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The Dispositions for Culturally Responsive Pedagogy Scale (DCRPS): psychometric validation and results among spanish teachers

The Dispositions for Culturally Responsive Pedagogy Scale (DCRPS): validación psicométrica y resultados en el profesorado español

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ABSTRACT

Educational classrooms are a true reflection of increasingly diverse and unequal societies. Teachers therefore require specific pedagogical dispositions towards their students and their teaching that ensure greater social justice. In this paper, an instrumental study is described that is focused on the adaptation of the Dispositions for Culturally Responsive Pedagogy Scale (Whitaker & Valtierra, 2018) to the Spanish population and its validation. The main goal is to analyze the psychometric characteristics of the scale, which is used to evaluate

the disposition towards Culturally Responsive Education (CRE). No specific instruments have been found and none are known in Spanish for the analysis of attitudes and beliefs towards CRE. A quantitative methodology was applied through the administration of surveys to teachers at various educational levels and regions in Spain (N = 538). Confirmatory factor analysis revealed an optimal fit, after removing two original items, for a three-factor structure: educational praxis, community, and social justice. The reliability analysis showed adequate internal consistency, according to both Cronbach's Alpha (α = .942) and McDonald's Omega (ω = .943). Significant differences between dispositions towards CRE were found based on sex, educational level, and specialty, suggesting the importance of considering those variables when evaluating dispositions towards CRE in different educational contexts. In conclusion, a first valid and reliable tool to assess teachers' dispositions towards CRE is provided in this study, contributing to more inclusive and equitable education.

Keywords: culturally responsive education, teacher evaluation, teacher training, multicultural education, validation

RESUMEN

Las aulas educativas son un fiel reflejo de las sociedades cada vez más diversas y desiguales, es por ello que el profesorado precisa de una determinada disposición docente hacia sus estudiantes y su enseñanza que garantice una mayor justicia social. Este artículo describe una investigación instrumental centrada en la adaptación y validación en población española de la Disposition for Culturally Responsive Pedagogy Scale (Whitaker & Valtierra, 2018). El objetivo principal es analizar las características psicométricas de esta escala, que evalúa la disposición docente hacia la Educación Culturalmente Receptiva (ECR). No se conocen o no hemos hallado instrumentos específicos en castellano que analicen la disposición docente hacia esta pedagogía. Se ha utilizado una metodología de corte cuantitativo por medio de un método de encuestas administradas a profesores de diferentes niveles educativos y regiones de España (N = 538). El análisis factorial confirmatorio reveló un ajuste óptimo para una estructura de tres factores: praxis educativa, comunidad y justicia social, tras eliminar dos ítems originales. Los resultados del análisis de fiabilidad indican una consistencia interna adecuada, con índices de Alfa de Cronbach (α = .942) y Omega de McDonald (ω = .943) satisfactorios. Además, se encontraron diferencias estadísticamente significativas respecto a las disposiciones hacia la ECR según el sexo, nivel educativo y especialidad del profesorado, lo que sugiere la relevancia de considerar estas variables al evaluar la disposición docente hacia la ECR en diferentes contextos educativos. En conclusión, el estudio proporciona una primera herramienta válida y fiable para conocer la disposición del profesorado hacia la ECR, contribuyendo así a la mejora de una educación más inclusiva y equitativa.

Palabras clave: educación culturalmente receptiva, evaluación del docente, formación docente, educación multicultural, validación

INTRODUCTION

Cultural and linguistic incongruencies between teachers and the identities of their students are evident in recent scientific literature, which affects student learning and emotional states (Abacioglu *et al*., 2022; Adam & Byrne, 2023; Comstock *et al*., 2023). In Spain, it implies a lower probability of achieving the basic academic level and a lower sense of belonging among students of diverse cultural backgrounds compared to their Spanish counterparts (OECD, 2018; Bayona *et al*., 2020). In the 2022-23 academic year, foreign students enrolled in general education in Spain represented 11.4% of the total, the highest figure recorded to date (Ministerio de Educación y Formación Profesional, 2023). The trend suggests that it will continue increasing over coming years, for which reason the role of teachers is crucial for preventing certain educational dynamics of violence and social, cognitive, and epistemological injustice that impose unique and ethnocentric knowledge and learning. Teaching capabilities and dispositions are identified in some studies as necessary for the professional development of inter/multicultural education (Tualaulelei & Halse, 2021) that promotes student development and learning through culturally adapted pedagogies (Abacioglu *et al*., 2022) striving to prevent such violence and injustice.

