

Enhancing teacher self-efficacy to sustain inclusive education: restructuring teacher education

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Abstract

Purpose – This research paper explores the relationship between teacher education and pre-service teacher (PT) and in-service teacher (IT) self-efficacy beliefs toward sustainable inclusive education. In line with the United Nations Convention on the Rights of Persons with Disabilities (CRPD)’s call for monitoring and evaluation, this study examines how current teacher training and education programs strengthen PT and IT self-efficacy beliefs to support inclusive practices.

Design/methodology/approach – This research paper used a mixed-method approach to examine pre-service and in-service teachers’ beliefs and self-efficacy regarding inclusive education. The study used the Beliefs about Learning and Teaching Questionnaire (BLTQ) and the Teacher Efficacy for Inclusive Practices (TEIP) scale to collect quantitative data from 56 graduate MA teachers, divided into pre-service and in-service categories and then conducted interviews with 14 participants.

Findings – The study’s findings revealed that PTs and ITs held more positive beliefs about flexible instruction, incremental views of ability and positive self-efficacy in instruction and collaboration. The findings suggested only small descriptive differences in instructional and self-efficacy beliefs between PTs and ITs and are therefore reported as exploratory patterns. Teacher interviews further emphasized the importance of mandating inclusion courses across all education specializations and running advanced specialized courses and workshops offered by inclusion specialists.

Research limitations/implications – While this study investigated PTs’ and ITs’ self-efficacy beliefs toward inclusive education, the small sample size of graduate teachers limits the generalizability of the results. To address these limitations, future research studies with larger samples and balanced numbers of PTs and ITs could improve the reliability of group comparisons and strengthen generalizability.

Practical implications – Primary priorities for policymakers and educators are to initiate critical reforms to teacher education and training programs, including (1) mandating introductory inclusion courses across all graduate education specializations, (2) conducting field trips to autism and Attention-Deficit/Hyperactivity Disorder centers and (3) providing access to specialized inclusion professionals, especially during the practicum.

Social implications – This study highlights the critical role of restructuring teacher education programs to strengthen pre-service and in-service teachers’ self-efficacy in implementing inclusive education in the UAE and the broader GCC region. Improved teacher preparation can bridge the gap between ambitious national inclusive policies and classroom realities, fostering greater acceptance of diversity, stronger parent–school partnerships and long-term societal benefits. Ultimately, investing in teacher self-efficacy advances social justice and helps build tolerant, cohesive Gulf societies aligned with national visions for sustainable development.

Originality/value – By integrating the United Nations Theoretical Framework of Inclusive Education (2016) with Bandura’s self-efficacy theory (1977–1997), examining both PTs and ITs and using a mixed-methods approach that is not commonly used in this area, this research contributes to both global understanding and the local advancement of inclusive education in the UAE and the broader GCC region, calling for targeted reforms in teacher education structures and curriculum design to better align with national visions and the UN framework. It highlights the value of mastery and vicarious experiences in building positive beliefs while

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Introduction

Inclusive education, as defined by [UNICEF \(2017\)](#), is “an education system that includes all students, welcomes them, and supports their learning, regardless of their identities or abilities” (p. 1). The Committee on the Rights of Persons with Disabilities (CRPD), in its document titled “General Comment on the Right to Inclusive Education” (2016), outlined several requirements for sustaining inclusive education, including teacher support and “monitoring” (pp. 4–5). The CRPD further recommends that teachers receive education and training that boosts their confidence and ability to adapt effectively to inclusive educational conditions.

Aligned with the CRPD recommendations, teachers’ confidence or self-efficacy and its potential impact on the sustainability of inclusive education have emerged as critical areas of focus in teacher education and inclusive education research ([Tuncay & Kizilaslan, 2022](#)). Self-efficacy refers to teachers’ beliefs “in estimating their ability to produce positive impacts on student educational outcomes” ([Yada et al., 2021](#), p. 2). PTs’ and ITs’ self-efficacy can predict their job satisfaction, attrition ([Devi & Ganguly, 2022](#)) and resilience in implementing inclusive education ([Yada et al., 2021](#)). Conversely, low self-efficacy regarding inclusive practices can significantly affect teachers’ levels of burnout, stress and inclination to resign ([Devi & Ganguly, 2022](#)).

Therefore, the impact of teacher training and education programs on PTs’ and ITs’ self-efficacy is significant, as “teachers’ efficacy beliefs are shaped early in learning; as a result, the quality of teacher education programs can affect the sense of self-efficacy of pre-service teachers” ([Tzivinikou & Kagkara, 2019](#), p. 356). Teacher training and education programs have the potential to become “one of the prominent venues that assist in combating marginalization and exclusionary practices in schools, enabling a promising learning experience for all learners” ([Massouti, 2021](#), p. 1). Yet the existing inclusive education policies and their integration into teacher training and education programs have not always succeeded in promoting future teachers’ self-efficacy beliefs regarding overcoming challenges associated with implementing inclusive practices ([Bohndick, Ehrhardt-Madapathi, Weis, Lischetzke, & Schmitt, 2022](#); [Takala & Sirkko, 2022](#); [Whitley, Gooderham, Duquette, Orders, & Cousins, 2019](#); [Ismail & Jarrah, 2019](#)). [Massouti \(2021\)](#) revealed that most teacher training and education programs in Canada focus on inclusion-related theories rather than providing training opportunities for their graduates, resulting in low levels of self-efficacy in accommodating learners’ diverse needs in practice. In Finland, Finnish graduate teachers had lower self-efficacy in managing disruptive behavior ([Takala & Sirkko, 2022](#); [Yada et al., 2021](#)). In Australia, [Nepal, Walker, and Dillon-Wallace \(2021\)](#) further emphasized that while graduate teachers had positive attitudes toward inclusive practices, many lacked the confidence to implement them in classrooms.

