



INFLUENCE OF SEX, AGE, AND INITIAL TRAINING OF UNIVERSITY TEACHERS IN THE PHYSICAL ACTIVITY AND PHYSICAL EDUCATION AREA ON PERCEPTION OF INCLUSIVE EDUCATION


INFLUÊNCIA DO SEXO, DA IDADE E DA FORMAÇÃO INICIAL DOS PROFESSORES UNIVERSITÁRIOS NA ÁREA DE ATIVIDADE FÍSICA E EDUCAÇÃO FÍSICA NA PERCEPÇÃO SOBRE EDUCAÇÃO INCLUSIVA 

INFLUENCIA DEL SEXO, DE LA EDAD, Y DE LA FORMACIÓN INICIAL DE LAS Y LOS DOCENTES UNIVERSITARIOS DEL ÁREA DE ACTIVIDAD FÍSICA Y EDUCACIÓN FÍSICA EN LA PERCEPCIÓN SOBRE LA EDUCACIÓN INCLUSIVA 

 <https://doi.org/10.22456/1982-8918.138400>

 **Bingen Marcos-Rivero*** <bingen.marcos@ehu.eus>

 **Jon Ortuondo**** <jortuondo@bam.edu.es>

 **Estibaliz Romaratezabala*** <estibaliz.romaratezabala@ehu.eus>

 **Iratí Becerril-Atxikallende***** <irati.becerril@ehu.eus>

 **Javier Yanci*** <javier.yanci@ehu.eus>

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

** Escuela Universitaria Begoñako Andra Mari. Derio, España.

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

Abstract: The objective of the study was to analyze the differences in perception regarding the inclusion of students with disabilities based on gender, age, and initial education (Physical Activity and Sport Sciences [PASS] vs. Education) among university teachers in the field of Physical Activity and Sport (PAS) and Physical Education (PE). One hundred university teachers from the PAS and PE areas participated in the present study, responding to the questionnaire “Teachers’ perceptions of difficulties in educational inclusion (PDEI).” The results obtained indicate that female teachers report better outcomes than male teachers regarding the inclusion of students with disabilities. Additionally, older teachers show more favorable attitudes toward inclusion than younger ones and those trained in PASS. Considering the results obtained, gender and age, and to a lesser extent, initial

Received on: Feb. 1, 2024
Approved on: July 25, 2024
Published in: Sep. 17, 2024



This is an article published in open access under the Creative Commons Attribution 4.0 (CC BY 4.0)

academic training, have an impact on the attitude and predisposition of university professors in PAS and PE towards inclusive education.

Keywords: University teaching. Higher education. Quality. Disability. Inclusion.

1 INTRODUCTION

Inclusive education has become a relevant topic within the global academic and educational community (Fiuza-Asorey *et al.*, 2023; Grassi-Roig; Pérez-Tejero; Coterón, 2022; Lacruz-Pérez; Sanz-Cervera; Tárraga-Mínguez, 2021; Muñoz-Martínez; Simón-Rueda; Dios-Pérez, 2023; Sharma; Malik; Nagy, 2022). In a world increasingly committed to equity and equal opportunities (Ramos-Santana *et al.*, 2021), educational inclusion emerges as a fundamental principle to ensure that all individuals, regardless of their particularities or specific needs, have access to quality education (Echeita, 2017; Rodríguez; Civeiro; Navarro, 2017). As highlighted, inclusive education should not be limited solely to addressing the specific needs of students at higher risk of academic failure but should encompass all individuals, regardless of their physical, cultural, social, emotional, cognitive, or intellectual characteristics (Echeita, 2017; Sandoval; Morgado; Doménech, 2021).

However, some recent studies indicate that barriers and difficulties persist in the university environment for students with disabilities (Arnaiz-Sánchez *et al.*, 2023; García-González *et al.*, 2021; Moriña; Perera, 2020). Some research suggest that universities have been primarily designed to accommodate students without disabilities, a fact reflected in physical and architectural structures, curricular designs, teacher training, and even in the bureaucratic and institutional barriers faced by people with disabilities (García-González *et al.*, 2021; Moriña; Perera, 2020). Furthermore, university faculty members appear to be one of the main facilitators for the inclusion of students with disabilities (Moriña; Orozco, 2023a) as they are responsible for designing their courses with all students in mind and consequently developing an accessible and flexible curriculum for everyone (Stentiford; Koutsouris, 2022).

Given the importance of university faculty in inclusive education (Moriña; Orozco, 2023a; Morton *et al.*, 2023), various research studies have focused on analyzing university teachers' attitudes towards inclusive education (Boyle; Topping; Jindal-Snape, 2013; Sharma; Malik; Nagy, 2022), as having a positive perception and attitude seem to be indicators of quality inclusive education (Abellán *et al.*, 2019; Pérez-Jorge *et al.*, 2021). Similarly, Granada Pomés y Sanhueza (2013) stated that a teacher's attitude can be defined as a set of perceptions, feelings, and beliefs about the teaching-learning process for all students. It is important to note that perception is defined as the way something is considered, understood, or interpreted (Dorji, 2022). However, some recent studies claim that various factors can condition university teachers' perceptions of inclusive education (Gibon-Ginja; Chen, 2023; Moriña; Orozco, 2023b). In this regard, experience (Triviño-Amigo *et al.*, 2022b; Yada; Savolainen, 2017), age (Iliadou, 2023), sex (Wang, 2023) and even initial training (Pérez-Jorge *et al.*, 2021) of teachers seem to influence their attitude and perception towards inclusive education. Although there are numerous research studies on the factors that can affect primary and secondary education teachers' perception and attitude towards inclusive education (Aldabas, 2020; Rojo-Ramos *et al.*, 2022; Stošić; Lisak; Preece, 2022), there is less scientific knowledge about the factors that may influence the perception or attitude of university teachers about inclusive education (Abdella, 2018; Gibon-Ginja; Chen, 2023; Pérez-Jorge *et al.*, 2021; Wang, 2023). The scarcity of knowledge is even more

evident among teachers specialized in Physical Activity and Sport (PAS) and Physical Education (PE), indicating the need for further studies in this area.

Therefore, the objective of the present study was to analyze the differences in the perception of inclusive education among university teachers in areas related to PAS and PE based on sex, age, and initial academic training (PASS vs. Education). Considering that previous studies conducted on teachers from different educational stages have observed that sex, age, and experience can influence the perception of inclusive education (Gülay; Altun, 2023; Triviño-Amigo *et al.*, 2022b; Sharma; Malik; Nagy, 2022), the initial hypothesis of this study is that there may be differences in the perception of inclusive education among university teachers in areas related to PAS and PE based on sex, age, and initial academic training.

