

## Special Education Teachers' Self-Efficacy and Knowledge of Learning Disabilities in inclusive Education in Qatar

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### Abstract

It has been almost two decades since inclusive education was incorporated in Qatar's education system, during which the country has heavily invested in enhancing its inclusive education. In this study, we examine Qatar's inclusive education efforts through the lens of special education teachers' self-efficacy and their knowledge of learning disabilities. We surveyed 137 teachers to determine their self-efficacy in five areas: classroom management, instructional strategies and accommodations, building relationships with students with disabilities, effects on student learning, and ability to promote acceptance among the learning community of those with disabilities. We also examined their knowledge of fundamental issues about learning disabilities in three areas: nature and characteristics, service delivery and intervention, and information sources. Although overall ratings of self-efficacy beliefs were low, scores were high for female teachers, teachers with less experience, and some younger teachers; these are promising workforce strengths which should be capitalized upon. The teachers reported some fundamental knowledge about learning disabilities, though they emphasized students' behavioural difficulties over academic ones and saw their challenges to be more student-centred than teacher- or system-focused. In addition, their repertoires of instructional approaches were limited. Such topics should be more strongly targeted in both pre-service preparation and continuing professional development.

**Keywords:** Inclusive education; Teacher knowledge; Teacher self-efficacy; Learning disabilities; Special education; Qatar

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## الكفاءة الذاتية لمعلمي التربية الخاصة ومعرفتهم بصعوبات التعلم في التعليم الدامج بدولة قطر

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### ملخص

بعد مضي أكثر من عقدين من الزمن، ومنذ أن اعتمدت دولة قطر التعليم الدامج جزءاً من نظامها التعليمي؛ حيث استثمرت بشكل كبير في تعزيز التعليم الدامج لديها، ندرس في هذا البحث جهود التعليم الدامج في دولة قطر من منظور الكفاءة الذاتية لمعلمي التربية الخاصة ومعرفتهم بصعوبات التعلم. استطلعنا آراء 137 معلماً لتحديد كفاءتهم الذاتية في خمسة مجالات: إدارة الفصل الدراسي، والاستراتيجيات التعليمية والتكيفات، وبناء العلاقات مع الطلاب ذوي الإعاقة، والأثر في تعلم الطلاب، والقدرة على تعزيز قبول الأشخاص ذوي الإعاقة في مجتمع التعلم. بالإضافة إلى ذلك، فحصنا معرفتهم بالقضايا الأساسية المتعلقة بصعوبات التعلم في ثلاثة مجالات: الطبيعة والخصائص، وتقديم الخدمات والتدخل، ومصادر المعلومات. ومع أن التصنيفات الإجمالية لمعتقدات الكفاءة الذاتية كانت منخفضة، إلا أن الدرجات كانت عالية بالنسبة إلى المعلمين والمعلمات ذوات الخبرة الأقل وبعض المعلمين الأصغر سناً؛ وهذه نقاط قوة واعدة في القوى العاملة ينبغي الاستفادة منها. أفاد المعلمون ببعض المعارف الأساسية عن صعوبات التعلم، ومع ذلك، ركزوا بشكل أكبر على المشكلات السلوكية لدى الطلاب أكثر من الصعوبات الأكاديمية، ورأوا أن التحديات التي يواجهونها تتمحور بشكل رئيس حول الطالب، أكثر من تعلقها بالمعلم أو النظام التعليمي. بالإضافة إلى ذلك، كانت ذخيرتهم من الأساليب التعليمية محدودة. وعليه، ينبغي استهداف مثل هذه الموضوعات بقوة أكبر في كل من الإعداد قبل الخدمة، والتطوير المهني المستمر.

**الكلمات المفتاحية:** التعليم الدامج، المعارف الأساسية، الكفاءة الذاتية للمعلم، صعوبات التعلم، التربية الخاصة، قطر

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## Introduction

Qatar first ventured into inclusive education in the 2003–2004 academic year, providing additional support services and resource rooms, although without distinguishing between types of disabilities. For example, at the Al-Qadisiya School for Boys, students with mobility disabilities and students with learning disabilities were taught together in one classroom (Alsulaiti, 2007). Over the years, some schools started implementing full inclusive education, whereas others followed partial inclusive education models; in Qatar, there is a widespread belief among educators that every student has the right to receive appropriate free education according to their capabilities and needs (Al-Hendawi, Khair, & Keller, 2017).

In 2010, the Ministry of Education and Higher Education announced Additional Education Support Needs policies for the public schools in the country. These policies categorized the different types of needs students might have, identified assessment and instructional practices to use, and led to the establishment of many schools and centres serving people with disabilities, as well as more widespread implementation of inclusive education. Providing additional educational support services was intended to guarantee that all students could experience best educational practices, join in all school activities, and achieve their goals (Al-Hendawi, Keller, & Khair, 2023). The Ministry of Education and Higher Education's Strategic Plan (2018–2022) directs its efforts to achieving the goal of 'an educated population' by increasing the enrolment of students with disabilities (4–18 years) in the general education system. Currently, approximately 3,600 students with disabilities receive their education in 52 inclusive schools in Qatar. These schools are equipped to accept students with disabilities, including those with learning disabilities (Almarri et al., 2018; Zia, 2018).