This study is paramount as it ventures into the underexplored realm of teacher education and PT and IT self-efficacy in a sustainable, inclusive education system. Aligned with the CRPD’s call for monitoring and evaluation, this study critically assesses how current teacher training and education programs support PTs’ and ITs’ self-efficacy beliefs in implementing inclusive practices. It also aims to identify the obstacles that hinder this process and propose practical implications to inform teacher education, PT and IT self-efficacy and sustainable inclusive education.

Research purpose and questions

The primary purpose of this research is to investigate pre-service and in-service teachers’ self-efficacy beliefs toward inclusive education and understand how teacher training and education

programs can enhance their self-efficacy beliefs to sustain inclusive learning environments. Guided by UNDESA (2002, p. 32) that states that “monitoring, assessment, evaluation and learning play a central role in a national sustainable development strategy”, the study aims to inform the sustainability of inclusive education. Thus, the research questions of this study are as follows:

- (1) What are the pre-service and in-service teachers’ beliefs about learning and teaching in inclusive classes?
- (2) What are the pre-service and in-service teachers’ teaching self-efficacy beliefs about inclusive education, including their self-efficacy in instruction, collaboration and managing behavior?
- (3) How do pre-service and in-service teachers reflect on their program’s role in enhancing their self-efficacy for inclusive education practices?

Theoretical framework and literature background

Theoretical framework

This study is guided by several theories and models, resulting in an integrated theoretical framework presented in Figure 1 that synthesizes the UN Theoretical Framework of Inclusive Education (2016) and its requirements (focusing on teacher support and monitoring for this study’s purpose) with Bandura’s (1977, 1997) theory of teacher self-efficacy. The framework sought to link systemic requirements for inclusion with teachers’ professional preparation and psychological resources needed for PTs and ITs to implement inclusive education.

The UN framework (2016) identifies five pillars for achieving and sustaining inclusive education: system, partnerships, respect for diversity, monitoring and teacher support. Building on the UN framework (specifically teacher support and monitoring for this study), the structural design of teacher education and training programs highlights the crucial roles of their two components, “Theory” and “Practice,” in (1) giving teachers a conceptual understanding of inclusive principles and (2) developing practical skills through practicum and reflection. Therefore, the framework views teacher education as the catalyst that translates systemic needs into concrete teacher actions.

The final element is Bandura’s (1977, 1997) Theory of Teacher Self-Efficacy. Self-efficacy, along with its four sources, is seen here as the key mechanism through which teacher education exerts its strongest influence. Bandura (1997) defined perceived self-efficacy as one’s beliefs about achieving different performance levels. Bandura (1977, 1997) explained that higher levels of self-efficacy are affected by four factors: (1) mastery experience, (2)

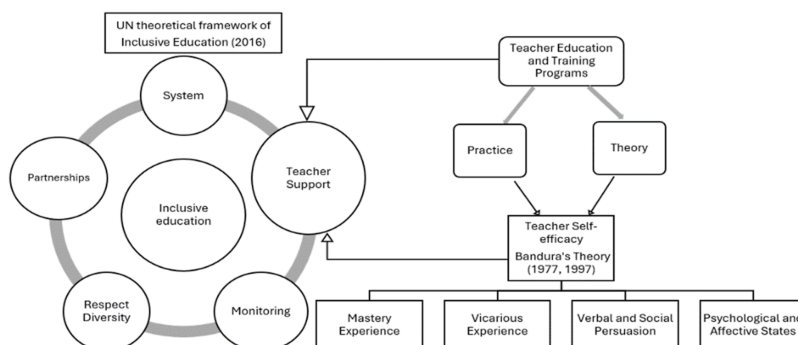


Figure 1. The theoretical frame of the study

vicarious experience, (3) verbal and social persuasion and (4) psychological and affective states. Overall, by emphasizing teacher support, monitoring and the development of self-efficacy through structured teacher education, the framework directly guides this study's research questions, tool development and interpretive approach.

Literature background

Teacher training and education programs and PTs and ITs' self-efficacy toward inclusive practices. There is growing interest in examining how the curriculum design of teacher education programs influences teachers' self-efficacy for inclusive education. PTs often enter their training with limited prior experience of inclusion and can be viewed as "partially blank slates" in this regard (Ismailos, Gallagher, Bennett, & Li, 2022, p. 185). Consequently, a solid basis of positive self-efficacy beliefs could be "established in initial-teacher-preparation programs" (Hassanein, Alshaboul, & Ibrahim, 2021, p. 3). While Bohndick *et al.* (2022) found that students who completed dedicated special education courses reported higher self-efficacy for inclusion, Hassanein *et al.* (2021) found that a single introductory special education course was insufficient to meaningfully shift trainee teachers' attitudes. Tzivinikou and Kagkara (2019) further identified "limited exposure" to students with special educational needs as a main criticism of the current structural design of teacher education programs (p. 356). Despite international policy emphasis on preparing teachers for inclusive practices, significant challenges remain in teacher education and training programs, hindering adequate preparation. These include internal barriers related to program design and organizational structure, as well as external barriers such as school leadership support and limited teacher autonomy (Massouti, 2021).

Inclusive education policies in Arab Gulf countries. Implementation of inclusive education in the Gulf Cooperation Council (GCC) countries is characterized by ambitious national policies alongside persistent practical challenges. In the UAE (the research context), inclusive education is a priority, aiming to include students identified as having special educational needs and disabilities (SEND) in a shared learning environment (Al Junaibi & David, 2015). Within the Kuwait Vision 2035 (New Kuwait) framework, inclusive education is a key component of the "Creative Human Capital" pillar (Ministry of Foreign Affairs, 2026). The Saudi Vision 2030, through the Human Capability Development Program (HCDP), aims to provide a "solid educational base for all" (Human Capability Development Program, 2021).