2 METHOD

2.1 PARTICIPANTS

This study involved 100 university teachers (aged 25-64) from 26 Spanish universities, of whom 49 were female (40.4 ± 11.4 years) and 51 were male (42.9 ± 10.9 years). To analyze the influence of age on teachers' perceptions of inclusive education, the total sample was divided into university teachers younger than 46 years (group < 46 years, $n = 65$, 32 female and 33 male) and teachers older than 46 years (group ≥ 46 years, $n = 35$, 18 male and 17 female), based on the age criterion previously established in a study conducted with university teachers (Alhumaid *et al.*, 2022). Additionally, out of the total participants, 53 teachers ($n = 25$ male and 28 female) had studied Physical Activity and Sport Sciences (PASS), while 47 teachers ($n = 26$ male and 21 female) had degrees related to education (Primary Education with a specialization in PE, Early Childhood Education, Pedagogy, and Social Education). The inclusion criterion for the study was being a university teacher in the area of PAS or PE at a Spanish university. The study followed the guidelines of the Declaration of Helsinki (Asociación..., 2013) and was approved by the Ethics Committee for Research Involving Human Beings at the Universidad del País Vasco (UPV/EHU) (CEISH M10/2023/280).

2.2 PROCEDURE

To understand the perception of inclusive education among university teachers associated with PAS and PE, the questionnaire "Teachers' perceptions of difficulties in educational inclusion" (PDEI) was used, previously validated by Suriá-Martínez y Villegas-Castrillo (2023). The questionnaire was distributed via email to various management bodies of faculties and departments of several Spanish universities between September and October 2023. Two weeks after the initial dissemination, a reminder was sent. Data was collected using the Google Forms platform and transferred to a .xls file for further analysis.

2.3 MEASUREMENTS

Questionnaire on *Teachers' perceptions of difficulties in educational inclusion (PDEI)*: To assess the perceptions of university teachers regarding inclusive

education, the PDEI questionnaire, previously validated by Suriá-Martínez y Villegas-Castrillo (2023) and used with PAS and PE university teachers (Marcos-Rivero *et al.*, 2024), was employed. The internal consistency of the PDEI questionnaire, both among university teachers ($\alpha = 0.887$) (Suriá-Martínez; Villegas-Castrillo, 2023) and among PAS and PE university teachers ($\alpha = 0.7$) (Marcos-Rivero *et al.*, 2024), had been described as excellent. The questionnaire contained 16 items, and participants responded using a 5-point Likert scale ranging from “1 = Strongly disagree” to “5 = Strongly agree,” divided into four sections. The first section addressed the difficulties and concerns of students with disabilities. The second section explored whether the faculty implemented the necessary curricular adaptations to ensure students with disabilities receive a quality education. The third section addressed teachers’ perceptions of their academic training to support students with disabilities. Finally, the fourth section examined whether teachers perceived that other students had positive attitudes towards students with disabilities.

2.4 STATISTICAL ANALYSIS

Descriptive results are presented as mean and standard deviation, as well as frequencies and percentages. Kolmogorov-Smirnov statistic and Levene’s test were used to assess data normality and equality of variances. Mann-Whitney U statistic was applied to analyze the mean differences in the results obtained by the different groups (male vs. female, < 46 years vs. ≥ 46 years, or PASS vs. Education). Additionally, the magnitude of differences was calculated using the probability of superiority (PS) (Erceg-Hurn; Mirosevich, 2008). The following qualitative interpretation was used for PS values: minimal 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). Pearson’s Chi-square test (χ^2) was employed for a more comprehensive evaluation. Furthermore, Cramer’s V statistic was used to determine the effect size for the χ^2 test. Statistical analyses were performed using JASP software (JASP for macOS, version 0.17.1, Amsterdam, The Netherlands). Statistical significance was set at $p < 0.05$.

3 RESULTS

The results obtained from the PDEI questionnaire for the groups of male and female teachers and the differences between them are presented in Table 1. Female teachers scored higher than male teachers on Item 15, “Do you perceive appropriate interaction between students and their peers with functional diversity?” ($\chi^2 = 10.975$, $p = 0.027$, Cramer’s V = 0.3). Additionally, female teachers scored significantly higher on average than male teachers on Item 2, “Do you believe that, in any way, these students disrupt the pace of the rest of the classmates?” (2.3 ± 1.2 vs. 1.8 ± 1.0 , $p = 0.037$, PS = 0.61, medium), Item 3, “Do you feel uneasy or tense if explanations are delayed to clarify doubts or extend them further to attend to these students?” (1.7 ± 0.9 vs. 1.4 ± 0.8 , $p = 0.041$, PS = 0.60, medium), Item 5, “In some way, does it hinder you from teaching normally?” (2.4 ± 1.3 vs. 1.8 ± 1.1 , $p = 0.014$, PS = 0.63, medium), and Item 13, “Do you think students with functional diversity should receive training through support teachers?” (2.7 ± 1.3 vs. 2.1 ± 1.1 , $p = 0.040$, PS = 0.62, medium). No significant differences were found in any sections based on sex (male vs. female).

Table 1 - Differences Based on the Sex of Teachers in the Results of the *Teachers' perceptions of difficulties in educational inclusion (PDEI)* Questionnaire

Items	Male	Female	PS y p	Male					Female					Chi2 p
	M ± SD	M ± SD		Strongly Disagree	Disagree	Indifferent	Agree	Strongly Agree	Strongly Disagree	Disagree	Indifferent	Agree	Strongly Agree	
Block 1: DIFFICULTIES AND CONCERNS ABOUT HAVING STUDENTS WITH FUNCTIONAL DIVERSITY IN THE CLASSROOM	2.0 ± 0.9	1.7 ± 0.8												
Item 1. To what extent do you feel discomfort about having students with functional diversity in your classes?	1.9 ± 1.2	2.0 ± 1.1	0.48 p = 0.686	58.8% (30)	3.9% (2)	21.6% (11)	15.7% (8)	0.0% (0)	46.9% (23)	18.4% (9)	26.5% (13)	6.1% (3)	2.0% (1)	0.067
Item 2. Do you believe that, in any way, these students disrupt the pace of the rest of the classmates?	2.3 ± 1.2	1.8 ± 1.0	0.61 p = 0.037*	31.4% (16)	33.3% (17)	13.7% (7)	19.6% (10)	2.0% (1)	51.0% (25)	26.5% (13)	12.2% (6)	10.2% (5)	0.0% (0)	0.266
Item 3. Do you feel uneasy or tense if explanations are delayed to clarify doubts or extend them further to attend to these students?	1.7 ± 0.9	1.4 ± 0.8	0.60 p = 0.041*	51.0% (26)	29.4% (15)	15.7% (8)	3.9% (2)	0.0% (0)	71.4% (35)	18.4% (9)	6.1% (2)	4.1% (2)	0.0% (0)	0.167
Item 4. Do you think that the extra attention to students with functional diversity harms the rest of the students?	1.8 ± 1.1	1.6 ± 0.9	0.55 p = 0.295	54.9% (28)	25.5% (13)	9.8% (5)	7.8% (4)	2.0% (1)	65.3% (32)	18.4% (9)	12.2% (6)	4.1% (2)	0.0% (0)	0.607
Item 5. In some way, does it hinder you from teaching normally?	2.4 ± 1.3	1.8 ± 1.1	0.63 p = 0.014*	35.3% (18)	23.5% (12)	13.7% (7)	25.5% (13)	2.0% (1)	59.2% (29)	16.3% (8)	12.2% (6)	12.2% (6)	0.0% (0)	0.136
Block 2: CURRICULAR ADAPTATIONS REQUESTED BY STUDENTS WITH FUNCTIONAL DIVERSITY	3.5 ± 0.7	3.4 ± 0.7												

Continued on next page..

