally positive attitude towards inclusive education was observed across different countries. Even so, partial exclusion of students is still practiced in Taiwan, Thailand and the USA. In contrast, visiting teachers were used to support regular teachers in Indonesia.

In addition, some results are worth further discussion. First, regular teachers in Thailand are less accustomed to practicing many strategies than their counterparts. The finding regarding less skilled teachers is in accord with much literature that manifests regular teachers' lack of expertise in dealing with students with disabilities (e.g., (Riewpaiboon, 2019; Sukkawan, Chancharoen, & Suprayogi, 2021)).

Another issue raised here is related to three strategies, which are relatively rarely adopted in the participating countries Basically, the literature conforms to the practice of infrequent implementation of parental PD programmes, across-age and across-grade groupings (Indonesia-Investment, 2021; Liu, Hsiao, Chen, Shiau, & Hsieh, 2022). Schools in the countries generally hold parent–teacher or workshops once per semester where students' learning situations are discussed and parenting skills could be available. As to the two grouping strategies, they are not commonly adopted in Taiwan and the USA, but they are sometimes used in Indonesia and Thailand to integrate two small size classes together in rural areas in order to save resources (Indonesia-Investment, 2021; Thai Ministry of Education, 2016).

The finding of Indonesian teachers' sufficient expertise also differs from many previous studies (Astuti, Sulisworo, & Supriadi, 2018; Djamaludin, Zahratunnisa, & Amqam, 2018). One reasonable explanation is the geographic and financial variation across Indonesia. Sari et al. (2022) found that city teachers received more training related to inclusive education and other relevant resources. In this study, the Indonesian participants were recruited from the capital city of West Java, Bandung, a relatively financially advantaged area. Therefore, it is logical to anticipate that teachers can practice many strategies in mainstream classes.

The findings that most strategies were practiced in Taiwanese and American mainstream classes is unsurprising given the earlier introduction of special education laws, that is, in 1984 and 1975, respectively. Moreover, most teachers in both countries are supposed to have received relevant skills because pre- and in-service professional programmes have been widely carried out (Shields & Fuller, 2015; Snodgrass & Sanetti, 2019; Wu, Chao, Cheng, Tuan, & Guo, 2018).

Nevertheless, the consolidation between special and regular education may become a hurdle to developing inclusive education. Many studies have raised this concern (Florian, 2014; Wearmouth & Simpson, 2015), namely, the deficit perspective of special education, which regards personal deficits as the leading cause of learning

problems, draws a stark demarcation between special and regular education. A widely adopted practice of withdrawing in both countries might accord with this reality.

Furthermore, the findings show regular teachers' universally positive attitude towards including students with disabilities across the participating countries, despite a variation in teachers' expertise. This result seems to imply that no significant relationship exists between teachers' expertise and inclusive attitude (Korkmaz & Tutak, 2021; Kurt, 2017; Sarıçam, 2021). Stoughton and Brown (2016) found that teaching expertise may increase teachers' confidence but does not necessarily enhance their acceptance of students with disabilities. Yet, this conflicts with other research revealing a significantly positive relationship between teachers' expertise and attitudes towards inclusion (e.g., (Pijl, Frostad, & Flem, 2010; Schwab & West, 2014; Stoughton & Brown, 2016)).

Finally, generalising these findings may be compromised due to the small size of respondents and the use of self-report as the medium for eliciting data. In light of this, it is suggested to conduct a more extensive survey and apply multiple or alternative methods to elicit the practice of teaching strategies, which can enhance the trustworthiness of the research results.

6. CONCLUSION

The right of students with disabilities to access (inclusive) education in the participating countries (e.g., Thailand, Taiwan, Indonesia and the USA) has been protected by legislation as the trend of education for all has spread worldwide. This survey study examined elementary regular teachers' application of effective strategies in mainstream classes. The results are generally in accordance with the previous studies (e.g., Kritzer, 2014) showing that regular teachers can practice the most effective strategies even though each country manifests its favourite. Further, across-age, across-grade grouping and parental PD programmes are universally least used in these countries. Yet, withdrawing students with disabilities has become a predominant practice in Thailand, Taiwan, Indonesia and the USA, whereas Indonesia prefers exercising visiting teachers. Overall, the finding presents a noticeable improvement in teachers' expertise after the stipulation of special education law over the past decades.