However, alongside these ambitious national policies, a few studies have highlighted areas for further development to better align special education realities with these policies. First, practice calls for increased support from authorities to effectively implement inclusion (Bukamal, 2018). Al-Hendawi, Keller, and Khair (2023) noted that special educational needs (SEN) teacher preparation faces challenges, including limited program availability, gender-based restrictions, language barriers and slow adaptation of university programs to meet national demands. Second, special education research in the region remains underdeveloped, thereby affecting the quality of services and outcomes for students with disabilities (Al-Hendawi *et al.*, 2023). Third, practical initiatives and research are needed to systematically improve inclusive education through teacher preparation programs (Al-Hendawi *et al.*, 2023; Hassanein *et al.*, 2021; Bukamal, 2018).

Bukamal (2018) compared perceptions of teachers who have been through initial teacher education in Bahrain with those of teachers who have not been through initial teacher education and found that, despite lacking formal training, both groups have similar perspectives, urging for "a necessary revision of the requirements of the TC [Teacher College] teacher preparation programme to either review the current inclusive education course, or consider the addition of more courses related to inclusive education" (p. 142).

Finally, regarding the role of teacher education programs in enhancing graduates' self-efficacy, only one prominent study by Hassanein *et al.* (2021) in Qatar focused on attitudes rather than self-efficacy. This scarcity underscores the significance of this study in addressing

knowledge and practice gaps in teacher preparation programs and their role in fostering inclusive practices among teachers.

Methods

Research design and participants

This research paper employed a mixed-method approach to investigate PTs' and ITs' beliefs and self-efficacy regarding inclusive education. [Mertens \(2010\)](#) defined mixed methods as a powerful tool for gaining an in-depth understanding of a topic by combining various data collection tools. In this study, a questionnaire was used to probe PTs' and ITs' self-efficacy toward inclusive education. Additionally, interviews were conducted to investigate their self-efficacy beliefs and to understand how the education program's organizational design shaped those beliefs and prepared them for inclusive education.

Eight universities in the UAE offer graduate education programs in Education. Invitations were sent to the eight universities; however, only four approved. The four universities offer Master's programs in Education, and their graduate students must complete at least 1.5 years of study. Two are in Dubai, one in Al Ain and one in Abu Dhabi and all are private. All faculty members at the four universities hold PhDs in Education and serve as associate professors in the MA program.

The study utilized purposive sampling, selecting only students who had completed their first year, as they had more theoretical knowledge and practical opportunities during their practicum experience than first-year students. Purposive/purposeful sampling becomes appropriate as it "is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from the most that can be learned" ([Merriam & Tisdell, 2016](#), p. 96).

The number of participants who completed the program's first year at the four universities was 56 graduate students (See [Table 1](#)). Their educational background is in English, Arabic, business and social sciences. Of the 56 students, 31 were ITs (55.4%), while 25 were PTs (44.6%).

Identical ethical procedures were followed across the four participating universities. First, invitation letters were sent to university administrations, outlining the purpose of the research, procedures and expected involvement. Upon receiving institutional approval and support, identical recruitment processes were followed as well. Informed consent letters were sent via the program director's email to all first-year MA students: (1) stating that participation was voluntary, (2) reassuring them of the confidentiality of their participation and (3) emphasizing participants' rights to withdraw at any stage. Interview data were anonymized at the point of collection through participant codes (PT1-PT6; IT1-IT8) and no identifying information is reported.

Data collection

PT and IT questionnaire. The questionnaire comprised 38 closed-ended items on a five-point Likert scale, plus four demographic questions. Items 1–20 investigated PTs' and ITs' beliefs about learning and teaching in inclusive classes (See [Table 2](#)) using the BLTQ Scale ([Glenn, 2018](#), pp. 59–60). The BLTQ Scale has four factors: "teacher-controlled instruction" (six items), "teacher increment-entity views about ability" (four items), "student-centered instruction" (six items) and "attaining standards" (four items). Items 21–38 measured three factors measuring graduate teachers' self-efficacy using the Teacher Efficacy for Inclusive Practice (TEIP) Scale by [Sharma, Shaukat, and Furlonger \(2015\)](#). According to the designers, the higher the TEIP score, the higher the level of a participant's self-efficacy. The survey was administered online toward the end of the semester via Google Forms. Internal consistency was examined for the full instrument and for each scale. The full instrument showed high internal consistency (Cronbach's $\alpha = 0.93$). Reliability was also high for the TEIP total scale

Table 1. Characteristics of participating graduate students

Demographic variables	Frequency	Percentage
<i>Gender</i>		
Male	10	17.9%
Female	46	82.1%
<i>Age</i>		
Below 25	7	12.5%
25–34	24	42.9%
35–44	18	32.1%
45–54	5	8.9%
55 and above	2	3.6%
<i>Educational background</i>		
English	22	39.3%
Arabic	15	26.7%
Business	9	16.1%
Social sciences	10	17.9%
<i>Professional teaching experience</i>		
Pre-service	25	44.6%
In-service	31	55.4%

Table 2. Descriptive statistics for the four factors of the BLTQ scale

	<i>N</i>	Mean	Std. deviation
Teacher-controlled instruction	56	2.9	0.691
Increment-entity views	56	2.8	1.030
Student-centered instruction	56	3.8	0.771
Attaining standards	56	3.5	0.964

Note(s): *Italic value represents the highest mean*

($\alpha = 0.96$) and for its three subscales: efficacy in inclusive instruction ($\alpha = 0.91$), efficacy in collaboration ($\alpha = 0.92$) and efficacy in managing behavior ($\alpha = 0.85$). For the BLTQ, internal consistency was good for the total scale ($\alpha = 0.83$) and for the student-centered instruction ($\alpha = 0.81$), attaining standards ($\alpha = 0.84$), teacher-controlled instruction ($\alpha = 0.73$) and increment-entity views of ability ($\alpha = 0.71$) subscales.

