Original Article

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The Self-Efficacy of Preservice Physical Education Teachers in Saudi Arabia Regarding the Inclusion of Students with Disabilities

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Authors' Contribution: A – Study Design, B – Data Collection, C – Statistical Analysis, D – Manuscript Preparation, E – Funds Collection

Abstract: *Background*: Saudi Arabia has made notable progress in integrating students with disabilities into mainstream education. This study aimed to examine whether gender, academic year, enrollment in adapted physical education (APE) courses, and internship experiences in general or adapted PE influence the self-efficacy of pre-service PE teachers in teaching students with intellectual (ID), physical (PD), and visual (VI) disabilities. *Methods*: A total of 170 pre-service physical education teachers (99 females, 71 males; mean age 21.6) from the University of Hafr Al Batin participated in the study. The Self-Efficacy Scale for Physical Education Teacher Education Majors Toward Children with Disabilities (SE-PETE-D) was used to assess their confidence across disability categories. *Results*: Key findings include: (1) Female participants reported higher self-efficacy scores than males across all subscales; (2) Significant differences in self-efficacy were observed by academic year, with fourth-year students scoring higher than second-year students; (3) Enrollment in APE courses was positively associated with self-efficacy, with those taking one or two courses scoring significantly higher than those with no APE training; (4) Participants who completed internships in either general or adapted PE demonstrated greater self-efficacy than those without such experience. *Conclusions*: These results highlight the importance of practical experience and specialized coursework in fostering confidence among pre-service PE teachers. To better prepare future educators for inclusive classrooms, teacher education programs should strengthen their curricula by incorporating more applied learning and disability-focused training opportunities.

Keywords: self-efficacy, inclusion, physical education, pre-service teachers, Saudi Arabia

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INTRODUCTION

There is an increasing global movement towards the inclusion of students with disabilities in mainstream education, a development that Saudi Arabia is actively embracing [1]. The United Nations asserts that students with disabilities are entitled to equal access to physical education, which is defined as all aspects of inclusive education [2]. The Saudi Arabian Ministry of Education has allocated considerable resources to the development of educational standards that are commensurate with those of developed countries. The focus of these efforts is on performance, curriculum, and learning outcomes [3]. The objective of this initiative is to establish standards for the provision of quality education to students with disabilities. Consequently, Saudi Arabia has made significant progress in integrating these students into mainstream schools, helping to transition them away from segregated environments. Inclusive education is defined as a system that enables students with disabilities to participate alongside their peers by providing appropriate supports, such as assistive aids and individualized education plans (IEPs). A plethora of studies have demonstrated that inclusive education has a positive impact on social interactions, fosters self-esteem, and accelerates the acquisition of skills in students with disabilities. However, the effective implementation of inclusive practices in PE can be challenging due to limited teacher preparation and low self-efficacy among teachers [4–6].

As posited by Bandura, the social cognitive theory underpinning the present study asserts that self-efficacy plays a pivotal role in the shaping of teachers' attitudes, behaviours, and classroom effectiveness [7]. Self-efficacy is pivotal to pre-service physical education (PE) teachers' willingness and ability to implement inclusive education practices. A study shows that teachers who possess high self-efficacy tend to adopt inclusive strategies, demonstrate supportive dispositions toward students with disabilities, and effectively manage the challenges of diverse classroom environments [8]. Conversely, teachers with low self-efficacy frequently underestimate their capacity to formulate and execute effective teaching strategies, which engenders a reluctance to adapt their practices to incorporate novel approaches and methodologies [9].

A number of factors have been identified as potentially influencing the self-efficacy of preservice PE teachers. These include previous exposure to students with disabilities, specialised coursework, and the quality of mentorship received during field experiences [2,10-12]. Conversely, a paucity of practical training opportunities, inadequate resources, and insufficient support can erode their confidence and readiness to teach inclusively [13-16]. These challenges underscore the necessity for comprehensive training programmes that address these issues and equip teachers with practical strategies for inclusive teaching. Despite the increasing focus on inclusion in Saudi Arabia, research on the self-efficacy of PE teachers in teaching students with disabilities remains limited [17]. Research conducted to date indicates that teacher confidence varies according to the nature of the disability. The identification of several barriers was also reported, including a lack of training, limited experience with specific disabilities, insufficient equipment, and inadequate administrative support [15,18].