## Literature Review

To what extent, though, after almost two decades, are the teachers in Qatar's schools prepared to implement the country's inclusive education policy? Two ways to answer this question are through examinations of teachers' (a) beliefs of their self-efficacy in using practices that support inclusion and (b) knowledge, beliefs, and perceptions about learning disabilities.

## Teachers' Self-Efficacy and Inclusive Education

Teachers' self-efficacy—their beliefs about their abilities as educators—plays a critical role in their formation as professionals and affects their ability to be successful in achieving their goals (Dawson, 2008). Teachers who have strong self-efficacy beliefs demonstrate greater efforts which results in better teaching performance and higher efficacy evaluations. These results have been shown in various studies across cultures and worldwide (Tschannen-Moran, Hoy, & Hoy, 1998).

Kiel, Braun, Muckenthaler, Heimlich, and Weiss (2020) examined teachers' self-efficacy in different areas or domains related to teaching, employing a multidimensional instrument to compare teachers' self-efficacy in the implementation of inclusive education in German primary and secondary schools. Self-efficacy dimensions included curriculum development, classroom management, and cooperation. Findings indicated that teachers with the most positive self-efficacy encourage the implementation of

inclusive education to a large extent, whereas teachers with low self-efficacy contributed less to the implementation of inclusion. Moreover, teachers responded differently to the subscales of self-efficacy based on the three dimensions, suggesting implications in the areas of teachers' evaluation of self-efficacy and of inclusive work.

Researchers have compared aspects of teachers' self-efficacy in relation to inclusive education in different countries. For instance, Malinen and colleagues (2013) examined teachers' self-efficacy in three countries—China, South Africa, and Finland—and found that teachers' experience teaching students with disabilities was the strongest predictor of self-efficacy across these settings, whereas the predictive power of other variables differed from country to country. One of the main differences between what the researchers found in China compared to the other countries was the level of efficacy in the areas of collaboration and behaviour management based on teacher's type; that is, general education teachers showed higher self-efficacy than special education teachers. In Finland, teachers' training in inclusive education had a significant impact on self-efficacy dimensions. Gender also played a role in teachers' efficacy in this country, with male teachers demonstrating significantly higher efficacy in managing behaviour problems. In South Africa, the predictive power was significantly higher for efficacy in collaboration than for efficacy in teaching or in behaviour management.

Sharma et al. (2018) compared teachers' self-efficacy in Australia and Italy, finding that Australian teachers had higher self-efficacy than did Italian teachers. Although the Italian teachers had less concerns and more intentions to implement inclusive practices in their classrooms, when the two groups were compared based on self-efficacy level the Australian participants scored significantly higher. In these two countries, attitudes and efficacy were the major predictors of teachers' intentions to include students with disabilities in general education classrooms. Scores regarding concerns of the Australian and Italian teachers were calculated for four factors: resources, acceptance, academic standards, and workload. Australian teachers were considerably more concerned about the decline in academic standards than were the Italian teachers. The Australian teachers also showed significantly higher levels of concern about the increase in their workload compared to the Italian teachers.

Although few researchers have examined teachers' self-efficacy in the Arab world, three studies have addressed the link between self-efficacy and inclusive education. Using questionnaires from 185 teachers from eight schools in Riyadh, Saudi Arabia, Alnahdi (2020) concluded that teachers possessed a good level of confidence in their ability to work in inclusive classrooms though less confidence in their abilities in areas such as raising awareness about laws and policies of special and inclusive education and involving families in school activities.

AlMahdi and Bukamal (2019) examined pre-service teachers' feelings toward inclusive education in Bahrain. In their study, 138 teachers at Teachers College completed the Sentiments, Attitudes and Concerns about Inclusive Education Revised (SACIE-R) scale. Results showed that pre-service teachers required more opportunities to teach and interact with children with disabilities during their practicum. They also needed more knowledge about the education policies concerning children with disabilities as some of the participants did not feel confident about the skills and knowledge they had. Although teachers' feelings were generally positive and caring towards children with disabilities, they had

many concerns surrounding certain aspects of including students with disabilities in general education classrooms.

Aldabas (2020) addressed the link between teachers' perceptions and self-efficacy in teaching in inclusive schools in Jordan with Palestinian refugees. Findings from interviews, classroom observations, and document reviews indicated that all teachers believed that education for students with disabilities is an essential human right. Their attitudes towards inclusion, however varied based on certain factors: the severity of students' disabilities and level of need, teacher's self-efficacy and preparedness to meet the needs of these students, and the effect of crowded classrooms and lack of time for teaching.

### **Teachers' Knowledge of Learning Disabilities**

Despite progress in inclusive education, there is not a great deal of evidence regarding how teachers understand the concept of learning disabilities, a high prevalence disability category through which many students qualify for special or inclusive education services in countries around the world, nor how they perceive the problems, needs, and other issues that students with this disability face. There is also confusion surrounding the diagnosis of learning disabilities, with teachers reporting difficulty in distinguishing between students with learning disabilities and other students who experience low academic achievement (Emam & Alkharusi, 2018).

Grünke and Cavendish (2016) pointed out that in different parts of the world, the concept of learning disabilities has emerged according to several factors such as norms, languages, historical heritage, political, and scientific paradigms which influence education. They have indicated that learning disability is unlike any other disability in that it is viewed by some as predominantly a political creation. They have also noted, however, that this should not undermine the importance of the scientific aspect in building a sound base for the learning disabilities concept, and the significant role doing so plays to build a logical and rational education policy.