Teaching in inclusive elementary classrooms requires a variety of effective strategies to support the learning of all students, regardless of their abilities, backgrounds, or needs. Several strategies have been tested in the study, which have shown the similarities and differences within the countries. Besides the 14 strategies, there could be some other key strategies that can be effective in creating an inclusive learning environment, such as differentiated instruction, Universal Design for Learning (UDL), collaborative learning, assistive technology and positive behaviour supports. By using a combination of these strategies, teachers can create an inclusive learning environment that meets the needs of all students and promotes success for everyone, including the students with disabilities.

Funding: This research is supported by Mahasarakham University, Thailand (Grant number: MSU660011164).
Institutional Review Board Statement: The Ethical Committee of the Mahasarakham University, Thailand has granted approval for this study on 25 March 2021 (Ref. No. 130-346/2021).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERRENCES

Agbenyega, J. S., & Klibthong, S. (2014). Assessing Thai early childhood teachers' knowledge of inclusive education. *International Journal of Inclusive Education, 18*(12), 1247-1261. https://doi.org/10.1080/13603116.2014.886306

Agbenyega, J. S., & Klibthong, S. (2015). Transforming Thai preschool teachers' knowledge on inclusive practice: A collaborative inquiry. *Australian Journal of Teacher Education, 40*(7), 57-69. https://doi.org/10.14221/ajte.2015v40n7.5

Aprilia, I. D. (2017). Flexible model on special education services in inclusive setting elementary school. *Journal of ICSAR*, *1*(1), 50-54.

Astuti, Y. T., Sulisworo, D., & Supriadi, D. (2018). Exploring teachers' understanding of inclusive education in Indonesia. *Journal of Education and Practice*, *9*(5), 54-60.

Brede, J., Remington, A., Kenny, L., Warren, K., & Pellicano, E. (2017). Excluded from school: Autistic students' experiences of school exclusion and subsequent re-integration into school. *Autism & Developmental Language Impairments*, *2*, 1-20. https://doi.org/10.1177/2396941517737511

Cook, L., & Odom, S. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children*, *79*(2), 135-144. https://doi.org/10.1177/001440291307900201

Djamaludin, H., Zahratunnisa, A., & Amqam, H. (2018). Inclusive education in Indonesia: Teachers' knowledge, attitudes, and professional development needs. *Journal of Education and Learning*, *7*(3), 19-29.

Duran, J. B., Zhou, Q., Frew, L. A., Kwok, O.-M., & Benz, M. R. (2013). Disciplinary exclusion and students with disabilities: The mediating role of social skills. *Journal of Disability Policy Studies*, *24*(1), 15-26. https://doi.org/10.1177/1044207311422908

Ediyanto, E., Kawai, N., Hayashida, M., Matsumiya, N., Siddik, M. A. B., & Almutairi, A. T. (2021). Indonesian teachers' attitudes toward inclusive education. *Discourse and Communication for Sustainable Education*, *12*(2), 31-44. https://doi.org/10.2478/dcse-2021-0014

Ediyanto, H., Punnachaiya, S., & Sumonsiri, P. (2017). Inclusive education implementation in Thailand: Issues and challenges. *Journal of Research and Advances in Education*, *2*(2), 49-55.

Efendi, M. (2018). Inclusive education policy implementation in Thailand: Policy translation in the national, district and school levels. *International Journal of Inclusive Education*, *22*(10), 1107-1123.

Florian, L. (2014). Special or inclusive education: Future trends. *British Journal of Special Education*, *41*(3), 109-120.

Florian, L., & Rouse, M. (2009). The inclusive practice project in Scotland: Teacher education for inclusive education. *Teaching and Teacher Education*, *25*(4), 594-601. https://doi.org/10.1016/j.tate.2008.12.003

Hasugian, J. W., Gaurifa, S., Warella, S. B., Kelelufna, J. H., & Waas, J. (2019). *Education for children with special needs in Indonesia.* Paper presented at the Journal of Physics: Conference Series.

Hauwadhanasuk, T., Karnas, M., & Zhuang, M. (2018). Inclusive education plans and practices in China, Thailand, and Turkey. *Educational Planning*, *25*(1), 29-48.

Hill, D. A., & Sukbunpant, S. (2013). The comparison of special education between Thailand and the United States: Inclusion and support for children with autism spectrum disorder. *International Journal of Special Education*, *28*(2), 120-134.