PT and IT interviews. To understand how the education program can enhance the self-efficacy of PTs and ITs, semi-structured interviews were conducted with 14 out of the 56 PTs and ITs. Interview invitations were sent to participants via the head of the program office at each university. Those who agreed to participate contacted the researchers via email and then Zoom calls lasting 30–35 minutes were conducted at their convenience. These interviews allowed graduate teachers to reflect on their beliefs about inclusive education and their program’s role in enhancing their self-efficacy for inclusive practices.

Data analysis

Numeric data collected from the questionnaire were processed using IBM SPSS Statistics. While it offers less flexibility than open-source alternatives (Paura & Arhipova, 2012), it is widely used in educational and social science research (Masuadi *et al.*, 2021). Descriptive statistics were used to calculate the mean and standard deviation values of each survey item within each factor.

An additional step was to compare PTs' and ITs' beliefs regarding each factor, with the caveat that the sample sizes of pre-service and in-service teachers are unequal (25/31). Inferential statistics (independent-samples *t*-tests with Welch's adjustment) were conducted to examine differences between PTs ($n = 25$) and ITs ($n = 31$) and revealed no statistically significant differences between the groups (all $p > 0.40$). The small effect sizes (Cohen's d ranging from 0.12 to 0.22) suggest that any observed differences are minor and may be attributable to sampling variability rather than a robust distinction between PTs and ITs (Cohen, 1988).

On the other hand, narrative data from graduate teachers' interviews were analyzed using thematic analysis, which provides a rich, detailed yet accessible account of participants' shared experiences and effectively summarizes large volumes of data (Kushnir, 2025). Following Creswell (2014), (1) the fourteen interviews were transcribed, and (2) line-by-line coding was conducted, combining deductive codes identified from the study's research questions and the integrated framework with inductive codes generated from participants' words. For example, codes such as "beliefs of inclusive education," "inclusion courses in education programs and "challenges" and "benefits" from the "practicum" were identified. Based on the identified codes, themes were generated and then a final narration, including descriptions of different perspectives on the themes, was created. Finally, the narrative was member-checked and peer-debriefed to mitigate subjectivity.

Results

PTs' and ITs' beliefs about learning and teaching in inclusive classes

Table 2 presents descriptive statistics for the four factors of the BLTQ Scale: teacher-controlled instruction, increment-entity views of ability, student-centered instruction and attaining standards.

Table 2 indicates a stronger preference for student-centered approaches than for teacher-controlled approaches, with the highest mean being 3.8. Nevertheless, the findings also showed that graduate teachers generally emphasized correctness and the role of grades in motivating students to work hard to meet specific standards. The low mean score for incremental views of ability was positive. Glenn (2018) explained that the lower the scores of these items, the more incremental the views about abilities are.

Table 3 below presents descriptive statistics for all BLTQ survey items. It revealed that while graduates strongly supported student-centered class practices, especially for item 12, giving students choices in their learning tasks (4.2), they also believed that teacher control is critical (3.6). Findings also showed that there might be some agreement that learning ability is fixed. However, graduates' incremental views of ability were evident in their general belief that it is possible to reach most students and improve their performance in science, technology, engineering, arts and mathematics (STEAM) courses (items 9 and 10). Finally, descriptive statistics for the attaining-standards items showed that the mean scores were above the neutral point (3.0), indicating that graduate teachers generally emphasized correctness.

Examining differences in beliefs between PTs and ITs (See Table 4) revealed that they shared similar beliefs across most dimensions, with only minor differences in mean scores. ITs had a slightly higher mean score on the second factor. However, independent-samples *t*-tests showed that none of the PTs–IT differences on the BLTQ reached statistical significance (all $p \geq 0.24$), and effect sizes were small (Cohen's $d = 0.06$ –0.32), indicating minor descriptive patterns rather than group differences. The standard deviations were very similar, showing consistent variability in both groups.

PTs' and ITs' self-efficacy beliefs about inclusive education

Table 5 presents the overall mean score for the 18 TEIP items and the mean scores for the three specific types of self-efficacy among graduate teachers.

Table 3. Descriptive statistics for all BLTQ scale items

	Mean	Std. deviation
<i>Teacher-controlled instruction</i>		
1. Students should rely on the teacher to evaluate work	3.054	1.0689
2. Students cannot be counted upon to evaluate their own work accurately	2.804	1.1508
3. It is important for students to complete assignments exactly as the teacher planned	2.982	1.3816
4. In every class, I find students to whom I just can't teach core concepts	2.536	1.1903
5. It is important for teachers, not students, to direct the flow of a lesson	2.911	1.2689
6. It is important for teachers to have control over lessons	3.625	1.3012
<i>Increment-entity views</i>		
7. The ability to learn is something people have a certain amount of and there isn't much they can do to change it	3.286	1.4234
8. The ability to learn is something that remains relatively fixed throughout life	3.232	1.5135
9. There isn't much I can do about how much ability I have in mathematics, science and language arts	2.214	1.3310
10. There will always be some students who simply won't "get it" no matter what I do	2.607	1.2162
<i>Student-centered instruction</i>		
11. To assess students' understanding of a core concept, it is important to observe and listen to their conversations as they work	4.036	0.9335
12. Good teachers give students choices in their learning tasks	4.179	0.9928
13. In core subjects, students should construct many of their own examples	3.875	1.1129
14. Good instruction relates learning material to things students are interested in outside of school	3.893	1.1705
15. It doesn't matter whether students get the right answer as long as they understand the concepts inherent in the problem	3.589	1.1245
16. Concerns about getting the correct answer are likely to interfere with concept development and learning	3.464	1.0781
<i>Attaining standards</i>		
17. Giving grades on assignments is a good strategy for getting students to work	3.500	1.1442
18. The more students are concerned about grades and performance, the more they learn	3.304	1.1269
19. All of my students would do well if they worked hard	3.589	1.1875
20. Students who produce correct answers have a good understanding of core concepts	3.571	1.2337