Continuation of table 1

Item 6. Are you able to establish adequate interaction and communication with empathetic and active listening?	3.9 ± 1.3	3.6 ± 1.3	0.58 p = 0.166	9.8% (5)	5.9% (3)	9.8% (5)	35.3% (18)	39.2% (20)	10.2% (5)	12.2% (6)	10.2% (5)	42.9% (21)	24.5% (12)	0.526
Item 7. Do you perceive any difficulties in making curricular adaptations for these students?	2.3 ± 1.1	2.3 ± 1.1	0.48 p = 0.687	25.5% (13)	43.1% (22)	13.7% (7)	13.7% (7)	3.9% (2)	26.5% (13)	32.7% (16)	22.4% (11)	16.3% (8)	2.0% (1)	0.700
Item 8. Do you design and provide alternative tasks that are suitable for the progress in the development of competencies of students with functional diversity?	3.8 ± 1.1	3.7 ± 1.2	0.53 p = 0.555	5.9% (3)	7.8% (4)	11.8% (6)	47.1% (24)	27.5% (14)	8.2% (4)	6.1% (3)	20.4% (10)	38.8% (19)	26.5% (13)	0.761
Item 9. Do you offer responses to the specific educational needs of students with functional diversity to improve their integration in the classroom?	4.1 ± 0.9	4.0 ± 1.0	0.53 p = 0.619	2.0% (1)	3.9% (2)	9.8% (5)	51.0% (26)	33.3% (17)	0.0% (0)	10.2% (5)	18.4% (9)	34.7% (17)	36.7% (18)	0.258
Block 3: PERCEPTION OF TEACHERS ABOUT THEIR TRAINING	2.5 ± 0.8	2.4 ± 0.7												
Item 10. Do you have difficulty in having a conversation with a student with functional diversity?	1.6 ± 1.0	1.6 ± 1.1	0.52 p = 0.664	62.7% (32)	15.7% (8)	15.7% (8)	5.9% (3)	0.0% (0)	67.3% (33)	14.3% (7)	12.2% (6)	2.0% (1)	4.1% (2)	0.504
Item 11. Do you find it difficult to be impartial with students with functional diversity?	1.9 ± 1.0	1.9 ± 1.1	0.51 p = 0.871	45.1% (23)	27.5% (14)	17.6% (9)	9.8% (5)	0.0% (0)	46.9% (23)	28.6% (14)	12.2% (6)	10.2% (5)	2.0% (1)	0.816
Item 12. Do you think you need more preparation for an adequate teaching process for students with functional diversity?	3.7 ± 1.1	3.9 ± 1.1	0.45 p = 0.330	2.0% (1)	17.6% (9)	13.7% (7)	39.2% (20)	27.5% (14)	2.0% (1)	14.3% (7)	10.2% (5)	36.7% (18)	36.7% (18)	0.886

Continued on next page..