The present study examined the self-efficacy of preservice PE teachers in teaching students with intellectual disabilities (ID), physical disabilities (PD), and visual impairments (VI) within general physical education (GPE) settings in Saudi Arabia. The study specifically examined whether levels of self-efficacy varied according to factors such as gender, academic year, participation in adapted physical education (APE) courses, and internship experiences in GPE or APE. The comprehension of these factors will empower teacher education programmes to enhance their training, more effectively equip preservice teachers for inclusive practice, and improve learning outcomes for students with disabilities.

MATERIAL AND METHODS

Participants

The study employed a convenience sample comprising 170 pre-service physical education teachers from the Department of Sports Science and Physical Activity at the University of Hafr Al Batin. The participants, aged 19-24 years (M = 21.61 ± 1.22 yrs), included 99 females and 71 males. More than half of the participants (54.7%) were in their fourth year of study, while 22.9% were in their second year and 22.4% were in their third year. Regarding APE courses, 55% of participants had completed two courses, 33.5% had taken one course, and 22.9% had not taken any. Additionally, 54.7% had participated in GPE or APE internships during the academic year, while 45.3% had not. Table 1 presents comprehensive results regarding the Demographic variables.

Measurements and Instruments

The measurement instrument included two stages: demographic characteristics and the self-efficacy scale for physical education teacher education majors toward children with disabilities (SE-PETE-D). The demographic section collected general information from pre-service PE teachers, including participants' age, gender, academic year, studying in APE courses, and internship experiences in GPE or APE.

The SE-PETE-D, developed and validated by Block, Hutzler, Barak, and Klavina, is used to evaluate the self-efficacy of both pre-service and in-service physical education (PE) teachers regarding the inclusion of students with intellectual disabilities (ID), physical disabilities (PD), and visual impairments (VI) in mainstream PE classes [19]. The Principal Investigator conducted a reliability analysis (using Cronbach's alpha) for the current sample, which demonstrated strong internal reliability: Cronbach's alpha was 0.94 for ID, 0.97 for PD, and 0.96 for VI. The SE-PETE-D comprises 33 items organized into three divisions: 11 questions focus on teaching students with ID, 12 on teaching students with PD, and 10 on teaching students with VI. Each division commences with a scenario describing a student with a specific disability, followed by items that ask participants to rate their confidence in performing various tasks. These tasks assessed include maintaining safety, modifying equipment, providing peer instruction, and adapting teaching strategies. Participants rated their confidence in performing each task using a 5-point Likert scale, where one denoted 'no confidence' and five denoted 'complete confidence.

Table 1. Demographic Variables of the Respondents

Factors	Indicator	Frequency	%
Gender	Male	71	41.8
	Female	99	58.2
Participation in APE courses	Zero	39	22.9
	One	57	33.5
	Two	74	43.5
Academic Year	2nd	39	22.9
	3rd	38	22.4
	4th	93	54.7
GPE or APE Internship	Yes	93	54.7
	No	77	45.3

APE= Adapted Physical Education; GPE= General Physical Education

The SE-PETE-D was translated into Arabic using standard cross-cultural adaptation procedures. An initial Arabic draft was created with the help of various Arabic translation tools, and the items were refined for clarity and conceptual equivalence. A bilingual specialist independently back-translated the Arabic version into English, and any discrepancies were resolved to ensure alignment with the original scale. Experts in adapted physical education reviewed the revised Arabic items for content accuracy and cultural appropriateness. After making minor adjustments, the final version was pilot tested for clarity and then uploaded to Google Forms for online administration.

Procedure

This study involved male and female undergraduate students who were pre-service PE teachers in their second, third, and fourth years of study. After agreeing to participate, they received detailed instructions on completing the questionnaires. Participation was voluntary, and strict confidentiality measures were implemented to protect personal privacy, including data anonymization wherever possible. Participants were also informed of their right to withdraw from the study at any time. Communication with participants was facilitated through links shared via the Blackboard and WhatsApp applications, which were sent directly to the pre-service PE teachers. The survey was carried out over a month, starting in November 2024, and achieved a completion rate exceeding 85%. This research received approval from the University of Hafr Al Batin Research Ethics Committee under reference number HPO-05-FT-25/02.