A number of studies from different countries have addressed teachers' knowledge and perceptions of learning disabilities based on certain domains, such as causes of the condition. Antonelli-Ponti and Crosswaite (2019) examined Brazilian teachers' perceptions about genetic and environmental impacts on intelligence and learning disabilities. They found that most teachers emphasized the role of both genetics and environment in describing differences for both intelligence and learning disabilities, with a greater belief in a genetic impact on intelligence. There were also differences in teachers' perceptions according to their own gender, age, knowledge, schooling, income, years of experience, and knowledge of genetics.

In Oman, Emam and Alkharusi (2018) also investigated school leaders' and teachers' perceptions about the causes of learning disabilities. They identified six factors that affect teachers' and leaders' perceptions of learning disabilities: the governmental traditional educational system, family and cultural background, teachers' skills and school support students, curriculum, and social change. School leaders believed more strongly than did teachers that the 'governmental official' education system and curriculum were leading causes for learning disabilities.

Other researchers have directed their attention to the role of preparation programs on teachers' knowledge of learning disabilities. For instance, Greenfield, Mackey, and Nelson (2016) explored the perceptions of pre-service teachers toward students with learning disabilities, along with the effectiveness of specific course experiences (i.e., fieldwork with students with learning disabilities, lesson planning, video vignettes, and instruction) in changing perceptions. Both quantitative and qualitative data showed a positive shift in teachers' perceptions in response to the total effects of those preparation components.

Gottfried, Hutt, and Kirksey (2019) explored the role of teacher preparation programs and the edTPA ("educative" Teacher Performance Assessment) developed by the Stanford Center for Assessment, Learning, and Equity that is often used as a credential requirement in the United States (<https://www.edtpa.com/Home.aspx>) on pre-service teachers' knowledge about learning disabilities. Participants felt more prepared to meet the needs of students with these conditions if they thought their program was solid and consistent in its objectives. These pre-service teachers also believed that the edTPA was advantageous for joining the field and that the edTPA enhanced their skills to educate students with learning disabilities.

Researchers in the Arab world tend to rely on the learning disabilities definitions and literature established in Western nations (Emam & Alkharusi, 2018). Besides the research by Emam and Alkharusi (2018) summarized earlier, three additional studies have addressed teachers' knowledge of learning disability issues such as etiology and causes, symptoms, and characteristics in the Middle East. In Kuwait, Aladwani and Shaye (2012) examined teachers' knowledge and awareness of early symptoms of dyslexia in a primary school. Through a survey distributed to over 700 primary language teachers in six educational districts, they found that most of the participants lacked the knowledge, training, and skills to identify characteristics of dyslexia among the students in their classrooms.

In Jordan, Al Khatib (2007) explored 405 general education (Grades 1–6) teachers' knowledge of LD and whether their knowledge differed based on certain variables. Although most teachers had some knowledge of learning disabilities and female teachers were significantly more knowledgeable than male teachers, the participants' level of knowledge was not linked to their academic qualifications, teaching experience, or age.

Emam and Kazem (2015) examined the knowledge of teachers in Oman about the characteristics of learning disabilities, focusing on (a) the overlapping characteristics between these disabilities and emotional and behavioural difficulties and (b) how such connections may influence teacher referrals of children with learning disabilities. They found that there was a relation between teachers' ratings of students on learning disability and behavioural disorders assessment instruments, suggesting the coexistence of symptoms of these two conditions in the children assessed.

Teachers' (a) self-efficacy beliefs and (b) knowledge, beliefs, and perceptions about learning disabilities represent promising objectives for efforts to improve inclusive education. They are similar in nature, affect teachers' effectiveness when working students with disabilities, and can be targeted through pre- and in-service preparation and development. More research is needed, though, to determine through relatively easy yet reliable and valid ways, teachers' status in these two domains, especially in the Arab world. This, then, is the reason for our study.

## Methods

The goal of our descriptive study was to examine the extent to which special education teachers in Qatar's schools reported having beliefs and knowledge in two areas that can support implementation of the country's inclusive education policy. Our two research questions were:

1. What are special education teachers' self-efficacy beliefs in five domains that support successful inclusion: classroom management, instructional strategies and accommodations, building relationships with disabled students, effects on student learning, and ability to promote acceptance among the learning community of those with disabilities?
2. What are special education teachers' knowledge, beliefs, and perceptions about learning disabilities in three areas: the nature and characteristics of the condition, service delivery and intervention approaches, and information sources about the disability?

To answer these questions, we statistically analysed quantitative data from our participants' responses to two surveys, one assessing self-efficacy beliefs and the other, knowledge, beliefs, and perceptions about learning disabilities.

## Participants

We identified potential participants using the 'snowball' technique (Naderifar, Goli, & Ghaljaie, 2017), through connections, colleagues, and friends across schools in Qatar in order to assemble a convenience sample. Institutional review board approval was obtained from (institution) and we observed ethical considerations concerning informed consent, confidentiality, and the protection of participants.

We distributed questionnaires containing two scales, one assessing teachers' beliefs about their self-efficacy and the other investigating teachers' knowledge, beliefs, and perceptions about learning disabilities, to 155 special education teachers from public schools in Qatar; 137 (88% of the possible sample) of the teachers returned the forms. This response rate is considered reasonable and above the acceptable range ( $\geq 70\%$ ; Fowler, 2013).

