



# Preparing Future Physical Education Teachers for Inclusion: Impact of External Practices on Primary Education Centres<sup>1</sup>

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## Preparando a las y los Futuros Docentes de Educación Física para la Inclusión: Impacto de las Prácticas Externas en Centros de Educación Primaria

BINGEN MARCOS-RIVERO<sup>2</sup>

*Universidad del País Vasco (UPV/EHU), España*

*bingen.marcos@ehu.es*

*<https://orcid.org/0000-0002-8617-4567>*

JON ORTUONDO

*Escuela Universitaria de Magisterio Begoñako Andra Mari, España*

*jortuondo@bam.edu.es*

*<https://orcid.org/0000-0003-0657-4518>*

JOSU ASCONDO

*Universidad del País Vasco (UPV/EHU), España*

*josu.ascondo@ehu.es*

*<https://orcid.org/0000-0003-3823-9466>*

ESTIBALIZ ROMARATEZABALA

*Universidad del País Vasco (UPV/EHU), España*

*estibaliz.romaratezabala@ehu.es*

*<https://orcid.org/0000-0002-4053-837X>*

JAVIER YANCI

*Universidad del País Vasco (UPV/EHU), España*

*javier.yanci@ehu.es*

*<https://orcid.org/0000-0002-8965-5024>*

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2 Autor de correspondencia: Bingen Marcos-Rivero.

### **Abstract:**

This study examines perceptions of inclusion and general self-efficacy among prospective physical education (PE) teachers after completing internships in primary education settings. Fifty-four PE students undertook internships in primary schools. Data were collected using the Teacher Training for Inclusion Questionnaire (CEFI-R) and the General Self-Efficacy Scale (EAG). Differences were analyzed according to gender, type of school (public vs. subsidized), prior experience with students with disabilities, academic performance, and the relationship between perceptions of inclusion and self-efficacy. Participants reported feeling better prepared for inclusive teaching following their internship experience. Significant differences were found based on prior experience with students with disabilities and, to a lesser extent, by gender and type of school. No significant differences were observed according to academic performance. A significant relationship was identified between perceptions of inclusion and self-efficacy. Practical teaching experience promotes positive attitudes toward inclusion and enhances self-efficacy among future PE teachers. Teacher education programs should prioritize diverse and inclusive practicum experiences to better prepare students for inclusive teaching.

### **Keywords:**

Inclusive education; self-efficacy; initial teacher training; perception; attitude; disability.

### **Résumé:**

Cette étude analyse la perception de l'inclusion et l'auto-efficacité générale chez les futurs enseignants d'éducation physique après des stages en centres d'enseignement primaire. Cinquante-quatre étudiants en éducation physique ont réalisé des stages dans des centres d'enseignement primaire. Les données ont été recueillies à l'aide du Questionnaire de Formation des Enseignants pour l'Inclusion (CEFI-R) et de l'Échelle d'Auto-efficacité Générale (EAG). Les différences ont été analysées en fonction du sexe, du type de centre (public vs sous contrat), de l'expérience avec les élèves en situation de handicap, de la moyenne des notes, ainsi que de la relation entre la perception de l'inclusion et l'auto-efficacité. Les participants se sont déclarés plus préparés à l'enseignement inclusif après le stage. Des différences significatives ont été relevées en fonction de l'expérience avec les élèves en situation de handicap et, dans une moindre mesure, du sexe et du type de centre. Aucune différence n'a été trouvée en fonction de la moyenne des notes. Une

### **Resumen:**

Este estudio analiza la percepción de la inclusión y la autoeficacia general entre futuros profesores de educación física tras realizar prácticas en centros de educación primaria. Cincuenta y cuatro estudiantes de educación física completaron prácticas en centros de educación primaria. Los datos se recopilaron utilizando el Cuestionario de Formación Docente para la Inclusión (CEFI-R) y la Escala de Autoeficacia General (EAG). Se analizaron las diferencias basadas en género, tipo de centro (público vs. concertado), experiencia con estudiantes con discapacidades, promedio de calificaciones y la relación entre la percepción de inclusión y la autoeficacia. Las y los participantes informaron sentirse más preparados para la enseñanza inclusiva después de las prácticas. Se encontraron diferencias significativas basadas en la experiencia con estudiantes con discapacidades y, en menor medida, en género y tipo de centro. No se encontraron diferencias basadas en el promedio de calificaciones. Se identificó una relación significativa entre la percepción de inclusión y la autoeficacia. La experiencia práctica fomenta actitudes positivas y autoeficacia en futuro profesorado de educación física. Los programas educativos deberían enfatizar experiencias prácticas diversas e inclusivas para preparar mejor a los docentes.

### **Palabras clave:**

Educación inclusiva; autoeficacia; formación inicial; percepción; actitud; discapacidad.

relation significative a été identifiée entre la perception de l'inclusion et l'auto-efficacité. L'expérience pratique favorise des attitudes positives et une auto-efficacité accrue chez les futurs enseignants d'éducation physique. Les programmes éducatifs devraient mettre l'accent sur des stages variés et inclusifs pour mieux préparer les enseignants.

**Mots clés:**

Éducation inclusive; auto-efficacité; formation initiale; perception; attitude; handicap.