There are Spanish scales that are used to analyze teachers' beliefs and attitudes towards cultural diversity (Llorent & Álamo, 2016; Llorent & Álamo, 2019; Cabrera-Vázquez *et al*., 2022) and there are others on the attitudes of future teachers towards multiculturalism in schools and immigration (Arques & Navas, 2010). However, there are no instruments in Spanish, to the best of our knowledge, that can be used to identify teachers' dispositions towards pedagogies such as culturally relevant, responsive, and sustainable education (Ladson-Billings, 1995; Gay, 2010; Paris & Alim, 2017). Measurement instruments that might help to reduce the cultural and linguistic incongruencies between teachers and students. Llorente Villasante *et al*. (2024) observed how those sorts of pedagogies engage students' cultural resources by considering knowledge banks and identity in the classroom, for which continuous teacher reflection is necessary to develop a favorable attitude towards those pedagogies. In this paper, the translation and linguistic and cultural validation of the Dispositions for Culturally Responsive Pedagogy Scale (DCRPS) (Whitaker & Valtierra, 2018a) are presented, providing a first valid and reliable instrument in Spanish with which to analyse the beliefs and attitudes of teachers towards CRE. Some studies on scales like the DCRPS have been presented in the literature in different disciplines (Kruger, 2019; Chuang *et al*., 2020). However, the disposition of teachers towards CRE can be analyzed with the DCRPS through political and critical aspects of multicultural education and CRE, incorporating reflections on teacher identity and institutionalized racism (Chang & Cochran-Smith, 2022). Additionally,

the overall structure of this scale leaves room for observations on appropriate management of cultural diversity by combining cognitive theory with educational practice.

CULTURALLY RESPONSIVE EDUCATION (CRE) AND ITS TERMINOLOGICAL VARIATIONS

Culture, as much as the terms derived from it, should be understood in their fluid and unfinished nature. It does not imply erroneous original ideas, but it rather necessitates reflections and adaptations tied to the evolution of societies to construct new understandings and theories. There are terminological variations (Ladson-Billings, 1995; Gay, 2010; Paris & Alim, 2017) within CRE, yet a structural educational change with a critical perspective is generally pursued through meaningful relationships between teachers, students, and the community.

Since the 1990s, there has been a growing interest in CRE in the United States, due to increased cultural diversity within classrooms and concerns over low performance levels among culturally diverse students. Ladson-Billings (1995) noted that until that time, the responsibility for that low performance was focused exclusively on the students, without any reference to the commitment of educational systems. Therefore, a paradigmatic shift was necessary to ensure that educational environments and teachers adapted to culturally diverse students. It was a question of teacher responsibility for improving student performance and supporting their learning and a social and ethical commitment of teachers towards those students.

CRE praxis emerged as a holistic method to improve the educational outcomes of students (Ladson-Billings, 1995; Gay, 2010) by considering their diverse cultural backgrounds, promoting meaningful learning, greater competence in cultural aspects, and critical awareness of social inequalities. Aspects such as participation, cultural identity, personal relationships between teachers and students, and all characteristics of the students must be addressed for their learning (Stembridge, 2020).

TEACHER DISPOSITIONS AND PRACTICES RELATED TO CULTURALLY RESPONSIVE EDUCATION

There is a substantial body of research on teacher dispositions (Diez, 2007; Sockett, 2009), which can be described as «professional virtues, the qualities, and the mental and behavioural habits that teachers possess and develop based on their knowledge, understanding, values, and commitments» (Sockett, 2009, p. 301). In most studies, dispositions are shaped by the relationship between teachers' beliefs

and practices. In that sense, attitude that is characterized by belief significantly influences teacher disposition. Stephens (2019) reviewed a multitude of studies that identified disposition as closely linked to teaching attitude.