The teachers ranged in age from 22 to 51. Half of the sample (50.4%) were between the ages of 22 and 36, 39.3% were 37-51, and ages were not reported by 10.2% of the sample. The proportions of males and females in the sample were balanced (48.2% and 46.7%, respectively). Qataris comprised 22.6% of the sample and 68.6% were from other Arab countries. Participants had a range of teaching experience, from newly graduated teachers to those with more than 30 years of experience. Table 1 provides demographic characteristics of the participating teachers.

**Table 1:** Demographic Characteristics of Participants

Characteristics	<i>n</i> (%)
<b>Gender</b>	
Males	66 (48.2%)
Females	64 (46.7%)
Missing Data	7 (5.1%)

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<b>Age</b>	
22-26	12 (8.8%)
27-31	23 (16.8%)
32-36	34 (24.8%)
37-41	21 (15.3%)
42-46	18 (13.1%)
47-51	15 (10.9%)
Missing Data	14 (10.2%)
<b>Experience</b>	
Less than a year	11 (8.0%)
1-5 years	29 (21.2%)
6-10 years	28 (20.4%)
11-15 years	24 (17.5%)
16-20	11 (8.0%)
21-25 years	14 (10.2%)
26-30 years	9 (6.6%)
Missing Data	11 (8.0%)
<b>Nationality</b>	
Qatari	31 (22.6%)
Non-Qatari	94 (68.6%)
Missing Data	12 (8.8%)
<b>Education</b>	
Post-Baccalaureate	17 (12.4%)
Bachelor's Degree	99 (72.3%)
Secondary School	10 (7.3%)
Below Secondary School	1 (0.7%)
Missing Data	10 (7.3%)
<b>School Level</b>	
Elementary	57 (41.6%)
Middle	47 (34.3%)
Secondary	15 (10.9%)
Multiple Levels	6 (4.4%)
Missing Data	12 (8.8%)

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### Teachers' Self-Efficacy Measure

To assess self-efficacy, we used all 14 items from Dawson's (2008) Teaching Students with Disabilities Self-Efficacy Scale (TSDDES). The TSDDES evaluates teacher self-efficacy in five domains: classroom management, instructional strategies and accommodations, building relationships with students with disabilities, effects on student learning, and ability to promote acceptance among the learning community of those with disabilities. Questions explore teachers' perceptions of their ability to execute various educational practices that support inclusive education, such as creating an environment 'that is open and welcoming to all students,' using different strategies, or meeting the needs of the students in their class. Efficacy is measured by the use of the phrase, 'I can,' rather than 'I will' or 'I want to.' The TSDDES is constructed on a 9-point Likert scale ranging from 1 (no impact) to 9 (a great deal) with all items measured in the positive direction. Total scores of the scale can range between 9 and 126.



The TSDES is internally consistent, with a reported Cronbach's alpha of .93. The assessed Cronbach's alpha for this scale in our study using our participants' responses was .98.

We calculated two measures to evaluate the suitability of the data collected by the 14 self-efficacy questions for conducting a factor analysis to evaluate the construct validity of the scale. The Kaiser-Meyer Olkin (KMO) test assesses the adequacy of the data for factor analysis; high values (above .80) are acceptable. The KMO for this data set was .94. Bartlett's Test of Sphericity was 1681.24 and significant, meaning the result of this test is acceptable to use. Both results indicated the data were suitable for running a factor analysis.

The results of the factor analysis showed that there was only one factor extracted from these data with an initial eigenvalue of 11.40. This factor, which represents a singular, molar construct of self-efficacy, explains 81.41% of the total variance. All 14 items were highly and positively correlated, meaning that there is one dominant factor for these data. This supports its construct validity for our study. Table 2 reports the loadings of each item.

**Table 2:** Factor Analysis of Participant Responses to Self-Efficacy Items

	Item	Loading
1	Adjust lessons	0.80
2	Create open environment	0.88
3	Encourage acceptance	0.93
4	Change Society's view	0.89
5	Manage class	0.91
6	Establish relationship	0.94
7	Calm attitude	0.88
8	Motivate students	0.86
9	Control ASD	0.91
10	Promote acceptance	0.93
11	Emphasize standards	0.90
12	Facilitate learning	0.95
13	Help students with LD	0.96
14	Use strategies	0.90

**Note.** ASD = autism spectrum disorder; LD = learning disabilities.

### Teachers' Knowledge of Learning Disabilities Measure

The remaining eight items in our questionnaire, used to assess teachers' knowledge of learning disabilities, were drawn from Kavale and Reese's (1991) 20-item questionnaire on teacher beliefs, perceptions, and fundamental knowledge of learning disabilities. The items selected for our study focused on the nature and characteristics of learning disabilities, service delivery and intervention for students with this condition, and information sources about learning disabilities. Seven of the items were open-ended questions and one question asked participants to rank order several options.