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## Introduction

In the educational field, inclusion is defined as a process that involves identifying and eliminating barriers so that all students, regardless of their characteristics, can access education and learn optimally (Ainscow, 2020). This is reflected in the implementation of inclusive best practices, understood as successful and replicable experiences that promote equitable education for all (Molina-Garuz et al., 2023). In this regard, an inclusive school not only strives for academic success but also integrates quality with equity, fostering a participatory and inclusive culture that acknowledges and respects diversity while promoting human differences as both a value and a fundamental right (Aróstegui-Barandica et al., 2023). Research indicates that it is crucial for future teachers to engage in experiential education to equip them with the necessary tools for their future roles, especially for inclusion (Dignath et al., 2022). This approach enables future teachers to not only develop greater self-efficacy but also gain a deeper understanding of social and cultural dynamics within the educational environment, consequently equipping them to effectively address the challenges of inclusive and diverse education (Glacier et al., 2021). Several decades ago, inclusive education was established as a paradigm with multiple benefits for the education of students with disabilities (Lindner et al., 2023). This inclusive approach to teaching processes has increased the presence of these students in educational centre classrooms (Schwab, 2020). Specifically, in physical education (PE) sessions, there has also been an increase in the participation of students with disabilities, as PE sessions are considered an ideal setting to promote positive aspects that are more complex to address in classroom sessions (Tarantino et al., 2023).

Despite the scientific and practical advances experienced in recent years, inclusion in PE classes remains one of the most significant challenges in education (Alhumaid, 2023), as numerous barriers still hinder this process (Haegele et al., 2018; MacEachern et al., 2021). Despite these difficulties, teachers have the responsibility to ensure quality inclusive education (Lindner et al., 2023) and inclusive PE (Haegele et al., 2021). To achieve this, the attitude, self-efficacy, and perception of PE teachers regarding inclusive education are indicators of success in the inclusion of these students (Alhumaid, 2023; Woodcock & Jones, 2020). Therefore, it is essential that the attitude, predisposition, and especially the training of teachers are appropriate (Dignath et al., 2022). In this regard, the findings of Méndez-Ulrich et al. (2023) underscore the importance of educational, human, and community resources in teacher preparation, emphasizing that training should focus on the development of effective intervention strategies rather than merely transmitting theoretical knowledge about these conditions. Furthermore, it has been shown that experiencing inclusive situations (Derri et al., 2014; Weber & Greiner, 2019) and having contact with students with disabilities (An, 2021) can help teachers develop a better perception of, and attitude towards, including students with disabilities. Additionally, various studies affirm that specific training in inclusion helps future teachers to have a better attitude and self-efficacy, and be better prepared to practise their profession (Alhumaid, 2023; Jiménez-Monteaudo et al., 2023). However, it has also been highlighted that one of the most significant barriers to inclusion as perceived by students with disabilities is the lack of training among teachers working in compulsory education (Collado-Sanchis et al., 2020; González-Gil et al., 2019a) and at the university level (Marcos-Rivero et al., 2024). This perception held by students with disabilities aligns with the perception of university students in initial teacher training (future teachers), who state that their training is not comprehensive enough for them to be able to handle inclusive and quality teaching processes in the future effectively (Marcos-Rivero et al., 2025). This aspect underscores the need to deepen the existing scientific knowledge on the training of future teachers, particularly regarding external practices, to ensure inclusive and quality education.

One of the strategies used to improve the training and competencies of future teachers is to provide real-life experiences during their initial training, such as completing the various practicums required in their uni-

versity degree. It has been stated that undergoing practical training in real contexts helps to train future teachers by increasing their effectiveness in terms of inclusive education (Derri et al., 2014). Moreover, these practices contribute to acquiring positive experiences that will be useful in promoting a much more inclusive education (Weber & Greiner, 2019). Similarly, Loveys (2022) observed that future primary education teachers who completed external practices improved their training and acquired skills and abilities that helped them provide quality education. It is noteworthy that, in addition to providing enriching experiences, these practices also help future teachers enhance their pedagogical understanding and skills, which will aid them in practicing more inclusively in the future (Beshir et al., 2023). Although practical subjects in educational centres are included in the university training of future teachers (Beshir et al., 2023; Weber & Greiner, 2019), there needs to be more evidence of the effects of completing these practices on the perception of inclusive education and perceived self-efficacy.

Additionally, student practices vary significantly, as characteristics such as gender, prior experiences, specific training in inclusive education, and academic record can influence how they experience these practices. Moreover, the practices are conducted in diverse contexts, including different types of centres (public or subsidized) and the presence or absence of contact with individuals with disabilities during the practices. Given the diversity of factors that can influence the training process through these practices, it is necessary to understand this aspect fully, taking these variables into consideration.

Therefore, the objectives of the present study were: 1) to analyse the perception of inclusive education and the general self-efficacy of future PE teachers after completing external practices in a primary education centre; 2) to analyse differences based on gender, the type of centre where the practices were conducted (public vs subsidized), experience with students with disabilities during the practices, and the average grade in the primary education degree; and 3) to determine if there is a correlation between the perception of inclusion and general self-efficacy.