Statistical Analysis

Data were analyzed using SPSS Statistics (Version 25.0) and included both descriptive and inferential procedures. Descriptive statistics (percentages, means, and standard deviations) were calculated to summarize the sample characteristics and main variables. One-way ANOVAs were conducted to examine the effects of academic year, internship type (GPE or APE), and participation in APE courses on pre-service PE teachers' self-efficacy in teaching students with disabilities. Independent samples t-tests were used to evaluate gender differences. Statistical significance was determined at $p < .05$. Prior to conducting the analyses, the assumptions of normality and homogeneity of variance were assessed using the Shapiro–Wilk and Levene's tests, respectively.

RESULTS

The descriptive statistics from the Self-Efficacy for Pre-service PE Teachers in Disability Education (SE-PETE-D) scale demonstrated that there were divergent levels of self-efficacy across the various disability categories. The mean score for teaching students with intellectual disabilities was 3.17 ± 0.65, while the mean score for teaching students with physical disabilities was slightly lower at 3.10 ± 0.67. The lowest mean score was reported for the category of teaching students with visual impairments, which was 2.98 ± 0.80. When these scores were averaged across all disability types, the overall mean self-efficacy score was 3.09, with a standard deviation of 0.64. The findings suggest that pre-service physical education teachers exhibit a moderate degree of confidence in their capacity to incorporate students with disabilities into physical education (PE) settings. However, this confidence is observed to vary according to the nature of the disability.

An independent-samples t-test was performed in order to ascertain whether gender exerts a significant influence on the self-efficacy of pre-service PE teachers with regard to instructing students with disabilities, including those with intellectual, physical and visual impairments, in GPE classes. The findings indicated that female pre-service

teachers demonstrated higher scores than their male counterparts across all subscales of self-efficacy. Further details pertaining to the outcomes for each subscale are presented in Table 2.

A one-way analysis of variance (ANOVA) was conducted to evaluate the impact of the academic year on pre-service PE teachers' self-efficacy regarding the inclusion of students with intellectual, physical, and visual disabilities. A substantial variation was identified across the academic years for all subscales of self-efficacy. Fourth-year students demonstrated higher levels of self-efficacy than second-year students in all categories, with significant increases in confidence when including students with intellectual disabilities (M=3.34 vs. M=2.82 on a 5-point scale), physical disabilities (M=3.31 vs. M=2.72 on a 5-point scale), and visual impairments (M=3.28 vs. M=2.27 on a 5-point scale). Furthermore, a significant discrepancy in the levels of self-efficacy was observed between third- and second-year students with regard to teaching students with visual impairments (M=2.99 vs. M=2.27 on a 5-point scale). However, the analysis revealed no statistically significant differences between third- and fourth-year students across any self-efficacy subscales. Similarly, no differences were noted between third- and second-year students regarding intellectual or physical disabilities. These findings emphasise a general progression in self-efficacy across academic years, particularly prominent in the fourth year. The detailed outcomes for each subscale are presented in Table 2.

A further one-way analysis of variance (ANOVA) was conducted to evaluate the effect of participation in APE courses (Zero, One, and Two) during academic years on the self-efficacy of pre-service PE teachers in inclusivity for students with intellectual,

Table 2. Effects of Gender, Academic Year, APE Courses, and Internship Participation on Pre-Service Physical Education Teachers' Self-Efficacy (SE-PETE-D) Toward Inclusion of Students with Disabilities