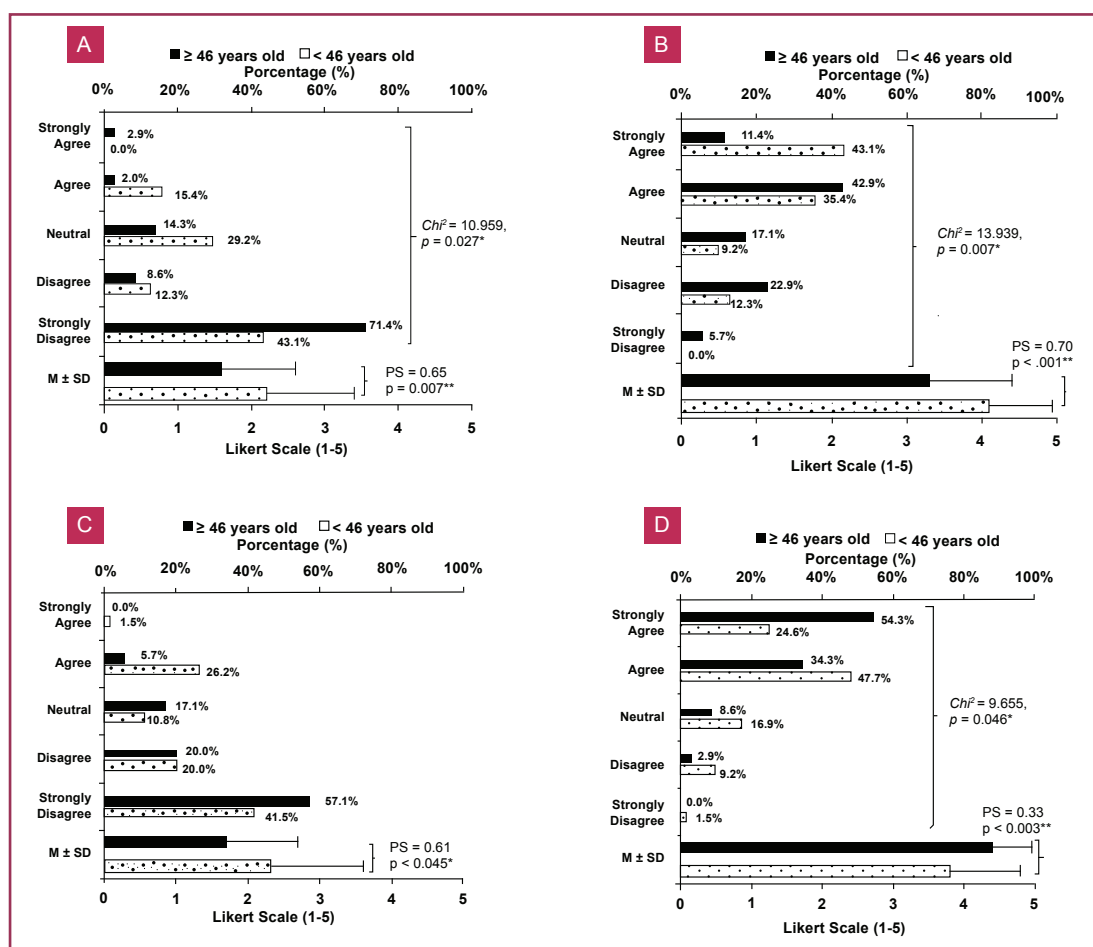
Continuation of table 1

Item 13. Do you think students with functional diversity should receive training through support teachers?	2.7 ± 1.3	2.1 ± 1.1	0.62 p = 0.040*	25.5% (13)	19.6% (10)	27.5% (14)	17.6% (9)	9.8% (5)	38.8% (19)	22.4% (11)	26.5% (13)	12.2% (6)	0.0% (0)	0.148
Block 4: FAVORABLE ATTITUDES FROM STUDENTS WITHOUT FUNCTIONAL DIVERSITY TOWARD THE GROUP WITH THIS HANDICAP	3.2 ± 0.7	3.2 ± 0.7												
Item 14. Have you ever observed conflicts, gestures, and/or inappropriate words among students in general towards students with functional diversity?	2.0 ± 1.2	2.2 ± 1.3	0.46 p = 0.436	43.1% (22)	27.5% (14)	15.7% (8)	9.8% (5)	3.9% (2)	40.8% (20)	16.3% (8)	24.5% (5)	14.3% (7)	4.1% (2)	0.587
Item 15. Do you perceive appropriate interaction between students and their peers with functional diversity?	3.5 ± 1.2	3.6 ± 1.0	0.49 p = 0.923	2.0% (1)	25.5% (13)	13.7% (7)	35.3% (18)	23.5% (12)	41% (2)	6.1% (3)	32.7% (16)	40.8% (20)	16.3% (8)	0.027*
Item 16. Do you perceive if there is a predisposition on the part of the rest of the students to help classmates with functional diversity in class tasks?	3.9 ± 1.0	3.7 ± 1.0	0.55 p = 0.395	3.9% (2)	5.9% (3)	15.7% (8)	47.1% (24)	27.5% (14)	4.1% (2)	6.1% (3)	26.5% (13)	38.8% (19)	24.5% (12)	0.757

M = Mean. **SD** = Standard Deviation. **PS** = Probability of Superiority. **p** = Statistical significance set at $p < 0.05$. *. Likert scale data are shown as percentages (frequencies). χ^2 = statistical significance in the distribution of frequency and percentage responses from different groups.

In addition to the differences found based on sex, the results of the present study showed significant differences based on age groups (< 46 years vs. ≥ 46 years). Participants in the < 46 years group scored higher on Item 1, “To what extent do you feel discomfort about having students with functional diversity in your classes?” (2.2 ± 1.2 vs. 1.6 ± 1.0 , $p = 0.007$, PS = 0.65, medium; $\chi^2 = 10.959$, $p = 0.027$, Cramer’s $V = 0.3$) (Figure 1A) and on Item 12, “Do you think you need more preparation for an adequate teaching process for students with functional diversity?” (4.1 ± 1.0 vs. 3.3 ± 1.1 , $p < 0.001$, PS = 0.70, medium; $\chi^2 = 13.939$, $p = 0.007$, Cramer’s $V = 0.4$) (Figure 1B) and on Item 5, “In some way, does it hinder you from teaching normally?” (2.3 ± 1.3 vs. 1.7 ± 1.0 , $p = 0.045$, PS = 0.61, medium) (Figure 1C). On the contrary, teachers in the ≥ 46 years group scored higher on Item 9, “Do you offer responses to the specific educational needs of students with functional diversity to improve their integration in the classroom?” (3.8 ± 1.0 vs. 4.4 ± 0.8 , $p = 0.003$, PS = 0.33, minimal differences; $\chi^2 = 9.665$, $p = 0.046$, Cramer’s $V = 0.3$) (Figure 1D). No significant differences were found in any sections based on age (< 46 years vs. ≥ 46 years).

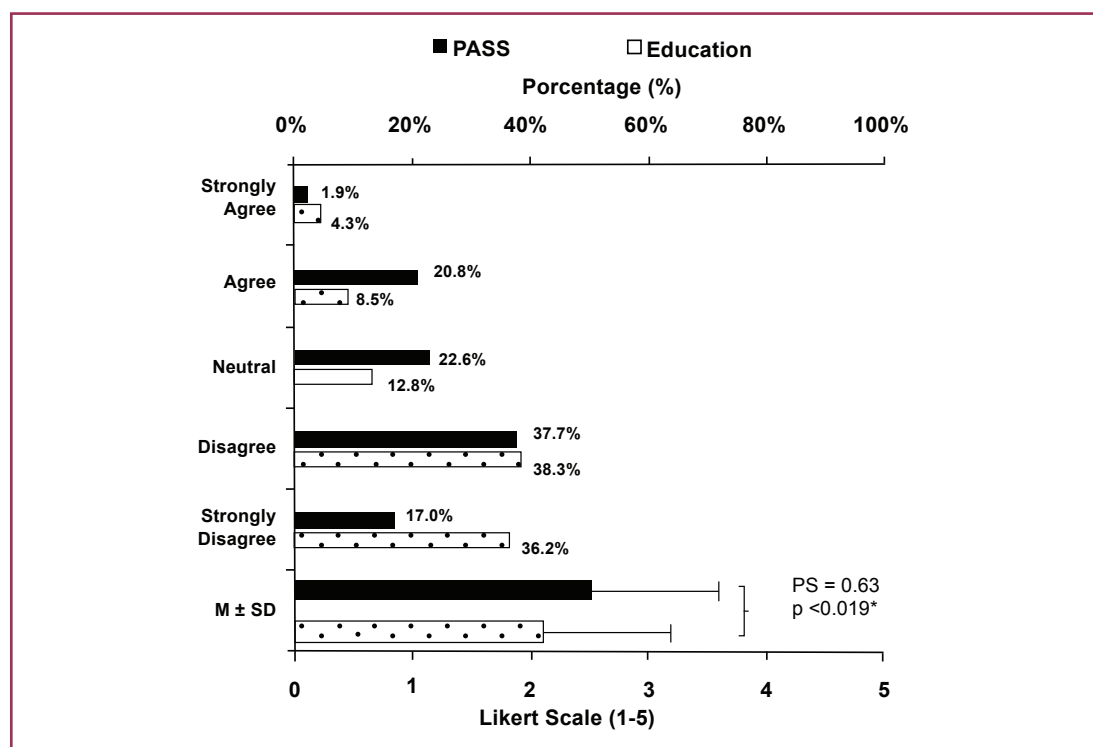
Figure 1 - Differences based on the age of teachers (group < 46 years vs. ≥ 46 years) in item 1 “To what extent do you feel discomfort about having students with functional diversity in your classes?” (1A), item 12 “Do you think you need more preparation for an adequate teaching process for students with functional diversity?” (1B), item 5 “In some way, does it hinder you from teaching normally?” (1C), and item 9 “Do you offer responses to the specific educational needs of students with functional diversity to improve their integration in the classroom?” (1D) of the “*Teachers’ perceptions of difficulties in educational inclusion*” (PDEI) questionnaire.



Note. PS = Probability of Superiority, * ($p < 0.05$). ** ($p < 0.01$)

Lastly, regarding the differences based on the academic training of the teachers (PASS vs. Education), significant differences in means were observed only in Item 7, “Do you perceive any difficulties in making curricular adaptations for these students?” (2.5 ± 1.1 vs. 2.1 ± 1.1 , $p = 0.019$, PS = 0.63, medium) (Figure 2). No significant differences were found in any of the sections based on the academic training of the teachers (PASS vs. Education).

Figure 2 - Differences based on the area (PASS vs. Education) in item 7, “Do you perceive any difficulties in making curricular adaptations for these students?” of the “*Teachers’ perceptions of difficulties in educational inclusion*” (PDEI) questionnaire.