Table 4. Mean scores and standard deviations of PTs' and ITs' beliefs of BLTQ sub-scale items

		Teacher- controlled instruction	Increment- entity views of ability	Student- centered instruction	Attaining standards
P	Mean	3.0	2.7	3.8	3.5
	Std. Deviation	0.696	1.035	0.863	1.064
I	Mean	2.9	3.0	3.9	3.5
	Std. Deviation	0.695	1.024	0.696	0.891

The mean scores for the overall TEIP and its sub-scales were all close to 3.80, generally indicating strong efficacy beliefs among graduate teachers across different aspects of inclusive practices. The standard deviations ranged from 0.820 to 0.969, suggesting that while most graduate teachers felt confident, there was some diversity in the strength of their efficacy beliefs, with collaboration showing the most variability and managing behavior the least. Individually, the highest mean score on the efficacy subscale for instructional items was 3.9

Table 5. Descriptive statistics for overall and sub-scales of TEIP scale items

	<i>N</i>	Mean	Std. deviation
TEIP (overall)	56	3.80	0.864
Instruction	56	3.83	0.932
Collaboration	56	3.78	0.969
Managing behavior	56	3.76	0.820

(item 18, i.e. I can provide an alternative explanation or example when students are confused). For the second subscale, results revealed that graduate teachers had higher confidence levels in interacting with parents (item 3), with a mean score of 4.00. Finally, the descriptive analysis of survey items measuring graduate teachers' efficacy in managing behavior showed higher confidence in being "able to get children to follow classroom rules" (item 11), with a mean score of 4.00.

Comparing the mean scores and standard deviations for PTs and ITs on the three sub-scales (See Table 6) revealed that PTs consistently had slightly higher mean scores than ITs across all three sub-scales. Again, these differences were not statistically significant (all $p \geq 0.43$) and were accompanied by small effect sizes ($d = 0.08$ – 0.21).

PTs were found to be more confident than ITs in (1) providing appropriate "challenges for very capable students" (item 6), (2) getting them "to work in pairs or in small groups" (item 14), (3) getting "parents involved in school activities of their children with special needs" (item 9) and (4) working "with other professionals and staff (e.g. aides, other teachers) to teach students with special needs in the classroom" (item 13), for all these, items PTs recorded a mean score of 4.0 compared with 3.5 for ITs.

PTs' and ITs' beliefs about inclusive education and the program's role in enhancing their self-efficacy for inclusive education

Fourteen graduate teachers were asked to reflect on (1) their beliefs about inclusive education, (2) the role of the program in enhancing their self-efficacy for inclusive education practices and (3) to suggest recommendations for improving graduate teacher preparation for inclusive education. Four main themes emerged: (1) beliefs about inclusive education, (2) special education terminology, (3) the practicum experience: gains and challenges and (4) the compulsory inclusive courses across all teacher education specializations. All 14 interviewees were female; six were PTs and eight were ITs. Furthermore, two interviewees were MA graduates in SEN education, one was an educational leadership graduate and the rest were MA graduates in Education. Six of the

Table 6. Mean scores and standard deviations of PTs and ITs on the TEIP three sub-scales

	Mean	<i>N</i>	Std. deviation
<i>Instruction</i>			
Pre-service	3.9	25	0.821
In-service	3.7	31	1.018
<i>Collaboration</i>			
P	3.9	25	0.819
I	3.7	31	1.080
<i>Managing behavior</i>			
P	3.8	25	0.735
I	3.7	31	0.894

eight in-service teachers' experiences were early (1–5 years), while the remaining two have more than 15 years of experience (IT 3 and IT 4).

Beliefs about inclusive education. Graduate beliefs about inclusive education varied in depth of understanding. Many PTs associate inclusive education with classroom management, differentiation and diversity. For example, one PT stated:

Inclusive education means my classes are like small communities, and each community has its characteristics and different cultural backgrounds, and how the teacher has to understand the needs of each community and respond accordingly (PT2).

Another participant further explained:

Knowing more about individual differences and understanding each one's abilities means inclusive education (PT1).

ITs, on the other hand, defined the concept as:

inclusion of all students, regardless of their learning difficulties (IT1).

Furthermore, the importance of practical application was highlighted by an IT who noted the necessity of:

designing appropriate assessment tools (IT2).

Special education terminology. While many graduate teachers could articulate their understanding of inclusive education, most cited the role of theoretical classes in conceptualizing essential inclusive terminology. Here are two examples from two ITs:

understand main concepts in inclusion (IT3).

Thanks to the program, I could not put proper words into the disabilities themselves (IT4).

Accordingly, the better conceptualization of inclusion resulted in:

strong personality and confidence in dealing with students and, more importantly, their families (IT5).

A PT explained that theoretical classes assisted in:

recognizing some of the cases later when I had my practicum (PT4).

Also, research-based courses urged graduates:

To go further, know more about parents' perspectives, and the inclusion process of enrollment. These courses boosted confidence and set the scene for how the UAE perceives inclusion and incorporates it (PT3).

PTs and ITs also emphasized gaining a deeper understanding of differentiation through theoretical classes. For example, an IT said:

Before my MA, I used to believe that individual differences only refer to the differences in how students receive information (learning styles). However, with my MA, I realized that this concept is more profound than students' preferred ways of receiving information. It includes many things and everything, even how to talk to the students, because each student needs a different way to deal with (IT5).