The first question asked participants about their knowledge of the definition of learning disabilities. We categorized teachers' responses based on the two terms used by the Qatar Ministry of Education

and Higher Education (Supreme Education Council, 2009) used to name two categories of ‘learning difficulties,’ the closest descriptions to learning disabilities used in Qatar (Supreme Educational Council of Qatar, 2009):

3. *Students with learning problems (LP)*. This category includes those whose difficulties may be short-term, but which can become long-term and persistent if the teaching programme fails to address problems in one or more of the areas of written and spoken language, mathematics, and the use of effective learning and organisational strategies. Other problems can include persistent behavioural difficulties, communication and/or socialization difficulties, and poor motivation and low self-esteem.
4. *Students with specific learning difficulties (SLD)*. This category includes students with learning disabilities who have persistent long-term difficulties because of the neurological basis of their disability. Students may be of average to above-average intelligence but have difficulties in specific areas of cognitive functioning which inhibit their learning, in the areas of (a) reading and writing (e.g. dyslexia, difficulties with decoding processes, comprehension), (b) speaking and listening, (c) mathematics, non-verbal learning, and/or (d) metacognition (planning and monitoring their own learning).

Respondents’ answers to this item were sorted into four categories: (a) strongly congruent with SLD, (b) somewhat congruent with SLD, (c) congruent with LP, or (d) other (for irrelevance).

We categorized the participants’ responses to Question 2, how students’ problem behaviour is exhibited, into four categories: whether teachers identified (a) academic behaviour, (b) social behaviour, (c) academic and social behaviour, or (d) other as the manifestation.

In Question 3, identifying the challenges teachers encounter with students with learning disabilities, we categorized the participants’ answers as to whether challenges were (a) student-related, (b) teacher-related, (c) structural (i.e., challenges relating to school or school system matters), or (d) other.

For Question 4, we asked participants to rank-order nine potential factors that contribute to or cause learning disabilities, with 1 indicating the most important and 9 indicating the least important.

Question 5 asked the teachers to provide their opinions on what percentage of students should be identified as having learning disabilities in Qatar’s schools. Relatedly, the participants were asked in Question 6 what percentage of students should be identified as having learning disabilities in their school or centre.

We categorized responses to Question 7, strategies known and used with specific learning disabilities, into four categories based on how many strategies teachers were able to name and reported that they used (6 strategies or more, 4–5 strategies, 2–3 strategies, 0-1 strategy).

In Question 8 we asked participants whether they had received training and information, or participated in any programs specifically geared to learning disabilities. We categorized responses into four categories: (a) in-service from the ministry, (b) in-service from a private institution, (c) pre-service preparation (i.e., 2- or 4-year degree programs), and (d) none, i.e., no training source identified.

## Results

### Teachers' Self-Efficacy

The means and standard deviations for the participants' responses to the self-efficacy items are presented in Table 3. As answers on the items can range from 1 to 9, theoretical averages for each item and a total scale score could be considered 5 and 70, respectively. Results showed that participants' beliefs about their self-efficacy were less than these theoretical averages for each item of the scale and the scale as a whole. The item with the highest mean score (4.80) was Item 6 about establishing relationships with students; Item 1 about adjusting lessons had the lowest mean score at 3.74). The total scores for the scale ranged from 14 to 120, with a mean of 63.70 and standard deviation of 32.30.

**Table 3:** Means and Standard Deviations of Participant Responses to Self-Efficacy Items

Item		M	SD
1	Adjust lessons	3.74	2.41
2	Create open environment	4.20	2.57
3	Encourage acceptance	4.65	2.63
4	Change Society's view	4.23	2.33
5	Manage class	4.24	2.59
6	Establish relationship	4.80	2.73
7	Calm attitude	4.07	2.47
8	Motivate students	4.12	2.56
9	Control ASD	3.96	2.29
10	Promote acceptance	4.41	2.44
11	Emphasize standards	3.96	2.54
12	Facilitate learning	4.35	2.65
13	Help students with LD	4.25	2.67
14	Use strategies	4.33	2.52

**Note.** ASD = autism spectrum disorder; LD = learning disabilities.

These results suggest that, for the sample as a whole, teachers' beliefs about their self-efficacy to execute practices that support inclusive education for students with learning disabilities may be somewhat weak. We conducted further analyses to determine if there were any differences in self-efficacy perceptions between different subgroups within our sample.

#### *Differences in Self-Efficacy Beliefs by Gender*

There was a large difference between the total self-efficacy scale scores for male participants in our study ( $M = 40.82$ ,  $SD = 17.08$ ) and female teachers ( $M = 84.31$ ,  $SD = 28.89$ ). A two-tailed, independent samples t-test found that the 43.49 difference in mean scale scores was statistically significant ( $t(76) = -8.09$ ,  $p < .001$ ). Female teachers perceive themselves to be more self-efficacious in their efforts than their male counterparts.

#### *Differences in Self-Efficacy Beliefs by Experience and Age*

We divided the sample of respondents into five groups based on their years of teaching experience.

The means and standard deviations for the total self-efficacy scale scores for the five groups were: 1-5 years,  $M = 84.80$ ,  $SD = 33.58$ ; 6-10 years,  $M = 59.39$ ,  $SD = 30.91$ ; 11-15 years,  $M = 57.93$ ,  $SD = 28.27$ ; 16-20 years,  $M = 69.20$ ,  $SD = 26.32$ ; 21-25 years,  $M = 48.50$ ,  $SD = 20.69$ ; and 26-30 years,  $M = 27.50$ ,  $SD = 12.82$ ). A one-way ANOVA revealed significant differences ( $F(6, 70) = 4.28$ ,  $p < .001$ ) between teachers based on their experience. A Bonferroni post-hoc analysis found that the differences were statistically significant between the groups (a) with 1–5 years and 21–25 years of experience and (b) with 1–5 years and 26–30 years of experience.