## Method

### Participants

The present study involved 54 fourth-year university students ( $21.9 \pm 1.3$  years old) enrolled in the primary education degree program specializing in PE, including 21 women (38.9%,  $21.6 \pm 1.0$  years old) and 33 men (61.1%,  $22.1 \pm 1.4$  years old). Among the participants, 34 had an average academic grade lower than 7 (grade < 7, 63.0%), and 20 had an average grade of 7 or higher (grade  $\geq$  7, 37.0%). Additionally, 40 students (74.1%) completed their practices in a subsidized centre, while 14 students (25.9%) completed them in a public centre. Furthermore, 43 students (79.6%) had experiences with students with disabilities during their primary education practices, compared to 11 students (20.4%) who did not have such experiences. The inclusion criteria for participating in the study were that the participants were university students with a primary education degree specializing in PE and had completed their practicum in a primary education centre. The study followed the guidelines of the Declaration of Helsinki (2013) and was approved by the Ethics Committee for Research on Human Beings at the University of (the Basque Country (EHU) (CEISH M10/2023/280).

### Procedure

All participants completed a course called "Practicum", which consisted of 30 credits (18 credits for general practices and 12 for specific PE practices). Within these 30 credits, participants conducted an external practicum in a primary education centre, lasting 15 weeks. In addition to performing the practicum, participants had to design and implement a didactic sequence, didactic unit, and/or learning situation in the primary education centre. These placements were conducted in the area of Physical Education in primary schools, enabling university students to encounter real-life situations in school contexts and thereby facilitating the practical application of the content covered during their training. To assess the perception of inclusion and general self-efficacy of future PE teachers after completing the Practicum course, the Questionnaire of Teacher Training for Inclusion (CEFI-R) (González-Gil et al., 2019b) and the General Self-Efficacy Scale (EAG, Spanish version) (Baessler &

Schwarzer, 1996) were used. Each participant completed the questionnaire individually, using a computer and in the researcher's presence. If requested by the participant, the researchers clarified any questions posed in the questionnaire. Before completing the questionnaire, all participants received detailed information about the procedure to ensure proper completion. Participants took approximately 15 minutes to answer the questions. Data were collected using *encuestafacil.com* and transferred to a .xls file for further analysis.

## Measures

Prior to completing the questionnaires, all participants provided information about their gender, age, the type of centre where they had completed their practicum (public, private, or subsidized), whether they had experiences with students with disabilities, their academic grade point average, and whether they felt more prepared after completing the practicum than before.

**Teacher Training for Inclusion Questionnaire:** To assess the perception of inclusion among university students and future PE teachers, the Questionnaire of Teacher Training for Inclusion (CEFI-R) (González-Gil et al., 2019b) was used. The CEFI-R questionnaire has recently been used with future teachers (Rojo-Ramos et al., 2020) and with teachers already in the professional field (Triviño-Amigo et al., 2022). The CEFI-R questionnaire consists of 19 items with responses on a Likert-type scale with four response options: "1 = strongly disagree", "2 = disagree", "3 = agree", and "4 = strongly agree". The questionnaire is divided into four dimensions: 1) concept of diversity (5 items); 2) methodology (5 items); 3) supports (4 items); and 4) community participation (5 items). The questionnaire demonstrated excellent internal consistency ( $\alpha = 0.79$ ) (González-Gil et al., 2019b).

**General Self-Efficacy Questionnaire:** To assess the general self-efficacy of university students in the primary education degree programme with a PE specialization, the General Self-Efficacy Scale (EAG, Spanish version), validated by Baessler and Schwarzer (1996), was used. This questionnaire has recently been employed with university students (Di et al., 2023; Grimaldo-Muchotrigo et al., 2021). In a previous study, the EAG questionnaire demonstrated internal consistency (Cronbach's alpha) ranging from 0.79 to 0.93 (Schwarzer & Jerusalem, 1995). The EAG con-

sists of ten items organized unifactorially, with responses on a four-option Likert scale (1 = not at all true, 2 = barely true, 3 = moderately true, and 4 = exactly true). The scale score can range from 10 to 40 points.

## Statistical Analysis

The results are presented as mean  $\pm$  standard deviation, along with frequencies and percentages of the responses provided by the participants for each item or question. To assess data normality and equality of variances, the Shapiro-Wilk statistic and Levene's test were used, respectively. Given that the distribution of the analyzed variables did not conform to a normal distribution, non-parametric statistical tests were applied. To analyse the mean differences in the results obtained by the different groups, the Mann-Whitney U statistic was applied. Additionally, the magnitudes of the differences were calculated using the probability of superiority (PS) (Erceg-Hurn & Mirosevich, 2008). The following qualitative interpretation was used for PS values: no differences between means (PS = 0.00–0.50), small (PS = 0.50–0.56), medium (PS = 0.56–0.71), and large (PS > 0.71) (Grissom, 1994). Furthermore, to analyse the statistical significance in the distribution of frequencies and percentages of responses from different groups, the chi-square (Chi<sup>2</sup>) statistical analysis was used. Cramér's V was utilized to determine the effect size for the Chi<sup>2</sup> test. The qualitative interpretation of Cramér's V values was as follows: 0–0.10 (no differences), 0.10–0.30 (small), 0.30–0.50 (moderate), and 0.50–1.00 (large) (Betancourt & Caviedes, 2018). Finally, Spearman's correlation coefficients were calculated to determine the relationships between the perception of inclusion and general self-efficacy. The interpretation of the correlation was as follows: 0.01–0.19 = negligible; 0.20–0.29 = insignificant; 0.30–0.39 = moderate; 0.40–0.69 = strong;  $\geq$  0.70 = very strong (Dancey & Reidy, 2004). Statistical analyses were performed using JASP software (JASP for MacOs, version 0.18.3, Amsterdam, the Netherlands). Statistical significance was set at  $p < 0.05$ .