Note. PS = Probability of Superiority, * ($p < 0.05$)

4 DISCUSSION

The main objective of this study was to analyze the differences in the perception of inclusive education based on sex, age, and initial training (PASS vs. Education). Despite numerous scientific investigations conducted in recent years on the training, perception, and knowledge of inclusive education among non-university level teachers (Stošić; Lisak; Preece, 2022; Triviño-Amigo *et al.*, 2022b), this topic has been less addressed at the university level, especially among teachers in the areas of PAS and PE. Additionally, while there are studies that analyze perception based on sex, age, and even the area of knowledge in which non-university teachers work (Gülay; Altun, 2023; Sharma; Malik; Nagy, 2022), no studies have been found that analyze the influence of these factors on the perception of inclusive education among university teachers.

The study's results showed that female university teachers had a more favorable perception of inclusive education than male university teachers. Similarly,

younger university teachers felt more discomfort about having students with disabilities in class compared to older teachers.

Moreover, older teachers reported providing more responses to the specific educational needs of students with disabilities compared to younger teachers. In the same vein, younger teachers saw a greater need to expand their inclusive education training than older teachers. Finally, university teachers with initial education training scored better on perceptions of inclusive education than those who studied PASS, indicating that students with disabilities usually do not hinder their ability to teach.

Recent studies have highlighted the importance of university teachers being well-trained in inclusive education (Gülay; Altun, 2023; Pérez-Jorge *et al.*, 2021; Wang, 2023), primarily to reduce the barriers that students with disabilities might face. Although students with disabilities do not represent most university students (Universia, 2021), university teachers need to be trained and equipped to meet the needs of all students (Moriña; Orozco, 2023a). For this reason, it has been described as necessary to use inclusive approaches in classrooms so that all students have educational opportunities (Sharma; Malik; Nagy, 2022). One factor that may determine teachers' perception of inclusive education is the sex of the teachers (male vs. female). In a recent study with university teachers, female teachers had a better perception of inclusive education compared to male teachers (Wang, 2023).

Similarly, sex-based differences were found among future education teachers (Gülay; Altun, 2023) and early childhood and primary education teachers (Pérez-Jorge *et al.*, 2021). Consistent with these previous studies (Gülay; Altun, 2023; Pérez-Jorge *et al.*, 2021; Wang, 2023), the results of the present study showed that female teachers had a more favorable perception (items 3, 5, and 13) of the inclusion of students with disabilities. However, a recent study conducted with university teachers showed that male teachers were more favorable towards the inclusion of students with disabilities than female teachers (Sharma; Malik; Nagy, 2022). Except for the study by Sharma; Malik; and Nagy (2022), most studies indicate that female teachers have a better perception of inclusive education than male teachers. These findings were also reported by Delgado *et al.* (2023) in a systematic review of primary and secondary PE teachers, stating that although all teachers showed a positive attitude towards disability, female teachers had a better perception than male teachers. This difference in perception may be because female teachers might be more sensitive than male teachers towards the inclusion of all students (Moliner; Alegre, 2022). Nevertheless, despite the differences found in the present study between male and female teachers, the results for both sexes were positive regarding inclusive education. Both male and female teachers generally agreed that there was good interaction among all students, that students with disabilities did not disrupt the class pace, that they did not feel tension or concern if the class was delayed to attend to these students, that it did not hinder their ability to teach normally, and that they believed that educating students with disabilities was their responsibility.

In addition to sex, the age of teachers has been highlighted as a key factor in their perception and attitude towards inclusive education (Navarro-Mateu *et al.*,

2020; Tsakiridou; Polyzopoulou, 2014). A recent study concluded that older primary education teachers showed a poorer perception than younger teachers (Iliadou, 2023). Similarly, Pérez-Jorge *et al.* (2021) stated that younger teachers perceive themselves as better prepared to attend to students with disabilities due to their training. However, the results of the present study show that teachers in the ≥ 46 years group obtained more favorable results than younger teachers. According to the results, older teachers felt less discomfort about having students with disabilities in their classes and thus perceived less difficulty in teaching usually compared to younger teachers. Moreover, older teachers reported being more responsive to the educational needs of all students and, therefore, perceived less need for additional training compared to younger teachers.

Previous studies conducted with primary and secondary education teachers showed that younger teachers had a better perception of inclusive education than older teachers. The different results obtained across educational stages might be due to the fact that the number of students with disabilities is lower in university settings, allowing teachers to carry out their teaching duties more easily. The fact that older university teachers in the present study had a better perception of inclusive education than younger teachers may be due to various factors. On the one hand, older university teachers might have had more experiences with students with disabilities, which could have helped them develop a greater sense of efficacy in classroom management and the use of educational strategies (Tschannen-Moran; Woolfolk-Hoy, 2007), as well as improving their attitude towards inclusion (Alhumaid *et al.*, 2022). On the other hand, differences in perception based on the age of teachers may be related to the type and quality of training they have received. As mentioned, as teachers acquire higher levels of training and participate in specialized courses on inclusive education, their attitudes improve significantly (Alhumaid *et al.*, 2022; Delgado *et al.*, 2023; Rojo-Ramos *et al.*, 2022). The training received on inclusive education appears to be one of the reasons that lead teachers to reflect on and change their perception of inclusive education (Dignath *et al.*, 2022). Unfortunately, this study did not collect data related to the continuous training of university teachers. This limitation prevents understanding whether older teachers received more training in inclusive education than younger teachers. Therefore, more studies are needed that, in addition to analyzing the age factor of teachers, focus on the type of training received in inclusive education.

In addition to sex and age, another key factor in teachers' perception and attitude towards inclusive education is their initial training (Pérez-Jorge *et al.*, 2021). In the present study, significant differences were found in only one item, where teachers who had been trained in the field of education stated to a greater extent that they did not perceive any issues in making curricular adaptations for students with disabilities, compared to those who studied the PASS degree. It is possible that the training in inclusion is similar in both degrees, as both programs include specific training in inclusion. However, the fact that teachers trained in education have a better perception of making curricular adaptations may be due to the possibility that the content on curricular adaptations is perhaps more extensively covered in education-related degrees. Furthermore, pursuing initial training focused on inclusive education

(Lambe, 2007) or even completing a training program (Carballo; Morgado; Cortés-Vega, 2021; Koliqi; Zabeli, 2022) or continuous training (Triviño-Amigo *et al.*, 2022a) have been described as factors that enhance teachers' perception towards inclusive education. Therefore, the content delivered in teachers' initial training programs must include an inclusive approach (Bibigul *et al.*, 2022). Despite the minimal differences (a single item) found in the present study between teachers trained in PASS and Education, the results were positive in both areas, as all participants affirmed that having students with disabilities in their classes does not hinder their teaching. However, the experiences gained during teachers' initial training are crucial for achieving inclusive education, ensuring teachers have the capacity and necessary tools to teach all students equally (Martínez-Angulo *et al.*, 2023).