Not surprisingly, there were somewhat similar differences in total self-efficacy beliefs based on teachers' ages. The means and standard deviations for the six age groups we formed were: 22-26 years,  $M = 80.83$ ,  $SD = 25.29$ ; 27-31 years,  $M = 91.43$ ,  $SD = 33.42$ ; 32-36 years,  $M = 59.36$ ,  $SD = 31.47$ ; 37-41 years,  $M = 55.85$ ,  $SD = 26.11$ ; 42-46 years,  $M = 54.40$ ,  $SD = 25.37$ ; and 47-51 years,  $M = 37.10$ ,  $SD = 24.61$ . The result of a one-way ANOVA was also statistically significant ( $F(5, 69) = 5.15$ ,  $p < .001$ ). The results of a post-hoc Bonferroni analysis found more inter-group differences than occurred when the respondents' years of teaching experience were tested. There were significant differences between teachers who were 27-31 years old and all the groups of teachers older than them, i.e., 32-36, 37-41, 42-46, and 47-51.

### Teachers' Knowledge about Learning Disabilities

Given the mainly categorical nature of the information collected by the study's scale investing teachers' knowledge about learning disabilities, we analysed the information collected and report the results more descriptively. Table 4 provides the results for the first three questions.

**Table 4:** Participant Knowledge of Nature and Characteristics of Learning Disabilities

Question	Category	Frequency	Percent
1. Definition	Strongly congruent with SLD	0	0.0
	Somewhat congruent with SLD	66	48.2
	Congruent with LP	60	43.8
	Other	11	8.0
2. Manifestation	Behaviour	48	35.0
	Academic	36	26.3
	Academic and Behaviour	53	38.7
3. Challenges	Student-related	80	58.4
	Teacher-related	12	8.8
	Structural	42	30.7
	No response	3	2.1

**Note.** LP = Learning Problem; SLD = specific learning difficulties.

The learning disabilities definitions provided by the study's informants in response to Question 1 suggested they were familiar to at least some extent with the content of the two terms used by the Qatar Ministry of Education and Higher Education to categorize students with learning disabilities. The responses of almost half of the teachers (48.2%;  $n = 66$ ) were somewhat congruent with the definition of

the more specific term, Specific Learning Disabilities. Another large proportion provided replies where were congruent with the more general term, Learning Problems (43.8%; n = 60). Note, however, that none of the definitions provided by the teachers were strongly congruent with the country's definition for Specific Learning Disabilities. This suggests that a topic for increased attention in pre-service preparation and in-service professional development.

The second question asked the teachers about the types of difficulties students with learning disabilities exhibited in their classroom. Definitions of the condition, including the two used by Qatar, emphasize the academic nature of the challenges, while also including the possibility of behavioural problems. For our sample, behavioural difficulties were identified more frequently than academic. Answers when two response categories were combined, Social Behaviour alone and Academic and Social Behaviour combined, captured 73.7% (n = 101) of our informants' responses whereas, when the categories of Academic alone and Academic and Social Behaviour combined contained 65.0% (n = 89) of the answers.

Question 3 asked the participants about the nature of the challenges they faced when working with a student with learning disabilities. Somewhat in line with the results of the previous question which highlighted students' behavioural difficulties, the majority of the teachers (58.4%; n = 80) thought that the challenges were student-related. Almost a third (30.7%; n = 42) reported structural challenges, ones that pertained to school and school system factors. Only 8.8% (n = 12) found the challenges to be teacher-related, a result that might be considered too small given how often low total self-efficacy scores were reported for so many groups based on either teaching experience or age.

To measure teachers' knowledge and beliefs regarding the etiology of learning disabilities, we asked our participants to rank-order nine potential causes of the condition in Question 4. Table 5 reports the results. Within-child factors dominated the rankings. Genetics was the highest ranked cause, selected first, second, or third by 70.0% of the sample. Medical factors represented the second highest cause, chosen by 66.5% of the teachers; psychological reasons at 57.9% came in third. On the other hand, causes related to school inflexibility and teaching were ranked the lowest. School inflexibility was ranked last by 38.0% of participants, and 26.3% ranked it second to last.

**Table 5:** Rank Ordering of LD Etiologies

Cause	Variable	Rank order percentage								
		1	2	3	4	5	6	7	8	9
Medical	Genetics	44.5	16.0	9.5	9.5	3.6	2.2	2.2	3.0	9.5
	Medical	25.5	32.0	9.0	6.0	4.4	7.3	6.6	3.0	3.6
Family	Family influences	11.0	10.0	12.4	21.0	9.5	16.0	7.3	3.6	4.4
	Low SES	3.6	3.0	8.0	8.0	13.0	17.5	20.0	8.8	13.0
Child	Psychology	9.5	17.0	31.4	11.0	12.4	7.3	3.6	2.2	2.2
	Social/behavioural	5.0	8.0	8.0	18.0	16.0	13.0	14.0	10.0	3.6
	Personality	4.4	3.0	8.0	15.3	17.0	15.3	15.3	13.0	4.4
Schooling	School inflexibility	0.7	2.2	2.2	5.8	3.6	5.0	10.9	26.3	38.0
	Poor teaching	4.4	4.4	7.3	6.0	9.5	8.8	11.0	26.3	18.0