## Results

All participants (100%) reported feeling more prepared at the end of their external practicum in a primary education centre than before. Table 1

presents the results obtained from the CEFI-R questionnaire completed by future PE teachers who had undertaken external practices in primary education centres. The mean scores for each block are as follows: Block 1 (Diversity Conception) includes items with means ranging from 1.6 to 2.1; Block 2 (Methodology) presents values between 2.6 and 3.1; Block 3 (Supports) shows a wider range, from 2.3 to 3.6; and Block 4 (Community Participation) includes items with means between 3.1 and 3.6.

**Table 1**

*Results of the Evaluation of Teacher Preparation for Inclusion Questionnaire (CEFI-R, Spanish version)*

Items	M ± SD	Completely Disagree	Disagree	Agree	Completely Agree
<b>Block 1: DIVERSITY CONCEPTION</b>	1.8 ± 0.5				
Item 1. I would prefer not to have students with specific educational support needs in my classroom.	1.8 ± 0.9	48.1% (26)	27.8% (15)	22.2% (12)	1.9% (1)
Item 2. A child with specific educational support needs interrupts the classroom routine and hinders the learning of their peers.	1.6 ± 0.6	48.1% (26)	44.4% (24)	7.4% (4)	0.0% (0)
Item 3. We should not enrol students with special educational needs in mainstream schools until we have the proper training for it.	1.7 ± 0.9	50.0% (27)	31.5% (17)	14.8% (8)	3.7% (2)
Item 4. Students with specific needs for educational support cannot follow the day-to-day curriculum.	2.1 ± 0.8	24.1% (13)	46.3% (25)	25.9% (14)	3.7% (2)
Item 5. I am concerned that my workload will increase if I have students with specific educational support needs in my class.	1.8 ± 0.8	37.0% (20)	46.3% (25)	13.0% (7)	3.7% (2)
<b>Block 2: METHODOLOGY</b>	2.8 ± 0.4				
Item 6. I know how to teach each of my students differently based on their individual characteristics.	2.7 ± 0.6	1.9% (1)	29.6% (16)	61.1% (33)	7.4% (4)
Item 7. I know how to develop teaching units and classes considering the diversity of students.	2.7 ± 0.6	1.9% (1)	33.3% (18)	57.4% (31)	7.4% (4)
Item 8. I know how to adapt my assessment methods to the individual needs of each of my students.	2.9 ± 0.6	1.9% (1)	20.4% (11)	66.7% (36)	11.1% (6)
Item 9. I know how to manage and adapt teaching materials to meet the needs of each of my students.	2.6 ± 0.6	3.7% (2)	33.3% (18)	57.4% (31)	5.6% (3)
Item 10. I am capable of adapting my communication techniques to ensure that all students can be successfully included in the regular classroom.	3.1 ± 0.6	0.0% (0)	9.3% (5)	66.7% (36)	24.1% (13)

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Items	M ± SD	Completely Disagree	Disagree	Agree	Completely Agree
<b>Block 3: SUPPORTS</b>	3.1 ± 0.4				
Item 11. Joint planning between teacher and support teacher would facilitate providing support within the classroom.	3.6 ± 0.5	0.0% (0)	0.0% (0)	42.6% (23)	57.4% (31)
Item 12. I believe the best way to provide support to students is for the support teacher to join the classroom, rather than doing so in the support classroom.	3.4 ± 0.6	0.0% (0)	3.7% (2)	50.0% (27)	46.3% (25)
Item 13. The role of the support teacher is to work with all the students in my classroom.	2.3 ± 0.8	16.7% (9)	42.6% (23)	33.3% (18)	7.4% (4)
Item 14. I consider that the place of the support teacher is inside the regular classroom with each of the teachers.	3.1 ± 0.7	3.7% (2)	9.3% (5)	59.3% (32)	27.8% (15)
<b>Block 4: COMMUNITY PARTICIPATION</b>	3.3 ± 0.4				
Item 15. The educational project should be reviewed with the participation of the different stakeholders of the educational community (teachers, parents, students, etc.).	3.1 ± 0.6	0.0% (0)	11.1% (6)	66.7% (36)	22.2% (12)
Item 16. It is essential that there is a very close relationship between the teaching staff and the other educational agents (parents' association, neighbourhood association, school council, etc.).	3.2 ± 0.6	0.0% (0)	9.3% (5)	57.4% (31)	33.3% (18)
Item 17. The school must promote the involvement of parents and the community.	3.4 ± 0.6	0.0% (0)	5.6% (3)	50.0% (27)	44.4% (24)
Item 18. Each member of the educational centre (teachers, parents, students, other professionals) is a fundamental element of it.	3.6 ± 0.5	0.0% (0)	1.9% (1)	38.9% (21)	59.3% (32)
Item 19. The centre must work together with the neighbourhood's resources (library, social services, health services, etc.).	3.3 ± 0.6	0.0% (0)	7.4% (4)	51.9% (28)	40.7% (22)

M = mean, SD = standard deviation. Likert scale data are presented in percentages (and frequencies).