Despite the rigorous methodological and ethical standards upheld in the current study, it is not without limitations. It is important to note that the results cannot be generalized to the entire population, as the sample of participants does not represent all teachers working in PAS or PE at Spanish universities. Additionally, one of the major limitations of this study is the lack of information regarding the continuous training of university teachers. Including this information would have provided much more insight into their preparation for inclusive education. Despite these limitations, this study significantly contributes to developing knowledge about the variables that can influence university teachers' perceptions of inclusive education).

5 CONCLUSIONS

Significant differences were found in the perception of inclusive education based on sex, age, and initial teacher training. Specifically, female university teachers in this study had a more favorable perception of inclusive education. Additionally, teachers aged ≥ 46 reported experiencing less discomfort when having students with disabilities in their classes compared to university teachers aged < 46 in the areas of PAS or PE. Similarly, older teachers reported more often that they meet the educational needs of all students and, therefore, felt less need for additional training compared to younger teachers. Finally, teachers with training in the field of Education reported, with higher scores than those in the PASS field, that they did not have any problems making curricular adaptations for students with disabilities. While the results of this study showed significant differences in the perception of inclusion based on sex, age, and initial teacher training, the fact that differences were not found in all analyzed items partially confirms the study's hypothesis. Nevertheless, this study highlights the importance of considering sex, age, and initial training as factors that influence the disposition, attitude, and perception of university teachers in PAS and PE regarding inclusive education.

REFERENCES

- ABDELLA, Abdreheman Seid. Instructors' willingness to provide instructional accommodations for students with disabilities in selected universities of Ethiopia. **International Journal of Inclusive Education**, v. 22, n. 6, p. 671-682, 2018. DOI: <https://doi.org/10.1080/13603116.2017.1396501>
- ABELLÁN, Jorge *et al.* Percepción de autoeficacia hacia la inclusión en futuros maestros de educación física. **Revista de Psicología del Deporte**, v. 28, n. 1, p. 143-156, 2019. Available at: <https://archives.rpd-online.com/article/view/v28-n1-abellan-saez-reina-et-al.html>. Accessed on: Dec. 30, 2023
- ALDABAS, Rashed. Special education teachers' perceptions of their preparedness to teach students with severe disabilities in inclusive classrooms: A Saudi Arabian perspective. **Sage Open**, v. 10, n. 3, p. 1-14, 2020. DOI: <https://doi.org/10.1177/2158244020950657>
- ALHUMAID, Majed M. *et al.* Physical education teachers' attitudes toward inclusion of students with disabilities in Saudi Arabia. **Frontiers in Psychology**, v. 13, p. 1-11, 2022. DOI: <https://doi.org/10.3389/fpsyg.2022.1006461>
- ARNAIZ-SÁNCHEZ, Pilar *et al.* Barriers to educational inclusion in initial teacher training. **Societies**, v. 13, n. 2, p. 13-31, 2023. DOI: <https://doi.org/10.3390/soc13020031>
- ASOCIACIÓN MÉDICA MUNDIAL. Declaración de Helsinki de la AMM – principios éticos para las investigaciones médicas en seres humanos. 2013. Available at: <https://www.wma.net/es/policias-post/declaracion-de-helsinki-de-la-amm-principios-eticos-para-las-investigaciones-medicas-en-seres-humanos/>. Accessed on: Aug. 13, 2024.
- BIBIGUL, Dyussenbayeva *et al.* Training a special teacher: opinions and experience of teachers in the conditions of inclusive education. **Cypriot Journal of Educational Sciences**, v. 17, n. 3, p. 920-929, 2022. Available at: <https://files.eric.ed.gov/fulltext/EJ1337058.pdf>. Accessed on: Dec. 30, 2023.
- BOYLE, Christopher; TOPPING, Keith; JINDAL-SNAPE, Divya. Teachers' attitudes towards inclusion in high schools. **Teachers and Teaching**, v. 19, n. 5, p. 527-542, 2013. DOI: <https://doi.org/10.1080/13540602.2013.827361>
- CARBALLO, Rafael; MORGADO, Beatriz; CORTÉS-VEGA, M. Dolores. Transforming faculty conceptions of disability and inclusive education through a training programme. **International Journal of Inclusive Education**, v. 25, n. 7, p. 843-859, 2021. DOI: <https://doi.org/10.1080/13603116.2019.1579874>
- DELGADO, Serafín *et al.* Actitudes hacia la discapacidad en Educación Física. Una revisión sistemática exploratoria. **e-Motion: Revista de Educación, Motricidad e Investigación**, n. 20, p. 76-93, 2023. DOI: <https://doi.org/10.33776/remo.vi20.7612>
- DIGNATH, Charlotte *et al.* Teachers' beliefs about inclusive education and insights on what contributes to those beliefs: a meta-analytical study. **Educational Psychology Review**, v. 34, n. 4, p. 2609-2660, 2022. DOI: <https://doi.org/10.1007/s10648-022-09695-0>
- DORJI, Nima. Teachers' perception on the implementation of new national school curriculum in Pachu primary school. **South Asian Journal of Social Studies and Economics**, v. 16, n. 1, p. 11-15, 2022. DOI: <https://doi.org/10.9734/sajsse/2022/v16i1600>
- ECHEITA, Gerardo. Educación inclusiva. Sonrisas y lágrimas. **Aula abierta**, v. 46, n. 2, p. 17-24, 2017. DOI: <https://doi.org/10.17811/rifie.46.2017.17-24>

ERCEG-HURN, David; MIROSEVICH, Vikki. Modern robust statistical methods: an easy way to maximize the accuracy and power of your research. **American Psychologist**, v. 63, n. 7, p. 591-601, 2008. DOI: <https://doi.org/10.1037/0003-066X.63.7.591>

FIUZA-ASOREY, María *et al.* Luces y sombras en la percepción del alumnado universitario acerca de la inclusión y la diversidad. **Educación XX1**, v. 26, n. 2, p. 141-164, 2023. DOI: <https://doi.org/10.5944/educxx1.34475>

GARCÍA-GONZÁLEZ, Juan Manuel *et al.* Barriers in higher education: perceptions and discourse analysis of students with disabilities in Spain. **Disability & Society**, v. 36, n. 4, p. 579-595, 2021. DOI: <https://doi.org/10.1080/09687599.2020.1749565>

GIBON-GINJA, Tamirat; CHEN, Xiaoduan. Conceptualising inclusive education: the role of teacher training and teacher's attitudes towards inclusion of children with disabilities in Ethiopia. **International Journal of Inclusive Education**, v. 27, n. 9, p. 1042-1055, 2023. DOI: <https://doi.org/10.1080/13603116.2021.1879958>

GRANADA AZCÁRRAGA, Maribel; POMÉS CORREA, María Pilar; SANHUEZA HENRÍQUEZ, Susan. Actitud de los profesores hacia la inclusión educativa. **Papeles de trabajo. Centro de Estudios Interdisciplinarios en Etnolingüística y Antropología Socio-Cultural**, n. 25, p. 51-59, 2013. DOI: <https://doi.org/10.35305/revista.v0i25.88>