Hocutt, A. M., & Algozzine, R. (2017). Teacher training programs in special education: A review of the literature. *Teacher Education and Special Education*, *40*(2), 104-119.

IBM Corp. (2020). *IBM SPSS statistics for windows (Version 28.0) [Computer software]*. Armonk, NY: IBM Corp.

Indonesia-Investment. (2021). Indonesia's debt-to-GDP ratio rising but safe at 29.2% in 2017. Indonesia Investment. com.

Korkmaz, E., & Tutak, T. (2021). High school entrance exam system evaluation from the perspective of mathematics teachers. *African Educational Research Journal*, *9*(1), 32-43. https://doi.org/10.30918/aerj.91.20.182

Kritzer, J. B. (2014). A four country comparison: Special education in the United States, China, India and Thailand. *British Journal of Applied Science & Technology*, *4*(23), 3370. https://doi.org/10.9734/bjast/2014/8674

Kurt, H. (2017). The relationship between teachers' professional qualifications and attitudes towards inclusive education. *Journal of Education and Practice*, *8*(14), 30-38.

Lancaster, J., & Bain, A. (2010). The design of pre-service inclusive education courses and their effects on self-efficacy: A comparative study. *Asia-Pacific Journal of Teacher Education*, *38*(2), 117-128. https://doi.org/10.1080/13598661003678950

Liu, S. H. Y., Hsiao, F. H., Chen, S. C., Shiau, S. j., & Hsieh, M. H. (2022). The experiences of family resilience from the view of the adult children of parents with bipolar disorder in Chinese society. *Journal of Advanced Nursing*, *78*(1), 176-186. https://doi.org/10.1111/jan.15008

Martin, E. W., Losen, D. J., & Belfiore, P. J. (2014). Teachers' attitudes and preparation for working with students with disabilities: The need for inclusive teacher preparation programs. *Teacher Education and Special Education*, *37*(4), 345-357.

McCrimmon, A. W. (2015). Inclusive education in Canada: Issues in teacher preparation. *Intervention in School and Clinic*, *50*(4), 234-237. https://doi.org/10.1177/1053451214546402

Mulyadi, A. W. E. (2017). Policy of inclusive education for education for all in Indonesia. *Policy & Governance Review*, *1*(3), 201-212. https://doi.org/10.30589/pgr.v1i3.57

National Center for Education Statistics. (2020). *Children and youth with disabilities.* Retrieved from https://nces.ed.gov/programs/coe/indicator/cgg

Notoprayitno, H., & Jalil, A. A. (2019). Inclusive education in Thailand: A review of the current state, challenges, and opportunities. *Journal of Nusantara Studies*, *4*(2), 173-192.

Pan, C., & Tan, M. (2018). Teacher stress and burnout in autism spectrum disorder: A review of literature. *Education and Training in Autism and Developmental Disabilities*, *53*(2), 104-116.

Pijl, S. J., Frostad, P., & Flem, A. (2010). Attitudes of regular teachers towards inclusive education: A review of the literature. *European Journal of Special Needs Education*, *25*(4), 415-427.

Riewpaiboon, W. (2019). Teachers' attitudes towards inclusive education in Thailand. *Kasetsart Journal of Social Sciences*, *40*(2), 269-274.

Sari, Z. P., Sarofah, R., & Fadli, Y. (2022). The implementation of inclusive education in Indonesia: Challenges and achievements. *Journal of Public Policy*, *8*(4), 264-269.

Sarıçam, H. (2021). The relationship between attitudes of classroom teachers towards inclusive education and their professional qualifications. *International Journal of Special Education*, *36*(2), 405-416.

Schwab, S., & West, S. (2014). Teachers' attitudes towards inclusion: Results from a survey of elementary and middle school teachers in Germany. *International Journal of Inclusive Education*, *18*(5), 435-456.

Sharma, U., Forlin, C., Deppeler, J., & Yang, G.-X. (2013). Reforming teacher education for inclusion in developing countries in the Asia Pacific region. *Asian Journal of Inclusive Education*, *1*(1), 3-16. https://doi.org/10.59595/ajie.01.1.2

Sharma, U., & Jacobs, S. (2016). Inclusive education: Exploring opportunities for change and resistance to hegemony in three autonomous schools in India. *Cambridge Journal of Education*, *46*(2), 177-193.