Additionally, Table 2 presents the results obtained from the EAG questionnaire completed by future PE teachers who have undertaken external practices in primary education centres. The mean scores of the items range between  $3.0 \pm 0.5$  and  $3.5 \pm 0.5$ , with a total average score of  $3.2 \pm 0.3$ , indicating a moderately high level of self-efficacy.

**Table 2**

*Results of the General Self-Efficacy Scale (EAG, Spanish version)*

Items	M ± SD	Incorrect	Barely true	Quite true	True
Item 1. If someone opposes me, I can find means and ways to get what I want.	3.0 ± 0.5	0.0% (0)	11.1% (6)	74.1% (40)	14.8% (8)
Item 2. I can always manage to solve difficult problems if I try hard enough.	3.5 ± 0.5	0.0% (0)	1.9% (1)	44.4% (24)	53.7% (29)
Item 3. It is easy for me to stick to my aims and accomplish my goals.	3.2 ± 0.7	0.0% (0)	13.0% (7)	53.7% (29)	33.3% (18)
Item 4. I am confident that I could deal efficiently with unexpected events.	3.2 ± 0.6	0.0% (0)	9.3% (5)	61.1% (33)	29.6% (16)
Item 5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	3.2 ± 0.5	0.0% (0)	5.6% (3)	70.4% (38)	24.1% (13)
Item 6. I can remain calm when facing difficulties because I can rely on my coping abilities.	2.8 ± 0.7	0.0% (0)	35.2% (19)	51.9% (28)	13.0% (7)
Item 7. No matter what comes my way, I am usually able to handle it.	3.0 ± 0.6	0.0% (0)	14.8% (8)	68.5% (37)	16.7% (9)
Item 8. I can solve most problems if I invest the necessary effort.	3.5 ± 0.5	0.0% (0)	0.0% (0)	53.7% (29)	46.3% (25)
Item 9. If I am in trouble, I can usually think of something to do.	3.1 ± 0.6	0.0% (0)	11.1% (6)	68.5% (37)	20.4% (11)
Item 10. When I am confronted with a problem, I can usually find several solutions.	3.1 ± 0.7	1.9% (1)	13.0% (7)	61.1% (33)	24.1% (13)
<b>TOTAL</b>	<b>3.2 ± 0.3</b>				

M = mean, SD = standard deviation. Likert scale data are presented in percentages (and frequencies).

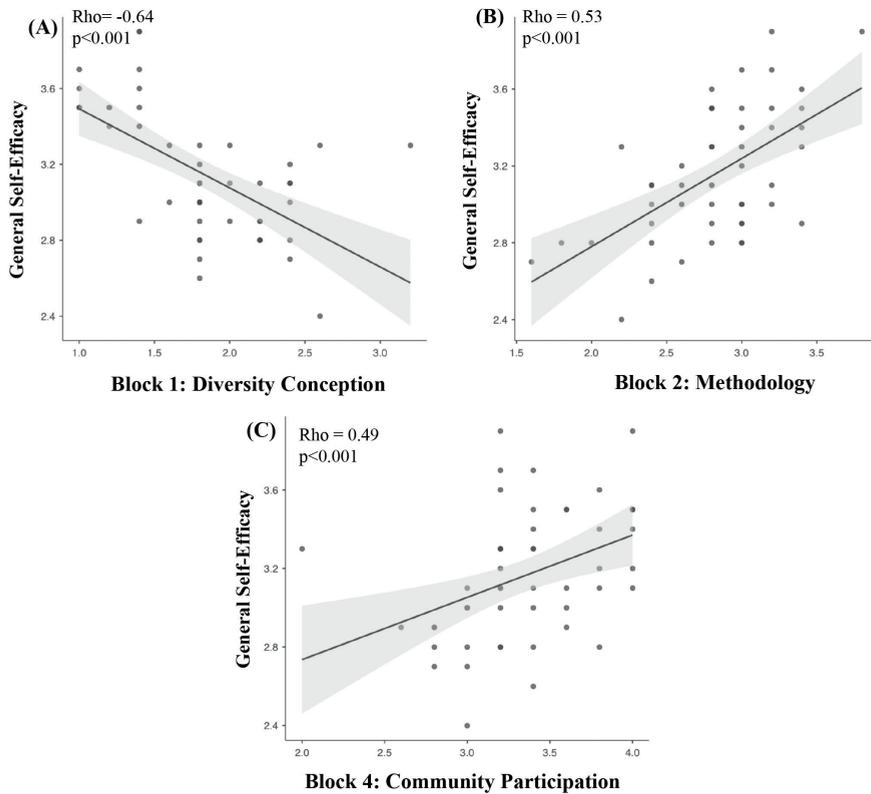
The analysis of differences found between the various groups in the responses to the CEFI-R and EAG shows that, firstly, regarding gender, males scored significantly higher than females in the mean of Block 3 = Support ( $3.2 \pm 0.4$  vs  $3.0 \pm 0.4$ ,  $p = 0.026$ ,  $PS = 0.68$ , large). Additionally, males scored higher than females on Item 1, "I would prefer not to have students with specific educational support needs in my classroom" ( $2.0 \pm 0.9$  vs  $1.5 \pm 0.7$ ,  $p = 0.036$ ,  $PS = 0.66$ ); Item 5, "I am concerned that my workload will increase if I have students with specific educational support needs in my class" ( $2.0 \pm 0.7$  vs  $1.6 \pm 0.9$ ,  $p = 0.050$ ,  $PS = 0.65$ ); Item 12, "I believe the best way to provide support to students is for the support teacher to join the classroom, rather than doing so in the support classroom" ( $3.5 \pm 0.6$  vs  $3.2 \pm 0.5$ ,  $p = 0.045$ ,  $PS = 0.64$ ); and Item 14, "I consider that the place of the support teacher is inside the regular classroom with each of the teachers" ( $3.2 \pm 0.8$  vs  $2.9 \pm 0.5$ ,  $p = 0.025$ ,  $PS = 0.66$ ;  $\chi^2 = 9.8$ ,  $p = 0.020$ , Cramér's  $V = 0.42$ ). Secondly, with regard to differences based on academic record groups ( $< 7$  vs  $\geq 7$ ), no differences