GRASSI-ROIG, Mauro; PÉREZ-TEJERO, Javier; COTERÓN, Javier. Efectos de una formación en inclusión sobre la autoeficacia del profesorado de Educación Física. **Cultura, Ciencia y Deporte**, v. 17, n. 51, p. 5-13, 2022. Available at: https://ccd.ucam.edu/visores/17_51/163068609005/index.html. Accessed on: Dec. 30, 2023

GRISSOM, Robert J. Probability of the superior outcome of one treatment over another. **Journal of Applied Psychology**, v. 79, n. 2, p. 314-316, 1994. DOI: <https://doi.org/10.1037/0021-9010.79.2.314>

GÜLAY, Ahmet; ALTUN, Taner. Investigation of teacher candidates' awareness towards inclusive education. **Journal of Theoretical Educational Science**, v. 16, n. 2, p. 454-477, 2023. DOI: <https://doi.org/10.30831/akukeg.1242868>

ILIADOU, Argyro. Teachers' perceptions regarding the inclusive education of children with ASD. **International Journal of All Research Education and Scientific Methods**, v. 11, n. 5, p. 3103-3109, 2023. Available at: <https://files.eric.ed.gov/fulltext/ED628559.pdf>. Accessed on: Dec. 30, 2023

KOLIQI, Donika; ZABELI, Naser. Variables affecting the attitudes of teachers' towards inclusive education in Kosovo. **Cogent Education**, v. 9, n. 1, p. 1-18, 2022. DOI: <https://doi.org/10.1080/2331186x.2022.2143629>

LACRUZ-PÉREZ, Irene; SANZ-CERVERA, Pilar; TÁRRAGA-MÍNGUEZ, Raul. Teachers' attitudes toward educational inclusion in Spain: a systematic review. **Education Sciences**, v. 11, n. 2, p. 1-16 2021. DOI: <https://doi.org/10.3390/educsci11020058>

LAMBE, Jackie. Northern Ireland student teachers' changing attitudes towards inclusive education during initial teacher training. **International Journal of Special Education**, v. 22, n. 1, p. 59-71, 2007. Available at: https://pure.ulster.ac.uk/files/11724136/Northern_Ireland_student_teachers_changing_attitudes%E2%80%99towards_inclusive_education_during_initial_teacher_training_.doc. Accessed on: Dec. 30, 2023

MARCOS-RIVERO, Bingen *et al.* Building bridges to inclusive education: perception of university teachers of degrees related to physical activity and physical education. **Espiral. Cuaderno del Profesorado**, *In-Press*.

MARTÍNEZ-ANGULO, Carolina *et al.* Percepción de autosuficiencia hacia la inclusión en el futuro profesorado de Educación Física: un estudio en contexto chileno. **Retos**, v. 48, p. 919-926, 2023. DOI: <https://doi.org/10.47197/retos.v48.97413>

MOLINER, Lidon; ALEGRE, Francisco. Attitudes, beliefs and knowledge of mathematics teachers regarding peer tutoring. **European Journal of Teacher Education**, v. 45, n. 1, p. 93-112, 2022. DOI: <https://doi.org/10.1080/02619768.2020.1803271>

MORIÑA, Anabel; OROZCO, Inmaculada. Facilitadores para la inclusión: claves para el éxito universitario. **Revista Iberoamericana de Evaluación Educativa**, v. 16, n. 1, p. 31-45, 2023a. DOI: <https://doi.org/10.15366/rie2022.16.1.002>

MORIÑA, Anabel; OROZCO, Inmaculada. Teaching experiences of inclusive Spanish STEM faculty with students with disabilities. **International Journal of Science and Mathematics Education**, v. 21, n. 3, p. 993-1012, 2023b. DOI: <https://doi.org/10.1007/s10763-022-10276-4>

MORIÑA, Anabel; PERERA, Victor Hugo. Inclusive higher education in Spain: students with disabilities speak out. **Journal of Hispanic Higher Education**, v. 19, n. 3, p. 215-231, 2020. DOI: <https://doi.org/10.1177/1538192718777360>

MORTON, Missy *et al.* Disability studies in and for inclusive teacher education in Aotearoa New Zealand. **International Journal of Inclusive Education**, v. 27, n. 11, p. 1207-1222, 2023. DOI: <https://doi.org/10.1080/13603116.2021.1882059>

MUÑOZ-MARTÍNEZ, Yolanda; SIMÓN-RUEDA, Cecilia; DIOS-PÉREZ, María José de. Teachers of learners with ASD in mainstream schools and classrooms in Spain: attitudes towards inclusive education. **British Journal of Special Education**, v. 50, n. 1, p. 104-126, 2023. DOI: <https://doi.org/10.1111/1467-8578.12448>

NAVARRO-MATEU, Diego *et al.* Attitudes, sentiments, and concerns about inclusive education of teachers and teaching students in Spain. **Frontiers Psychology**, v. 11, p. 1-11, 2020. DOI: <https://doi.org/10.3389/fpsyg.2020.00521>

PÉREZ-JORGE, David *et al.* Perception and attitude of teachers towards the inclusion of students with hearing disabilities. **Education Sciences**, v. 11, n. 4, p. 1-17, 2021. DOI: <https://doi.org/10.3390/educsci11040187>

RAMOS-SANTANA, Genoveva *et al.* Validation of a scale of attention to diversity for university teachers. **Educación XX1**, v. 24, n. 2, p. 121-142, 2021. Available at: <https://www.redalyc.org/journal/706/70666930005/html/>. Accessed on: Dec. 30, 2023

RODRÍGUEZ, Jose Eugenio; CIVEIRO, Adriana; NAVARRO, Rubén. Formación del profesorado de Educación Física en atención a la diversidad en educación primaria. **Sportis. Scientific Journal of School Sport, Physical Education and Psychomotricity**, v. 3, n. 2, p. 323-339, 2017. DOI: <https://doi.org/10.17979/sportis.2017.3.2.1886>

ROJO-RAMOS, Jorge *et al.* Spanish physical education teachers' perceptions about their preparation for inclusive education. **Children**, v. 9, n. 1, p. 1-17, 2022. DOI: <https://doi.org/10.3390/children9010108>

SANDOVAL, Marta; MORGADO, Beatriz; DOMÉNECH, Ana. University students with disabilities in Spain: faculty beliefs, practices and support in providing reasonable adjustments. **Disability & Society**, v. 36, n. 5, p. 730-749, 2021. DOI: <https://doi.org/10.1080/09687599.2020.1751078>

SHARMA, Ambuj; MALIK, Reena; NAGY, Henrietta. Exploring the teachers' perception towards educational inclusion: a study of teachers' in Pune, India. **Journal on Efficiency and Responsibility in Education and Science**, v. 15, n. 1, p. 23-32, 2022. DOI: <https://doi.org/10.7160/eriesj.2022.150103>