Although certain teacher actions may appear involuntary, they are somehow governed by mental schemas rooted in their attitudes and beliefs, which determine their teaching dispositions. This culturally responsive teaching disposition is adapted to students when teachers adopt classroom behaviours that create supportive and reflective learning environments that promote autonomous learning for all students (Vavrus, 2008). More recent studies, such as those of both Warren (2018) and Truscott & Stenhouse (2022), showed how teacher disposition towards CRE is influenced by attitudes and prior knowledge, and it has been demonstrated that many teachers feel that they lack confidence when implementing CRE in the classroom (Adam & Byrne, 2023), requiring and demanding more training (Abacioglu *et al*., 2022; Adam & Byrne, 2023). However, before such training, it is necessary to examine teachers' beliefs and attitudes because «whether positive, negative, or ambivalent, beliefs and attitudes always precede and shape behaviours» (Gay, 2013, p. 4). It also fosters greater confidence in managing culturally diverse classrooms by analysing and questioning inherent perspectives that affect each teacher's self-efficacy (Comstock *et al*., 2023).

At times, teachers may not have too much experience of interacting with different cultures, perhaps because they have had no opportunities to share and to engage in educational experiences where different cultures converge within their immediate context (Gay, 2013). It can mean that there is no questioning of their own teaching identity or attitudes, which might otherwise mean that they not only recognize the values of each student regardless of social or cultural background, but also learn from those students, which is necessary for implementing CRE in the classroom (Villegas & Lucas, 2002; Vavrus, 2008). It is important to analyse teachers' belief systems regarding the cultural diversity of their students, to enhance their self-efficacy and teaching disposition towards working in culturally diverse settings. Practicing and trainee teachers should have spaces and opportunities that challenge their attitudes and beliefs toward culturally diverse students and reflect on how those beliefs influence their educational practices. In doing so, they can learn from their students, adopt a constructivist view of learning, and become agents of change, using the classroom and school as a place for social transformation (Villegas & Lucas, 2002). Steps that will enable teachers to develop sensitivity towards the cultural diversity of students, valuing their cultural influences and incorporating them into their pedagogical approaches.

Numerous studies have shown how a culturally responsive pedagogy, which values cultural resources and integrates them into the teaching-learning processes, manages to improve academic outcomes and classroom participation for culturally

diverse students (Fallon *et al*., 2021; Anyichie *et al*., 2023). It also has a significant impact on students' autonomous learning and emotional behavior (Anyichie *et al*., 2023; Power *et al*., 2024). However, for those sorts of educational improvement processes to occur, the culturally diverse spaces and contexts surrounding the students must especially be considered, and teachers must ensure collaborative work with families and the community to achieve optimal results of that sort (Fallon *et al*., 2021; Anyichie *et al*., 2023).

SELECTED INSTRUMENT AND STUDY APPROACH

The Dispositions for Culturally Responsive Pedagogy Scale (DCRPS) is proposed as a valid and reliable instrument. The validation and development of the original scale followed a six-phase process: item development based on literature related to CRE, item review by a panel of experts, Exploratory Factor Analysis (EFA), factor interpretation, Confirmatory Factor Analysis (CFA), and analysis of convergent and discriminant validity. The result was a 19-item scale ($\alpha = 0.92$) with three dimensions.

The educational praxis dimension (6 items, $\alpha = 0.85$) is aimed at exploring teaching practice by considering thoughts, experiences, ideas, identity, and objectives when teaching, reflecting upon the world surrounding educational contexts to transform them (Freire, 1970; Ladson-Billings, 1995). Under the community dimension (9 items, $\alpha = 0.87$), teachers' views on collaborating with students to build community in the classroom, to understand the world and the surrounding environment (Freire, 1970; Gay, 2010), and to consider their importance in the teaching-learning process are evaluated. The extent to which schools are seen as places that either challenge or perpetuate social inequalities is investigated under the social justice dimension (4 items, $\alpha = 0.68$), fostering greater critical thinking and socio-political awareness (Freire, 1979; Ladson-Billings, 1995) of the structures and institutions surrounding educational settings.

In this study, our proposed hypothesis is that the factorial structure and reliability indices of the original English version of the DCRPS will be similar in Spanish. To that end, the DCRPS will be administered to Spanish teachers, and the levels of teacher disposition towards CRE among Spanish educators will be investigated. The research objectives were:

1. To adapt and to examine the psychometric properties of the Spanish version of the DCRPS for its validation.
2. To explore teacher disposition towards CRE among Spanish teachers.
3. To determine whether there are differences in teacher disposition towards CRE among Spanish teachers based on gender, educational level, and teaching specialty.