Factor	Subcategory	SE-PETE-ID Mean ± SD	SE-PETE-PD Mean ± SD	SE-PETE-VI Mean ± SD
Gender	Male	2.97 ± 0.67	2.95 ± 0.71	2.78 ± 0.85
	Female	3.32 ± 0.60	3.21 ± 0.61	3.13 ± 0.73
	Total	3.17 ± 0.65	3.10 ± 0.67	2.98 ± 0.80
	Statistic	t = 3.59; p=0.001; d = 0.55	t = 2.55; p = 0.012; d = 0.39	t = 2.95; p = 0.004; d = 0.44
Academic Year	2nd Year	2.82 ± 0.71	2.72 ± 0.68	2.27 ± 0.82
	3rd Year	3.13 ± 0.64	2.99 ± 0.64	2.99 ± 0.76
	4th Year	3.34 ± 0.57	3.31 ± 0.59)	3.28 ± 0.59
	Total	3.17 ± 0.65	3.10 ± 0.67	2.98 ± 0.80
	Statistic	F = 9.82; p = 0.001 η^2= 0.11	F = 13.13; p = 0.001 η^2 = 0.14	F = 29.95; p = 0.001 η^2=0.26
Number of APE Courses	None	2.82 ± 0.71	2.72 ± 0.68	2.27 ± 0.82
	One	3.19 ± 0.64	3.08 (0.65)	3.12 ± 0.73
	Two	3.34 ± 0.56	3.32 ± 0.58	3.26 ± 0.59
	Total	3.17 ± 0.65	3.10 ± 0.67	2.98 ± 0.80
	Statistic	F = 9.198; p = 0.001 η^2 = 0.1	F = 11.75; p = 0.001 η^2 = 0.12	F = 27.49; p = 0.001 η^2 = 0.25
Internship Participation (GPE/APE)	Yes	3.34 ± 0.57	3.31 ± 0.59	3.28 ± 0.59
	No	2.97 ± 0.70	2.85 ± 0.67	2.62 ± 0.87
	Total	3.17 ± 0.65	3.10 ± 0.67	2.98 ± 0.80
	Statistic	F= 14.47; p = 0.001; η^2 = 0.08	F = 22.30; p = 0.001; η^2 = 0.12	F = 34.52; p = 0.001; η^2 = 0.17

physical, and visual disabilities. The present study found that enrolment in APE courses was significantly associated with differences in self-efficacy across all subscales. It was evident that pre-service PE teachers who had not undertaken any APE courses exhibited lower levels of self-efficacy in comparison to those who had completed one or two such courses. For instance, the mean self-efficacy scores for individuals with intellectual disabilities increased from 2.82 (no courses) to 3.19 (one course) and 3.34 (two courses); however, no significant difference was observed between those who took one and two courses. Analogous trends were identified in the case of physical disabilities (mean scores of 2.72, 3.08, and 3.32) and visual impairments (mean scores of 2.27, 3.12, and 3.26). These findings suggest that enrolment in APE courses has a positive impact on self-efficacy, with significant improvements being observed after completion of at least one course. The detailed outcomes for each subscale are presented in Table 2.

Finally, one-way ANOVA was performed to determine whether participation in GPE or APE internships significantly affected the self-efficacy of pre-service PE teachers in instructing students with disabilities. The findings demonstrated that pre-service PE teachers who participated in GPE or APE internships exhibited higher self-efficacy scores across all subscales, including intellectual, physical, and visual disabilities, in comparison to those who did not participate. The detailed outcomes for each subscale are presented in Table 2.

DISCUSSION

The present study examined the influence of gender, APE coursework, academic level, and internship experience on the self-efficacy of Saudi pre-service PE teachers when working with students with intellectual, physical, and visual disabilities. The participants expressed a sense of confidence in teaching students with physical disabilities and a sense of inadequacy in supporting those with visual impairments. This finding aligns with the extant literature, which suggests that teachers often feel underprepared to teach students with visual impairments [20], which aligns with sport-related studies showing that visual factors influence performance and accuracy [21]. These results emphasise the necessity for targeted training to equip future teachers with strategies that are specific to visual impairment.

Female pre-service teachers reported higher levels of self-efficacy across all disability categories, which is consistent with research indicating that women frequently exhibit greater confidence and more positive attitudes towards inclusive education [10,22–24]. Within the context of Saudi Arabia, factors such as empathetic dispositions, stronger pro-inclusion attitudes, and higher engagement in training opportunities may contribute to these gender differences [18,25,26]. These findings emphasise the necessity of incorporating gender-related patterns into the design of inclusive teacher preparation programmes.