- STENTIFORD, Lauren; KOUTSOURIS, George. Critically considering the 'inclusive curriculum' in higher education. **British Journal of Sociology of Education**, v. 43, n. 8, p. 1250-1272, 2022. DOI: <https://doi.org/10.1080/01425692.2022.2122937>
- STOŠIĆ, Jasmina; LISAK, Natalija; PREECE, David. Primary teachers' knowledge and attitudes about autism, and experience of good practice approaches: implications for policy and practice in Croatia. **Support for Learning**, v. 37, n. 4, p. 573-588, 2022. DOI: <https://doi.org/10.1111/1467-9604.12429>
- SURIÁ-MARTÍNEZ, Raquel; VILLEGAS-CASTRILLO, Esther. Propiedades psicométricas del cuestionario de la percepción de dificultades del profesorado para la inclusión educativa. **International Journal of Developmental and Educational Psychology**, v. 1, n. 1, p. 145-154, 2023. DOI: <https://doi.org/10.17060/ijodaep.2023.n1.v1.2497>
- TRIVIÑO-AMIGO, Natalia *et al.* Inclusive education in primary and secondary school: perception of teacher training. **International Journal of Environmental Research and Public Health**, v. 19, n. 23, p. 1-12, 2022a. DOI: <https://doi.org/10.3390%2Fijerph192315451>
- TRIVIÑO-AMIGO, Natalia *et al.* Spanish teachers' perceptions of their preparation for inclusive education: the relationship between age and years of teaching experience. **International Journal of Environmental Research and Public Health**, v. 19, n. 9, p. 1-12, 2022b. DOI: <https://doi.org/10.3390/ijerph19095750>
- TSAKIRIDOU, Helen; POLYZOPOULOU, Konstantia. Greek teachers' attitudes toward the inclusion of students with special educational needs. **American Journal of Educational Research**, v. 2, n. 4, p. 208-218, 2014. DOI: <https://doi.org/10.12691/education-2-4-6>
- TSCHANNEN-MORAN, Megan; WOOLFOLK-HOY, Anita. The differential antecedents of self-efficacy beliefs of novice and experienced teachers. **Teaching and Teacher Education**, v. 23, n. 6, p. 944-956, 2007. DOI: <https://doi.org/10.1016/j.tate.2006.05.003>
- UNIVERSIA, Fundación. V Estudio sobre el grado de inclusión del sistema universitario español respecto de la realidad de las personas con discapacidad. Madrid: **Fundación Universia-CERMI**, 2021. Available at: [https://www.fundacionuniversia.net/content/dam/fundacionuniversia/pdf/estudios/V%20Estudio%20Universidad%20y%20Discapacidad%202019-2020%20%20\(Accesible\).pdf](https://www.fundacionuniversia.net/content/dam/fundacionuniversia/pdf/estudios/V%20Estudio%20Universidad%20y%20Discapacidad%202019-2020%20%20(Accesible).pdf). Accessed on: Dec. 30, 2023
- WANG, Hsin Yi. Attitudes Towards inclusive education among instructors at universities in Taiwan. **International Journal of Disability, Development and Education**, v. 70, n. 1, p. 90-105, 2023. DOI: <https://doi.org/10.1080/1034912x.2020.1849575>
- YADA, Akie; SAVOLAINEN, Hannu. Japanese in-service teachers' attitudes toward inclusive education and self-efficacy for inclusive practices. **Teaching and Teacher Education**, v. 64, p. 222-229, 2017. DOI: <https://doi.org/10.1016/j.tate.2017.02.005>

Resumo: O objetivo do estudo foi analisar as diferenças na percepção sobre a inclusão de estudantes com deficiência, com base no sexo, idade e formação inicial (Ciências da Atividade Física e Esporte [CAFE] vs. Educação) de professores universitários na área de Atividade Física e Esporte (AFE) e Educação Física (EF). No presente estudo, participaram 100 professores universitários das áreas de AFE e EF, que responderam ao questionário “*Percepção dos professores sobre as dificuldades na inclusão educacional (PDIE)*”. Os resultados obtidos mostram que as professoras relatam melhores resultados do que os professores em relação à inclusão de estudantes com deficiência. Além disso, os professores mais velhos e os formados em CAFE mostram uma predisposição mais favorável à inclusão. Esses resultados destacam como o sexo, a idade e a formação influenciam as atitudes em relação à educação inclusiva. Este estudo oferece evidências para políticas eficazes de inclusão em ambientes universitários.

Palavras-chave: Ensino universitário. Ensino superior. Qualidade. Deficiência. Inclusão.

Resumen: El objetivo del estudio fue analizar las diferencias de la percepción sobre la inclusión del alumnado con discapacidad en función del sexo, la edad y la formación inicial (Ciencias de la Actividad Física y Deporte [CAFYD] vs. Educación) de los docentes universitarios del área de Actividad Física y Deporte (AFyD) y de la Educación Física (EF). En el presente estudio participaron 100 docentes universitarios del área de la AFyD y de la EF, quienes respondieron al cuestionario “*La percepción de dificultades del profesorado para la inclusión educativa (DPIE)*”. Los resultados obtenidos muestran que las docentes declaran mejores resultados que los docentes en cuanto a la inclusión de estudiantes con discapacidad. Además, los y las docentes mayores son más favorables a la inclusión que los más jóvenes y que los docentes formados en CAFyD. Atendiendo a los resultados obtenidos, el sexo y la edad, y en menor medida la formación inicial, influyen en la actitud y predisposición de las y los docentes universitarios de AFyD y EF hacia la educación inclusiva.

Palabras clave: Docencia universitaria. Educación superior. Calidad. Discapacidad. Inclusión.

USE LICENSE

This is an article published in Open Access under the Creative Commons Attribution 4.0 International license (CC BY 4.0), which allows use, distribution, and reproduction in any medium, as long as the original work is correctly cited. More information at: <https://creativecommons.org/licenses/by/4.0>

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest in this study.

AUTHOR CONTRIBUTIONS

Bingen Marcos-Rivero: Conceptualization, methodology, validation, analysis, manuscript writing, review, and editing.

Jon Ortuondo: Conceptualization, methodology, validation, manuscript writing, review, editing, and supervision.

Estibaliz Romarate zabala: Manuscript writing, review, and editing.

Irati Becerril-Atxikallende: Manuscript writing, review, and editing.

Javier Yanci: Conceptualization, methodology, validation, analysis, manuscript writing, review, editing, and supervision

FUNDING

This study was not supported by funding sources.

RESEARCH ETHICS

The research project was submitted and approved by the Universidad del País Vasco (UPV/EHU) Ethics Committee.

HOW TO CITE

MARCOS-RIVERO, Bingen; ORTUONDO, Jon; ROMARATEZABALA, Estibaliz; BECERRIL-ATXIKALLENDE, Irati; YANCI, Javier. Influence of sex, age, and initial training of university teachers in the physical activity and physical education area on perception of inclusive education. **Movimento**, v. 30, p. e3027, Jan./Dec. 2024. DOI: <https://doi.org/10.22456/1982-8918.138400>

EDITORIAL RESPONSIBILITY

Alex Branco Fraga*, Elisandro Schultz Wittizorecki*, Mauro Myskiw*, Raquel da Silveira*, Roseli Belmonte Machado*

*Universidade Federal do Rio Grande do Sul, Escola de Educação Física, Fisioterapia e Dança, Porto Alegre, RS, Brazil.