Another IT clarified:

I used to think that differentiation has to do only with final assessment tools, so easy questions are followed by difficult questions. My understanding is deeper; it includes daily activities given, group-work activities, and summative assessment practices (IT7).

The same student concluded her discussion of differentiation, saying:

Before my MA, I used to think that the teacher's mission is to teach. However, now I realize our mission is to improve student well-being and develop learning and soft skills (IT7).

The practicum experience: gains and challenges. The third emerging theme concerned the role of practicum in providing opportunities to "impart all learned skills into practice" PT1 and to "face classroom realities, to live the inclusion experience, and find out how to behave in real-life inclusive experiences" (PT5). The third emerging theme is the role of practicum in providing opportunities to:

impart all learned skills into practice PT1

face classroom realities, to live the inclusion experience, and find out how to behave in real-life inclusive experiences. PT5

Moreover, many responses focused on gains in teachers' self-efficacy in managing behavior, as IT7 illustrated here:

In practicum, I learned that managing disruptive behavior is not about shouting or screaming, it is not physical punishment like standing in the corner, it is your voice tone, smile, or even your pause. IT7

She also elaborated on her improved abilities to manage young learners, such as Grade 1 students:

When teaching grade one students, I realized that setting rules, as we learned from lectures, with such moving and short-attention-spanned students, is not enough. So, I learned from my practicum to use drawing as a tool. So, I draw two emojis; one is smiling, and one is grumpy. So, the name of a troublemaker student is listed under the grumpy emoji. Kids are sensitive. Once I list the kid's name under the grumpy face, h/she becomes quieter. Later, I talked to the student to explain my point. IT7

The practicum experience was also influential in promoting teachers' efficacy in differentiated instruction, as IT8 noted:

Thanks for the practicum, I am more skillful in dealing with high versus low achievers. IT8.

She further elaborated:

I learned how important it is to celebrate students' achievements, no matter how different they are, small or big. IT8

The practicum also enhanced PTs' confidence in interacting with parents of students with special needs. For example, PT6 said:

Without the practicum, I would not have had the chance to deal with parents of special needs and test my abilities to inform them about their kids' cases; now I feel more confident talking to parents, my special thanks to my mentor who encouraged me to face such realities. PT6.

Undoubtedly, the lived practicum experience also highlighted several challenges. The most common challenge with respect to inclusion is the existing gap between theory and practice, as PT4 explained:

Things in practicum are totally different than in theory and inclusion lectures; we need more specialized PD sessions, more sessions to deal with complex cases such as Autism, before we are put to deal with these cases as teachers in the practicum. PT4

PT2 also pointed out the importance of guiding teachers on how to use resources relevant to different learning difficulties:

The practicum is short and hectic, no time to start learning about the different inclusive resources. While we had long hours of lecturing, it was better to introduce such materials and resources during class time or PD sessions rather than leaving this to the practicum. PT2

Moreover, “*student acceptance*,” as PT2 further explained, is another challenging area. Many graduate teachers reported that, at the beginning of the practicum, some students with learning difficulties were not accepted in class, or that others did not “*take [them] seriously*.” IT8.

However, mentors play a significant role in moderating these challenges. For example, while some participants felt the support of their mentors when interacting with parents of special needs, as mentioned above, others expressed:

Low levels of care from my mentor when dealing with disruptive students or even when I discuss this issue with their parents. IT6

Another PT, unfortunately, added:

Instead of guiding me on essential matters, such as differentiated instruction, managing group work, or other important issues, my mentor’s focus is more on minor things, such as organizing the classrooms, and she kept asking me to help her decorate the classroom, cut and paste... PT1

Finally, as with any practicum experience, trainee teachers complained about the following common challenges:

Long hours of work IT2

Traffic problems PT5

All in one month. PT4

Compulsory inclusive courses across all teacher education specializations. When asked to recommend a more effective organizational design for a program focused on teacher preparation for inclusive education, participants acknowledged that much more remains to be done. The most common demand was “mandating” inclusion courses across all teacher education specializations. For example, an IT in an MA program in education had not taken any inclusion courses because her major is education leadership. It was only in her education policy course that one of the topics listed for her final assignment was inclusion policy, which led her to learn more about inclusive policies and practices. Based on this, she emphasized the following:

To mandate courses about inclusion across MA and PhD programs regardless of the specialization, because even students who graduate as leaders like me need to know the basics about inclusion policies, rights, and obligations. Okay, we speak about diversity and differentiation in our assessment and learning courses. However, it is totally different when you go deep and know more about the policies, which cases can be admitted, and how to deal with each case either as a leader or a teacher (IT3).

Three more PTs from a different MA program highlighted a lack of awareness of inclusive policies. Surprisingly, two MA graduates in SEN education recommended the need for:

More specialized resources and training on how to deal with common cases encountered in classes such as dyslexia and autism (IT6).

The other graduate recommended plans to include:

More professional development sessions informing graduates about the inclusive guide by the KHDA in the UAE, conduct scenario-based workshops using videos rather than just worksheets. In these videos, different disabilities are displayed, and then strategies for each case must be discussed. We as students need to make field trips where we observe cases in real life (PT4)

Integration of quantitative and qualitative findings

An integration of the BLTQ and TEIP results with the interview themes through a joint display (Table 7) revealed that the two strands were largely convergent; specifically, the strong student-centered scores alongside high scores for attaining standards were reflected in interviewees' accounts of a program that broadened their conceptual understanding of differentiation while assessment practice remained grade-oriented. Divergence was limited but informative. For example, although the quantitative results showed generally strong efficacy in managing behavior, interviewees reported low confidence when facing complex cases such as autism and dyslexia, suggesting that the TEIP items capture general classroom management rather than specialized inclusive practice.