were found in the perception of inclusion between future teachers with an average of  $< 7$  and those with an average of  $\geq 7$ . Thirdly, in terms of the characteristics of the centre where the practicum was conducted (public vs subsidized), university students who completed their practicum in a public centre scored higher on Item 15, "The educational project should be reviewed with the participation of the different stakeholders of the educational community (teachers, parents, students, etc.)" ( $3.4 \pm 0.5$  vs  $3.0 \pm 0.6$ ,  $p = 0.016$ ,  $PS = 0.32$ ;  $\text{Chi}^2 = 6.0$ ,  $p = 0.050$ ,  $\text{Cramér's } V = 0.33$ ). Fourthly, in regard to whether the students had experiences with students with disabilities (no experience vs some experience) during their practicum period, students who had such experiences scored higher in the mean of Block 2 = Methodology ( $2.5 \pm 0.5$  vs  $2.9 \pm 0.4$ ,  $p = 0.011$ ,  $PS = 0.25$ ). In the same way, students who had experience with students with disabilities presented higher scores on Item 5, "I am concerned that my workload will increase if I have students with specific educational support needs in my class" ( $\text{Chi}^2 = 8.7$ ,  $p = 0.033$ ,  $\text{Cramér's } V = 0.40$ ); Item 7, "I know how to develop teaching units and classes considering the diversity of students" ( $2.3 \pm 0.5$  vs  $2.8 \pm 0.6$ ,  $p = 0.006$ ,  $PS = 0.26$ ;  $\text{Chi}^2 = 9.9$ ,  $p = 0.033$ ,  $\text{Cramér's } V = 0.43$ ); Item 9, "I know how to manage and adapt teaching materials to meet the needs of each of my students" ( $2.1 \pm 0.5$  vs  $2.8 \pm 0.6$ ,  $p < 0.001$ ,  $PS = 0.21$ ;  $\text{Chi}^2 = 11.98$ ,  $p = 0.007$ ,  $\text{Cramér's } V = 0.47$ ); Item 11, "Joint planning between teacher and support teacher would facilitate providing support within the classroom" ( $3.3 \pm 0.5$  vs  $3.7 \pm 0.5$ ,  $p = 0.026$ ,  $PS = 0.31$ ;  $\text{Chi}^2 = 5.13$ ,  $p = 0.024$ ,  $\text{Cramér's } V = 0.31$ ); and Item 18, "Each member of the educational centre (teachers, parents, students, other professionals) is a fundamental element of it" ( $\text{Chi}^2 = 6.0$ ,  $p = 0.050$ ,  $\text{Cramér's } V = 0.33$ ), in which students who had experiences with students with disabilities scored higher. Finally, no significant differences were found between the various groups in the items of the EAG questionnaire.

With respect to the correlations between the results obtained from both questionnaires, the total EAG scores correlated significantly with the results obtained in the CEFI-R in Block 1 = Concept of Diversity ( $\text{Rho} = -0.64$ ,  $p < 0.001$ , strong) (Figure 1A), in Block 2 = Methodology ( $\text{Rho} = 0.53$ ,  $p < 0.001$ , strong) (Figure 1B), and in Block 4 = Community Participation ( $\text{Rho} = 0.49$ ,  $p < 0.001$ , strong) (Figure 1C). No significant correlation was found between the EAG scores and the results obtained in Block 3 = Support of the CEFI-R ( $\text{Rho} = 0.03$ ,  $p = 0.818$ , negligible).