METHOD

Design

An instrumental-type study (Ato *et al*., 2013), it includes research analysing the psychometric properties of self-reported scales, whether newly created or translations and adaptations of existing instruments. The sampling methods were non-probabilistic snowball and discretionary.

Sample

The appropriate sample size was determined by following the common cut-off criterion of at least 200 responses and a minimum ratio of 10 participants *per* item; that is, each item should have at least 10 responses (Kline, 2014; Lloret-Segura *et al*., 2014). The original questionnaire contained 19 items, thereby requiring a minimum of 190 responses to meet the criterion of 10 responses *per* item. A total of 538 teachers from various educational levels and different provinces in Spain voluntarily and anonymously responded to the online questionnaire designed to validate the scale. The study adhered to the guidelines of the Declaration of Helsinki (Declaration of the World Medical Association), ensuring ethical-philosophical commitment and unwavering respect for human dignity, privacy, physical and moral integrity, and guaranteeing the protection of personal data throughout the research. The research project had also received a favourable report from the Bioethics Committee of the relevant university (RI 1105/2023).

The sociodemographic data (Table 1) on gender, age, educational level at the teacher's place of employment, and teaching specialty were the dependent variables. Regarding the educational level, a distinction was made between Compulsory Secondary Education (ESO) and Baccalaureate (pre-university studies), both within Secondary Education, as we believed there might be differences that could add value to the analysis. Although the online questionnaire also inquired into province, country of birth, and family origin, the analysis of those variables could not be pursued, due to sample size limitations and some very unequal distributions between each of those variables, which limited the statistical power of the analyses. For example, in the case of the province, 186 participants indicated that they were from Madrid, 69 from Burgos, and 25 from Segovia, with responses from 40 different provinces. Regarding the country of birth, 96% of the teachers who answered the questionnaire indicated that they were born in Spain, and finally, for family origin, the same happened with 95% of the sample indicating a Spanish family origin. Those variables were therefore neither analysed

nor considered in the final analysis, due to the significant differences within the sample for each one.

Table 1
Sociodemographic data of the sample

Teacher's Sample	n	%
Gender		
Women	402	74.7
Man	136	25.3
Age		
From 22 to 31	83	15.4
From 32 to 41	133	24.7
From 42 to 51	145	27.0
52 or more	177	32.9
Educational Level		
Kindergarten	96	17.8
Primary Education	189	35.1
Secondary Education (ESO)	183	34.0
Baccalaureate (Pre-university studies)	70	13.0
Teaching specialty		
Special Education	52	9.7
Experimental Sciences	80	14.9
Social Sciences and Humanities	176	32.7
Physical Education	39	7.2
Generalist Primary Education (GPE)	170	31.6
Other	21	3.9
TOTAL	538	100

Instruments

Dispositions for Culturally Responsive Pedagogy Scale (DCRPS)

The initial version of the scale validated by Whitaker and Valtierra (2018) was used, which is a 19-item self-report type scale. The distribution of the items on the scale was as follows:

a) Educational Praxis: P1, P2, P3, P4, P5, P6.
b) Community: C7, C8, C9, C10, C11, C12, C13, C14, C15.
c) Social Justice: J16, J17, J18, J19.

In the Confirmatory Factor Analysis (CFA) of the original scale, the authors reported the following fit indices (NFI = 0.88; IFI = 0.92; CFI = 0.92; TLI = 0.91; SRMR = 0.061; RMSEA = 0.051; $\alpha = 0.88$).

Multicultural Education Attitude Scale (EAEM)

Additionally, the online survey included the Multicultural Education Attitude Scale (Rodríguez *et al*., 1997) to assess the concurrent validity of the DCRPS scale. This instrument has an acceptable Cronbach's alpha ($\alpha = 0.88$). It is noteworthy that some items were modified to adapt them to the current context while maintaining their original meaning, as has previously occurred (Ledezma Vargas & Hernández Vigorena, 2023).

Procedure

The survey was sent *via* email to various educational institutions for distribution among teachers of different educational levels and provinces. In addition, it was shared among the researchers' closest contacts, which may account for the overrepresentation of certain types of teachers.