An increase in self-efficacy was observed as academic level increased, with fourth-year students demonstrating higher levels of self-efficacy compared to second-year students. This pattern is likely indicative of the benefits accrued from advanced coursework, greater theoretical knowledge, and more extensive teaching experience acquired during internships. Collectively, these factors serve to enhance readiness for inclusive instruction [27]. Similar developmental trends in performance and learning over time have been observed in longitudinal motor studies [28]. Conversely, second-year students are generally at an earlier stage of their training, concentrating on fundamental educational principles and generic teaching methods, which may not adequately equip them for the intricacies of inclusive instruction. Furthermore, participants who lacked APE coursework or had not completed GPE or APE internships reported lower self-efficacy

than those who had. This finding serves to reinforce the importance of specialised training and practical experience in fostering confidence and competence in inclusive settings. It thereby corroborates the previous evidence that coursework and internships significantly strengthen teacher self-efficacy [20, 29].

The study is subject to several limitations. First, it was conducted at a single institution, the University of Hafr Al Batin, which restricts the generalisability of the findings to other regions of Saudi Arabia or to different educational contexts. This limitation is common in many single-site studies, including recent research on physical activity, motor skills, and health indicators [30].

Secondly, the utilisation of convenience sampling may have introduced bias, thereby affecting the sample's representativeness. The present study specifically focused on the self-efficacy of Saudi pre-service PE teachers when instructing students with intellectual, physical, and visual disabilities in general physical education settings. Consequently, the findings may not be generalisable to teaching students with other types of disabilities.

Future Research Directions

The present study identifies several avenues for future exploration. It is recommended that future studies investigate the reasons why female teachers and those in their final academic year exhibit higher self-efficacy, with a view to understanding the role of motivations, prior experiences, and cultural factors. It is imperative that research also examines the long-term impact of APE coursework and internships on self-efficacy once teachers enter the workforce. Furthermore, the investigation of the impact of diverse internship types, with a particular focus on those involving direct interaction with students with disabilities, could facilitate the identification of compelling experiences that enhance self-efficacy. Exploration of the role of mentorship during internships and cross-cultural research to compare self-efficacy outcomes in different countries would also be valuable. It is therefore vital that sustained research continues in order to provide insights that will lead to the improvement of PE teacher preparation programmes and the promotion of more inclusive physical education on a global scale.

CONCLUSION

The findings of this study indicate that factors such as gender, academic year, participation in APE or GPE internships, and enrolment in APE courses significantly contribute to increased levels of self-efficacy among pre-service PE teachers in Saudi Arabia. The findings revealed notable differences among the groups based on these variables. The SE-PETE-D questionnaire underscores the necessity for efficacious interventions for pre-service PE teachers, including the undertaking of supplementary APE courses and the engagement in APE internships, to augment their self-efficacy in teaching students with disabilities in general PE classes. In order to enhance the self-efficacy of pre-service PE teachers, it is essential that teacher education programmes adopt a multifaceted approach. The integration of experiential learning components, such as practicum placements in inclusive classrooms, enables pre-service teachers to translate their theoretical knowledge into real-world contexts. Furthermore, the integration of courses focused on disability awareness, adaptive physical education, and inclusive teaching methods can provide a robust foundation for understanding and addressing the needs of students with disabilities. Collaborative learning opportunities, where pre-service PE teachers work alongside peers, mentors, and specialists in inclusive education, can also foster confidence and skill development. Furthermore, the regular provision of feedback and the implementation of reflective practices have been demonstrated to

support the growth of self-efficacy by helping teachers to identify areas for improvement and to build on their strengths. Teacher education programmes have the capacity to further enhance these outcomes by embedding inclusive education principles throughout the curriculum, fostering interdisciplinary collaboration among physical education, special education, and psychology departments, and establishing partnerships with schools that practise inclusive education to provide ongoing mentorship and practicum experiences. Furthermore, the implementation of continuous professional development frameworks, with training programmes aligned with national inclusion policies and global best practices, has the potential to enhance the overall capacity of Saudi teacher education programmes to promote equity and inclusion in physical education settings.

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