**Note.** SES = socio-economic status.

Although learning disability is commonly considered to be a high prevalence disability category, often representing the greatest proportion of students served by special education in a country, determining appropriate prevalence rates is still a research challenge. Rates can vary widely, and little consensus exists in this area (Antonelli-Ponti et al., 2019; Gottfried et al., 2019; Kavale & Reese, 1991). We probed this issue for Qatar by asking teachers to estimate the LD prevalence rate both for the country (Question 5 in the scale) and in their schools or centres (Question 6). Our participants appeared uncertain about a national prevalence rate. The average estimated percentage was 17%, although responses ranged from 0% to 80%, causing considerable variability ( $SD = 15$ ); 12.7% of teachers identified the percentage of SLD in the country as 35% or more, 53.2% reported 10% or less, and 34.1% reported rates between 15 and 30%. For the school estimates, the average percentage was 14.4%, with responses ranging from 0% to 100%, causing considerable variability ( $SD = 19$ ). More specifically, 12% of the participants reported that over 30% of the students in their schools had learning disabilities, whereas 63.8% of the teachers reported 10% or less, 19.6% reported 15–30%, and 8.6% reported 35% or more.

Based on our informants' responses to Question 7 which asked them to report and name the teaching strategies they used with their students with learning disabilities, it appears that the teachers in our sample have limited repertoires of methods they know about and use. Over a quarter of the participants (27.0%;  $n = 37$ ) identified 0 or 1 strategy and more than half (54.7%;  $n = 75$ ) could name just two or three different teaching strategies that they use; combined, this represents 81.7% of the sample. Only 18.3% ( $n = 25$ ) reported using four and more strategies with their students. As students with learning disabilities can experience a wide array of academic challenges, increasing teachers' skills sets with a number of evidence-based teaching methods should be an important goal for both pre- and in-service training in the country.

Finally, Question 8 asked the participants where they received their training about learning disabilities. The majority received it through in-service professional development, whether through private centres or agencies (16.1%;  $n = 22$ ) or, more commonly, from the Ministry (43.1%;  $n = 59$ ). A small proportion, 14.6% ( $n = 20$ ), went through pre-service preparation programs. Unfortunately, more than a quarter of the sample, 26.3%, ( $n = 36$ ) reported receiving no training about learning disabilities.

## Discussion

A sample of 137 special education teachers in Qatar returned questionnaires containing separate scales to assess teachers' self-efficacy beliefs and knowledge, beliefs, and perceptions about learning disabilities, two areas that previous research has found support the effective implementation of inclusive education. Results showed that, for the sample as a whole, participants' beliefs about their self-efficacy were less than the theoretical averages for each item of that scale and the scale as a whole. There were, however, some significant intra-group differences that are potentially meaningful for Qatar's efforts to achieve its inclusive education policy.

Female teachers reported stronger self-efficacy beliefs than their male counterparts. This result is important as there are gender limitations on which teachers can teach different types of students in

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Qatar's schools. Male teachers can only teach male students at the middle and secondary levels. Female teachers instruct female students at these levels as well as all students, male or female, at the primary level.

Also, teachers with less experience had higher self-efficacy scores than some of their colleagues with more experience and a group of younger teachers had stronger self-efficacy beliefs than their older peers. Although one might think that older teachers and those with more years of experience would have stronger beliefs about their self-efficacy in the use of practices to support inclusion, it may be that the more recent education of those who are younger and have less experience may have included more preparation on inclusive education given the increased focus on this policy in Qatar in recent years, resulting in stronger beliefs about their abilities to execute the procedures queried by the self-efficacy scale.

In terms of knowledge about learning disabilities, a large proportion of the sample reported definitions about the condition there were in line to some degree with those of the definitions for the two terms used by the Ministry in Qatar. Student difficulties with behaviour were noted more frequently than academic problems. The challenges teachers reported facing were more student-related than teacher- or system-related. Genetics, medical, and psychological factors were ranked the most highly as causes for students' learning disabilities. The teachers seemed to be uncertain about the rates of learning disabilities prevalence in both Qatar and their schools as large proportions reported very high rates. More than 80% of the teachers reported using three or fewer instructional strategies with their students with learning disabilities. And, although almost 60% of the sample have received in-service professional development about learning disabilities from private centres or agencies or the Ministry, more than a quarter reported having received no training whatsoever.

Several of our results about teachers' self-efficacy beliefs are in line with previous studies, adding further support to this literature base. For instance, consistent with Dawson's (2008) findings, the highest scoring item in the self-efficacy scale in our questionnaire was establishing meaningful relationships with students with disabilities and the lowest was the teacher's confidence in adjusting lessons to meet the needs of all students in the class regardless of their ability levels.

The higher self-efficacy demonstrated by the female participants in our study is also in line with the results of previous studies (Erdem & Demirel, (2007); Gao & Mager, (2011); Romi & Leyser, (2006); Sharma, Shaukat, & Furlonger, (2015)). Per Betz and Hackett (1997), the different experiences associated with gender-role socialization may have resulted in different levels of self-efficacy and self-confidence regarding certain areas of teachers' self-efficacy and their behaviours. When Betz and Hackett studied the educational prerequisites and career duties of 20 gender traditional and non-traditional professions, they found that women had considerably higher self-efficacy beliefs for traditionally female professions and that men showed significantly higher self-efficacy for traditionally male professions.