Discussion

The study investigated PTs' and ITs' self-efficacy beliefs toward inclusive education and examined how the teacher training and education program can enhance these beliefs to sustain inclusive practices. The study's overall findings revealed positive aspects of teachers' beliefs: their promising student-centered instruction beliefs, incremental views of ability and their positive self-efficacy levels in instruction and collaborating with parents, aligning with results from Ismailos *et al.* (2022), Yada *et al.* (2021) and Lytle and Shin (2023). Incremental rather than entity views of abilities were especially prevalent in STEAM courses, reflecting graduates' support for the role of intervention in such core courses. Previous research emphasizes that incremental views of ability in STEAM/ science, technology, engineering and mathematics (STEM) courses positively correlate with student engagement, student self-efficacy and "grit", as described by Lytle and Shin (2023, p. 22).

Table 7. Joint display of quantitative (BLTQ/TEIP) findings and qualitative themes

Focus (RQ)	Quantitative (BLTQ/TEIP)	Qualitative theme	Integrated interpretation
Beliefs about learning and teaching (RQ1)	Student-centered instruction highest (M = 3.8); attaining standards M = 3.5; increment-entity M = 2.8; teacher control still endorsed (3.6)	Themes 1–2: inclusion understood as diversity and differentiation; courses deepened understanding (IT5, IT7, PT3)	Convergence with expansion: coursework broadens inclusive beliefs but a grade-oriented mindset persists
Self-efficacy in instruction (RQ2)	Instruction subscale M = 3.8; highest item "alternative explanation" (M = 3.9)	Theme 3: practicum enabled differentiation in practice (IT8, PT1, PT5)	Convergence: practicum mastery experiences drive instructional efficacy (Bandura, 1977, 1997)
Self-efficacy in collaboration (RQ2)	"Involving parents" was the highest item (M = 4.00) but had the largest dispersion (SD = 0.969)	Theme 3: mentor encouragement built confidence (PT6); others reported minimal support (IT6, PT1)	Explains the variance: collaboration efficacy tracks mentoring quality, which was uneven
Self-efficacy in managing behavior (RQ2)	M = 3.8 with smallest dispersion (SD = 0.820); "children follow rules" (M = 4.00)	Theme 3: strategies learned in practicum (IT7) but unpreparedness for complex SEN cases (PT4)	Partial divergence: generic confidence high, specialized confidence low; case-based training needed
Program's role and PT–IT comparison (RQ3)	PT–IT differences small and non-significant (BLTQ $p \geq 0.24$, $d = 0.06$ – 0.32 ; TEIP $p \geq 0.43$, $d = 0.08$ – 0.21)	Theme 4: both groups sought mandatory inclusion courses and specialized resources (IT3, IT6, PT4)	Convergence: a shared reform agenda supports reading PT–IT contrasts as descriptive only

On the other hand, more effort is still needed to reduce teachers' adherence to traditional beliefs regarding teacher control over the classroom. Participants emphasized the importance of high scores and assignment completion, aligning with "behavior-focused grading practices" (Link, 2018, p. 62) rather than greater "flexibility" (Ismailos *et al.*, 2022). Such beliefs may inhibit student learning in inclusive settings (Danforth & Naraian, 2015). Al Junaibi and David (2015) similarly observed that teachers often lack the confidence to adopt student-centered approaches without experiencing "panic and disturbance" (p. 1).

Investigating the three sub-scales of PTs' and ITs' self-efficacy in inclusive instruction, managing behavior and collaboration revealed positive levels across all three. Like Finnish participants in Yada *et al.* (2021) and Canadian participants in Massouti (2021), UAE graduate teachers expressed confidence in their readiness to collaborate with students' parents and professionals to accommodate students' diverse needs. Such positive findings also support the UAE government's efforts and GCC countries' commitment to inclusive education through national visions and frameworks (KHDA, 2017; Human Capability Development Program, 2021; Ministry of Foreign Affairs, 2026).

PTs' and ITs' reflections provided a critical review of achievements and remaining needs. The study's positive findings, particularly the role of course lectures in broadening perceptions of diversity and the practicum in translating theory into practice, align with GCC policy priorities. Participants' gains in understanding inclusion as embracing all forms of difference resonate with the UAE's emphasis on equitable access and nurturing well-being for all students. Teachers' understanding of inclusion as embracing all students' differences and caring for their well-being conforms with Danforth and Naraian's (2015) support of "inclusive schooling", which perceives "schooling as human social activity that nurtures the growth, learning, and well-being of individuals and families" (pp. 72–73). Second, the practicum allowed PTs and ITs to translate their content knowledge into practice and reflect on their perceptions of inclusive practices, a finding that resonates with many previous studies (i.e. Devi & Ganguly, 2022; Tuncay & Kizilaslan, 2022; Massouti, 2021; Hassanein *et al.*, 2021).

Despite these gains, the study raised concerns about the gap between inclusion theories and inclusive practices in teacher education design, the role of mentors and the need to mandate inclusion courses across all teacher education specializations. These concerns diverge from GCC policy aspirations by highlighting persistent implementation gaps, echoing regional analyses that identify limitations in SEN teacher preparation, including limited program availability, slow adaptation of university curricula and insufficient practical training opportunities (Al-Hendawi *et al.*, 2023; Hassanein *et al.*, 2021; Bukamal, 2018).

Participants' calls for more practice opportunities, field trips and targeted training on inclusion policies directly support recommendations for revising teacher preparation programs, such as those noted in Bahrain, where similar perceptions persisted regardless of formal training (Bukamal, 2018) and emphasize the influential role of "mastery" and "vicarious" experiences in supporting teachers' self-efficacy (Bandura, 1977, 1997). Moreover, mentees' calls for SEN specialists as mentors support Bohndick *et al.* (2022) recommendations to "not only proclaim inclusion as a cross-sectional topic for all PTs but to include specific learning opportunities regarding teacher education" (p. 152).