### Figure 1

*Correlation Between the Results of the blocks of the Teacher Training Evaluation for Inclusion Questionnaire (CEFI-R) and the Total Score of the General Self-Efficacy Scale (EAG)*



## Discussion

Initial teacher education should focus on developing inclusive competencies by integrating practical skills, real-world field experiences, and familiarity with local inclusion policies, as these elements enhance future teachers' confidence in implementing inclusive practices (Pov & Kawai, 2025). The main objective of the present study was to analyse the perception of inclusive education and the general self-efficacy of future PE teachers after completing external practices in a primary education centre, taking into account variables such as gender, the characteristics of the centre where the practices were conducted (public vs. subsidized),

the experience with inclusive education during the practices, and the average grade of the primary education degree ( $< 7$  vs  $\geq 7$ ). Additionally, the study examined whether there was a correlation between the perception of inclusion and the general self-efficacy of future teachers. Despite all the research conducted in recent years on inclusive education, few studies have analysed the perception of inclusion among future teachers after completing a practicum in real-world settings (Loveys, 2022), and even fewer studies have focused on future PE teachers. In the present study, significant differences were found in the perception of inclusive education among students who had completed their practicum based on various variables such as gender, the type of centre where the practicum was conducted (public vs subsidized), and experience with students with disabilities (yes vs no). However, these variables did not appear to be determinants in the perception of general self-efficacy among the participants. These findings may have practical implications for designing practical training for university students, allowing educational programmes to be adjusted to better prepare future teachers for inclusive contexts.

## **Perception of the Inclusion of Students with Disabilities**

Recent studies have emphasized the importance of training, attitude, self-efficacy, and the perception of future teachers regarding inclusive education (Opoku et al., 2023; Pov & Kawai, 2025). Nevertheless, many teachers and future primary education teachers, especially PE teachers, do not feel sufficiently trained to implement inclusive education (Genet-Zegeye, 2022; Marcos-Rivero et al., 2025). They feel that they lack sufficient self-efficacy to work effectively with students with disabilities (Herzig-Johnson, 2023) and state that they have not received specific training in inclusion during their initial training (Rojo-Ramos et al., 2022). In this regard, Loveys (2022) observed that external practicums during university training could constitute adequate preparation for inclusive education. The results obtained in the present study align with those of Loveys (2022), as all participants reported feeling more prepared at the end of their external practicum in a primary education centre than before. Similarly, the results obtained by the participants in this study reflected a positive perception of inclusive education, with teachers being mentally prepared to work with students with disabilities. Additionally,

after the external practicum, the participants had a more positive perception of their ability to adapt teaching methods to the characteristics of the students and considered joint planning with support teachers to be beneficial. These results, similarly to those from the study by Loveys (2022), may be attributed to the fact that experiencing and engaging in real practices helps future teachers improve their understanding and pedagogical skills, which will aid them in practising more inclusively in the future (Beshir et al., 2023).

## **Differences Based on Gender**

After the external practicum, one factor that may influence future teachers' perception of inclusive education is gender. A recent study found significant differences based on gender among future PE teachers, observing that men perceived themselves as more competent than women in addressing the needs of students with disabilities (Abellán et al., 2019). Similarly, Opoku et al. (2023) stated that male teachers had higher self-efficacy than female teachers regarding inclusive education. These results align with the present study's findings, as significant differences were found in the means in Block 3 = Support, where males scored higher, favouring the planning and incorporation of support teachers in general classrooms. Additionally, significant differences were found in Item 1, where it was observed that females were somewhat more in favour of working with students with educational needs. These findings may be because females tend to have higher levels of empathy (Christov-Moore et al., 2014; Navarro-Mateu et al., 2020), leading to a more favourable attitude towards including students with disabilities. However, males scored higher on three items (5, 12, and 14), where it was observed that males had greater concerns about workload and saw the integration of support teachers into regular classrooms as being necessary. Despite females scoring higher on one item, males scored higher on three other items. This may be related to the fact that, while females exhibit higher levels of empathy, males are more often associated with higher levels of perceived self-efficacy (Abellán et al., 2019; Godoy-Briceño et al., 2024).

## **Differences Based on Grade Point Average (< 7 vs ≥ 7)**

In addition to gender, the present study analysed whether academic records could influence perceptions of inclusion or self-efficacy after the practicum. The results showed no significant differences in perceptions of inclusion and self-efficacy among students based on their average grades. Although there are no previous studies to make comparisons, it seems that academic records, despite being useful indicators of performance in specific knowledge and skills, may not comprehensively reflect the competencies necessary for effective teaching, such as empathy, creativity, and interpersonal skills (Darling-Hammond, 2006). Moreover, preparing teachers to work with students with disabilities requires specific training in this area and a sensitivity that is not reflected in academic grades (Florian & Linklater, 2010). External practicums can provide valuable and direct experience that fosters a positive perception of inclusion (Weber & Greiner, 2019), even among students with lower academic records. These practicums seem to equalize perceptions of inclusion among all students, highlighting their importance as a key element in the training of future teachers. Therefore, it can be emphasized that the academic grade point average is not a determining variable in analysing future teachers' perceptions of the inclusion of students with disabilities.