In our study, the teachers with the least experience (1–5 years) had higher self-efficacy regarding teaching students with learning disabilities than did teachers with the most experience (26–30 years), again in line with prior studies. In the Malinen et al. study (2013), teaching experience with students with disabilities was the strongest predictor of self-efficacy. Given the relatively short history of special

education services in Qatar, the teaching experiences of those with long careers may not have included many opportunities to work with students with special needs, at least needs officially identified and targeted by the educational system. Our findings regarding participant age, with teachers in a younger age group (27–31 years) demonstrating significantly higher self-efficacy than those in several older age groups spanning 32–51 years meshes with the work of Shaukat and Iqbal (2012), who found that younger teachers (20–30 years) were more able to manage their classrooms and engage students were than older teachers (31–40, 41–50 years). This might indicate that younger teachers tend to be more flexible when it comes to adopting the new practices that inclusive education often requires. It may also indicate that younger teachers have better skills and energy in engaging students and managing their classrooms, which in turn results in their positive self-efficacy.

Several of our results concerning teachers' knowledge about the nature and characteristics of learning disabilities also support previous research. Our participants, in their responses regarding manifestations of specific learning disabilities in the classroom, identified both social and academic behaviours, again in line with prior research. Students with learning disabilities often do not demonstrate positive academic and social skills at school (Hall, 2015), and generally have deficiencies in social skills compared to students without disabilities (Bryan, Burstein, & Ergul, 2004; Kavale & Forness, 1998; Walker & Nabuzoka, 2007).

Like the participants in Antonelli-Ponti and Crosswaite's study (2019), the participants in the current study showed a strong preference for attributing learning disabilities to genetic causes. On the other hand, causes related to schooling and teaching were ranked the lowest by our participants, similar to those in Kavale and Reese's (1991) study; this might be linked to teachers' disinclination to attribute students' challenges or problems as their fault. Emam and Alkharusi (2018) found that teachers' and school leaders' knowledge about the causes of learning disabilities were linked to their understanding of the definition of condition. According to Emam and Alkharusi, teachers' lack of knowledge about learning disabilities—not having an accurate operational concept—might result in faulty referrals of students for special education support services.

When the results from the two areas we investigated are considered together, a case could be made that weaknesses in one—teachers' knowledge, beliefs, and perceptions about learning disabilities—may, in part, be adversely affecting the other—teachers' self-efficacy beliefs—which we found, for the sample as a whole, to be somewhat weak. The vast majority of participants provided definitions that were somewhat congruent with the definitions of the country's more specific term, Specific Learning Disabilities, or the more general term, Learning Problems; none, though, reported responses that were strongly in line with the specific term. Taken together, this suggests teachers might have an incomplete understanding of what learning disabilities are. The fact that our sample identified behavioural difficulties more frequently than academic ones for a special education category centered on learning provides additional evidence of this possibility. Most significantly, the teachers in our sample reported having limited repertoires of instructional methods that they know about and use; for about a quarter of our sample, this may be the result of having had no training, either pre-service or in-service, about learning disabilities. If a teacher does not know enough about the types of difficulties her or his students present



or many ways to try to teach them, it would be understandable that one's beliefs about her or his efficacy in working with these students would be limited.

A limitation of our study is that we only assessed teachers' reported (a) beliefs about their self-efficacy in implementing practices that support inclusive education and (b) knowledge, beliefs, and perceptions about learning disabilities. Observational methods would have allowed us to determine whether their self-reports were accurate. Such future research would not only enhance the field's understanding of the importance of teachers' self-efficacy beliefs and learning disabilities knowledge, beliefs, and perceptions but also would, if conducted in Qatar's schools, improve our understanding of the effectiveness of Qatar's efforts to provide an effective, meaningful inclusive education to its children and youth with special educational needs.

## Conclusions and Future Directions

One reason we conducted our study was to learn about the progress of Qatar's inclusive policy implementation almost two decades after its initiation by examining two areas of special education teachers' knowledge and skills that can contribute to successful implementation. What we found was promising. The high self-efficacy reports by female teachers are important as they are charged with the education of all of the country's elementary school students as well as female students in middle and secondary schools. The higher self-efficacy levels found for younger and less experienced teachers is promising given the increased number of special education graduates coming from the country's preparation programs, especially those from the Bachelor of Education in Special Education program at Qatar University (Al-Hendawi, Al-Qahwaji, & Keller, 2022). Other results from our research point to topics that should receive greater emphasis in both pre-service preparation and continuing professional development, such as evidence-based instructional practices. A combination of the existing workforce strengths with enhanced preparation and training will serve the country well as it pursues the challenge of inclusive education.

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#### تصريحات ختامية:

- يصرح المؤلف/ المؤلفون بالحصول على موافقة الأشخاص المتطوعين للمشاركة في الدراسة وعلى الموافقات المؤسسية اللازمة.
- تتوفر البيانات الناتجة و/ أو المحللة المتصلة بهذه الدراسة من المؤلف المراسل عند الطلب.

#### Final declarations:

- The authors declare that they got the required voluntary human participants consent to participate in the study as well as the necessary institutional approvals.
- The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.