Finally, because the PT and IT teacher samples are unequal in size (25 and 31, respectively), the study found only small, non-significant descriptive differences in beliefs about inclusive education between the two groups. Descriptively, more PTs than ITs supported flexibility over fixed views on student learning and assignment completion, and their confidence levels were marginally higher than those of ITs across the three self-efficacy subscales. Hence, these contrasts were interpreted as tentative, exploratory patterns rather than established group differences. This supports Ismailos *et al.*'s (2022) explanation that PTs are "blank slates with respect to inclusion [...] not yet influenced by interactions with students with exceptionalities in inclusive or segregated settings" (p. 185); whereas the descriptively lower confidence levels of ITs may tentatively suggest the need for quality training in UAE schools. Further research with larger and balanced samples is needed to examine these patterns. Overall, the study's

findings contribute context-specific insights to the ongoing policy-practice dialog in the region and globally, underscoring the need for teacher education reforms that more effectively integrate Bandura's sources of self-efficacy.

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Research implications

If PTs' and ITs' positive self-efficacy beliefs are a crucial step toward teachers' support for accommodating "inclusive learning environments" ([United Nations Committee on the Rights of Persons with Disabilities \[CRPD\], 2016](#)), then the priority for policymakers and educators is to initiate critical reforms to teacher education and training programs, mandating introductory inclusion courses across all graduate education specializations. Hence, basic terminology in SEN education and the local inclusion policies should be part of any introductory inclusion course, with possible tailoring according to the orientation of each major.

Furthermore, because "monitoring progress regularly" is another CRPD requirement for sustaining an inclusive education system, the study's significant findings call for more specialized SEN courses and high-quality training to enhance teachers' confidence and skills. Guided by Bandura's self-efficacy theory ([1977, 1997](#)), graduate education programs should restructure their practicum courses to provide graduate teachers with more mastery and vicarious experiences, especially for PTs. Practicum courses must include scenario-based workshops that use videos depicting different disabilities, followed by a discussion of instructional and assessment strategies for each case.

Moreover, the reflection process should be followed by, or coupled with, reflection sessions with specialized inclusion professionals, especially when trainee teachers face complex SEN cases, to help them maintain their "psychological and affective states". Conducting field trips to autism and Attention-Deficit/Hyperactivity Disorder (ADHD) centers allows PTs and ITs to observe real-life cases and how specialists address diverse situations. Such visits could promote teachers' efficacy in managing behavior. Despite the affordability challenge, shadow training for graduates allows them to closely observe the practices of other professional SEN teachers, thereby potentially enhancing their self-efficacy by enriching their vicarious experience.

In terms of theoretical implications, the findings extend the limited discussion on the interplay between curriculum elements and the development of self-efficacy beliefs. They highlight the value of mastery and vicarious experiences in building positive beliefs while revealing persistent theory-practice gaps, which resonate with broader calls for reforming teacher education programs across the GCC ([Al-Hendawi et al., 2023](#); [Hassanein et al., 2021](#); [Bukamal, 2018](#)) and globally ([Bohndick et al., 2022](#); [Massouti, 2021](#)). By integrating the United Nations Theoretical Framework of Inclusive Education (2016) with Bandura's Self-efficacy theory ([1977, 1997](#)) and examining both PTs and ITs, this research contributes to both global understanding and the local advancement of inclusive education in the UAE and the broader GCC region, calling for targeted reforms in teacher education structures and curriculum design to better align with national visions and the UN framework.

Conclusion

Using a mixed-methods design, this paper examined how graduate teacher education programs in the United Arab Emirates shape pre-service and in-service teachers' beliefs and self-efficacy regarding sustainable inclusive education, guided by the UN Theoretical Framework of Inclusive Education (2016) and [Bandura's \(1977, 1997\)](#) self-efficacy theory.

The most significant finding is that positive inclusive beliefs and generally strong self-efficacy coexist with a persistent theory-practice gap: participants endorsed student-centered, incremental views of ability and felt confident in instruction and collaboration yet their confidence rested largely on the short practicum and declined when they described complex SEN cases, inconsistent mentoring and the absence of compulsory inclusion courses across

specializations. Differences between pre-service and in-service teachers were small and statistically non-significant and should be read as exploratory descriptive patterns only.

Hence, three limitations were identified. The sample was small ($n = 56$), unequal across the two groups (25 PTs and 31 ITs) and drawn from four private universities that granted access, which limits external validity. The quantitative data were descriptive and cross-sectional, so no causal claim about program effects can be made; and the qualitative strand relied on 14 self-selected, all-female interviewees, whose accounts are illustrative rather than representative. To address these limits, future studies with larger sample sizes could benefit from equal numbers of PTs and ITs, improving the reliability of group comparisons and strengthening generalizability.

Teacher education providers in the UAE and the wider GCC should mandate an introductory inclusion course. Furthermore, practicum courses should be lengthened and restructured around scenario-based workshops, video cases, field visits to autism and ADHD centers and shadowing of specialist SEN teachers. Finally, mentors should be trained and, where possible, drawn from inclusion specialists and reflection sessions with specialists should follow encounters with complex cases to support teachers' affective states.

Future research should test these patterns with larger and balanced samples of pre-service and in-service teachers across public and private institutions in several GCC countries, use longitudinal or pre-post designs to track how self-efficacy develops across coursework and practicum, employ measurement invariance testing before comparing groups, include male teachers and school leaders and add classroom observation so that self-reported efficacy can be compared with enacted inclusive practice.

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