## **Differences Based on Practicum Centre (Public vs Subsidized)**

In addition to differences based on grades, the present study analysed whether the type of centre where external practicums are conducted is a key factor influencing future teachers' perceptions of, and attitudes towards, inclusive education. To date, this factor has not been extensively analysed. In this study, it was observed that, in general, there are no significant differences in perceptions of inclusion between future teachers who completed their practicum in public centres and those who did so in subsidized centres. The only notable and statistically significant difference was found in Item 15, where future teachers who completed their practicum in public centres scored higher regarding the perception of the need for the educational project to be reviewed by various stakeholders of the educational community (teachers, families, students, etc.). These minimal differences may be because there is similar educa-

tional regulation for both types of centres, including regulations on the inclusion of students with disabilities, which ensures that public and subsidized centres provide comparable educational contexts regarding diversity and educational needs. In this regard, Organic Law 3/2020 (LOMLOE) establishes that the schooling of students needing educational support should be governed by principles of inclusion, quality, equity, and non-discrimination. Therefore, the perception of future teachers regarding inclusion does not seem to be significantly influenced by the type of centre where they conduct their practicums. Therefore, the perception of future teachers regarding inclusion does not seem to be significantly influenced by the type of centre where they conduct their practicums. However, as noted by Jensen and Haara (2024), beyond the administrative classification of schools, what truly impacts the quality of the practicum is the degree of structured collaboration between the school and the university. Their study shows that partnership schools offer richer learning experiences due to greater coherence between theory and practice, as well as more structured mentoring. This suggests that attention should be placed on the pedagogical and organisational conditions of the practicum setting rather than solely on whether the centre is public or subsidised.

## **Differences Based on Experiences with Students with Disabilities**

In addition to the type of practicum centre, having practical experiences with students with disabilities has been highlighted as a key factor influencing future teachers' perceptions of, and attitudes towards, inclusive education (Johnson et al., 2023). In this regard, completing external practicums during initial training in inclusive environments and having experiences with students with disabilities helps foster a better attitude, perception, and predisposition towards inclusive education (Rojo-Ramos et al., 2022; Weber & Greiner, 2019). In accordance with the results of the studies above, the present research observed that future teachers who had experiences with students with disabilities during their practicum scored higher in Block 2 = Methodology and on items 5, 7, 9, 11, and 18. This better perception of inclusion shown by future teachers who had experiences with students with disabilities during their practicum may be due to the direct interaction with these students. Such experiences

generate greater empathy, understanding, and skills acquired through real-life experiences, which help future teachers implement more inclusive teaching strategies (Johnson et al., 2023). For this reason, given that most future teachers will need to work in inclusive environments, it is crucial to guide them and ensure that they complete their practicum in inclusive settings with diverse students, especially those with disabilities.

## **Relationship Between Self-Efficacy and Perception of Inclusion**

Finally, recent studies have highlighted the importance of self-efficacy in implementing inclusive education (Alhumaid, 2023; Alsarawi & Sukonthaman, 2023). Alsarawi and Sukonthaman (2023) emphasize that high self-efficacy in teachers enhances their willingness and ability to apply inclusive strategies, resulting in more positive attitudes towards inclusion and better adaptation of teaching to meet the needs of all students, including those with disabilities. Similarly, a recent study observed a relationship between teachers' self-efficacy and their preparedness to conduct inclusive education, stating that higher self-efficacy was related to greater training and that teachers with higher self-efficacy are more likely to engage in inclusive teaching (Zainalabidin & Ma'rof, 2021). The present study observed an association between the perception of inclusion (in three of the four blocks of the CEFI-R questionnaire) and general self-efficacy. This relationship indicated that the higher the perception of inclusion among future teachers, the higher their perceived general self-efficacy. As highlighted in the literature, these results may be due to the fact that teachers who believe in their abilities (high self-efficacy) are likely to have more positive perceptions of the inclusion of students with disabilities (Antala et al., 2022), largely because they see themselves as prepared and capable of modifying their teaching to accommodate all students. These results are very helpful because teachers' self-efficacy and beliefs about inclusive education can influence their ability to effectively implement inclusive teaching practices (Woodcock et al., 2023). Given that self-efficacy appears to be related to the perception of inclusive education, it is essential to investigate how to increase the self-efficacy of future teachers to improve their perception of inclusion. This, in turn, can ultimately enhance the quality of education and benefit the students.

This study presents some limitations that should be considered. First, the sample consisted exclusively of students from a single university. Second, the research relied solely on quantitative data without incorporating a qualitative perspective. Therefore, as a future line of research, it would be relevant to complement these findings with qualitative studies that explore in depth the lived experiences of university students during their internships, as well as their knowledge and reflections on inclusive education.

## **Conclusions**

The findings of this study suggest that participation in external practicum placements, particularly those involving direct engagement with students with disabilities, plays a crucial role in shaping the future perceptions of inclusive education among physical education teachers. Although variables such as gender and school type had limited influence, prior experience with disability emerged as a key determinant in fostering inclusive perspectives. Additionally, a significant correlation was observed between the self-efficacy of future teachers and their perception of educational inclusion, indicating that higher self-efficacy is associated with more positive attitudes and better adaptation of inclusive practices. These findings highlight the need for training programmes promoting self-efficacy and practical experience in inclusive environments.

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