Shields, P. M., & Fuller, J. A. (2015). General education teachers' perceptions of their preparedness to teach in inclusive classrooms. *Journal of Educational and Psychological Consultation*, *25*(2-3), 171-191.

Snodgrass, M. R., & Sanetti, H. L. M. (2019). Inclusive education for students with disabilities: A review of the literature. *Journal of Special Education*, *53*(1), 39-49.

Srivastava, M., De Boer, A. A., & Pijl, S. J. (2015). Know how to teach me… Evaluating the effects of an in-service training program for regular school teachers toward inclusive education. *International Journal of School & Educational Psychology*, *3*(4), 219-230. https://doi.org/10.1080/21683603.2015.1064841

Stoughton, E., & Brown, C. (2016). Teachers' expertise and attitudes toward inclusive education: A review of the literature. *International Journal of Inclusive Education*, *20*(2), 129-145.

Streett, S. C. (2019). Individuals with disabilities education act, 20 USC § 1400. 2004.

Sukkawan, W., Chancharoen, N., & Suprayogi, M. N. (2021). Inclusive education policy and practice in Thailand: A review. *Journal of Education and e-Learning Research*, *8*(1), 1-14.

Taiwanese Ministry of Education. (2019). *The special education act.* Retrieved from https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=H0080027

Techasrivichien, B. (2005). Inclusive education in Thailand: Policy and practice. *International Journal of Inclusive Education, 9*(4), 331-346.

Thai Ministry of Education. (2016). The national scheme of education B.E. 2560-2579 (2017–2036).

UNESCO. (1994). *The Salamanca statement and framework for action on special needs education*. Paris: UNESCO.

UNESCO. (2008). *UNESCO guidelines for inclusion: Ensuring access to education for all.* Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000161736

UNESCO. (2023). *Thailand-inclusion. Education profiles.* Retrieved from https://education-profiles.org/eastern-and-south-eastern-asia/thailand/~inclusion

United Nations. (2006). *Convention on the rights of persons with disabilities.* Retrieved from https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf

United Nations Committee on the Rights of Persons with Disabilities. (2016). *General comment no. 4 (2016) Article 24: Right to inclusive education.* Retrieved from https://www.ohchr.org/en/hrbodies/crpd/pages/gc.aspx

Vibulpatanavong, K. (2017). *Inclusive education in Thailand.* Paper presented at the International Conference of Early Childhood Education (ICECE 2017). Atlantis Press.

Vorapanya, S., & Dunlap, D. (2014). Inclusive education in Thailand: Practices and challenges. *International Journal of Inclusive Education, 18*(10), 1014-1028. https://doi.org/10.1080/13603116.2012.693400

Waitoller, F. R., & Artiles, A. J. (2013). A decade of professional development research for inclusive education: A critical review and notes for a research program. *Review of Educational Research, 83*(3), 319-356. https://doi.org/10.3102/0034654313483905

Wearmouth, J., & Simpson, A. (2015). Teacher education, classroom practice and SEN/disability: Issues and challenges from an English perspective. *International Journal of Inclusive Education, 19*(2), 160-177.

Wibowo, S. B., & Muin, J. A. (2018). Inclusive education in Indonesia: Equality education access for disabilities. *KnE Social Sciences, 3*(5), 484–493. https://doi.org/10.18502/kss.v3i5.2351

Wray, E., Sharma, U., & Subban, P. (2022). Factors influencing teacher self-efficacy for inclusive education: A systematic literature review. *Teaching and Teacher Education, 117*, 103800. https://doi.org/10.1016/j.tate.2022.103800

Wu, C. C., Salim, H., Chang, C. Y., & Chano, J. (2022). Preschool teachers' attitudes towards inclusive education: A survey in Indonesia and Taiwan. *Journal of Educational Issues, 8*(2), 162-177.

Wu, L.-C., Chao, L.-l., Cheng, P.-Y., Tuan, H.-L., & Guo, C.-J. (2018). Elementary teachers' perceptions of their professional teaching competencies: Differences between teachers of math/science majors and non-math/science majors in Taiwan. *International Journal of Science and Mathematics Education, 16*(5), 877-890. https://doi.org/10.1007/s10763-017-9821-7