The two stages of Translation, Cultural Adaptation, and Validation, recommended by Ramada-Rodilla *et al*. (2013), were followed:

a) Cultural adaptation, considering idiomatic expressions, cultural context, and the educational system
b) Validation in Spanish, to assess the degree to which the psychometric properties of the scale in English were maintained.

Five steps were followed: 1. Direct Translation: Three bilingual translators, whose native language was Spanish, performed a conceptual translation of the instrument. 2. Synthesis of Translations: A meeting was held online with the translators to discuss discrepancies until a consensus was reached, which was reflected in a

report. 3. Reverse Translation: Two bilingual translators, with no prior knowledge of the subject matter and whose native language was English, performed the reverse translation. 4. Consolidation by an Expert Committee: An online meeting was held with a committee of experts. The original authors of the questionnaire were consulted to resolve doubts about items that could lead to different interpretations. 5. Pre-testing: To evaluate the applicability and feasibility of the questionnaire, a pre-test was conducted with volunteer teachers (n=25) from various levels, who provided feedback on questions that were difficult to understand or confusing instructions. The feedback was compiled into a report and considered for the final questionnaire.

This process concluded with the need to modify two items from the original scale to adapt them to the Spanish context, as Seisdedos (2000) noted, «some instruments are more sensitive than others when they are moved from one culture to another» (p. 42). The expert committee—comprising a methodology expert, a linguist specializing in both English and Spanish, and an expert in multicultural and intercultural education—determined that two items from the original scale needed modification to fit the Spanish context. Those issues might be more familiar to American teachers but may not be as common in the Spanish context and could lead to different interpretations.

Item 6, «I am willing to be vulnerable», was modified to its final version: «I am willing to review my teaching practices from the perspective of social justice». After consulting with the original authors of the scale, their interpretation of that item was clearly a process of unlearning that leads to an awareness of existing inequalities within educational settings, thereby facilitating education based on social justice and critical dialogue. A preliminary version of the same item presented to the expert panel was «I show vulnerability by applying social justice in the classroom», which was later revised to «I am willing to apply notions of social justice in the classroom», resulting in the final version.

Item 16, «I believe it is important to acknowledge how issues of power are enacted through schools,» was modified to: «I consider it important to recognize how different systems of power (such as racism, sexism, classism, *etc*.) are reproduced in schools.» In this case, in addition to the expert committee's need to adapt it to the Spanish context, there was disagreement between the translators. After consulting with the authors, they indicated that the item referred to recognizing how systems of power affect situations in the classroom, such as power dynamics, through the socialization of students or teaching practices. The modification was agreed upon by the translators and approved by the expert committee.

DATA ANALYSIS

Structural validity

It was first checked whether the data followed a normal distribution by applying the Kolmogorov-Smirnov test (N > 50) to each dimension of the scale, to assess the homogeneity of variance. The significance value was found to be $p < 0.05$, indicating that the distribution of the scores was not normal. Subsequently, both the skewness and the kurtosis of each item was tested, yielding values that were not within ± 2. Having conducted those tests, it was concluded that there was sufficient evidence to reject the null hypothesis. Non-parametric techniques were used for the analysis of the variables under consideration, and biserial rank correlation (r_{rb}) was employed to determine the effect size for observing differences between two independent groups, while eta squared (ε_R^2) was used to analyse differences between more than two independent groups.

Although there was a theoretical proposition regarding the hypothetical factorial structure of the model and its underlying dimensions (Whitaker & Valtierra, 2018), construct validity was examined, due to the modification of two items from the original scale. An Exploratory Factor Analysis (EFA) was conducted to replicate the original model. The Kaiser-Meyer-Olkin (KMO) indices, with values of .88, .92, and .71 for the different dimensions, and the statistically significant results of Bartlett's test of sphericity ($p < .001$), supported the feasibility of that analysis. It was applied to a random 50% sample (n=269) of the study sample, resulting in two equivalent halves to ensure sample representativeness. Each half was used for both EFA and Confirmatory Factor Analysis (CFA).

The IBM SPSS Statistics 28 software package was used for the EFA, employing the unweighted least squares method and promax rotation, with parallel analysis through 500 bootstrap iterations based on polychoric correlations, to determine the number of factors to retain, following one of the appropriate recommendations (Lloret-Segura *et al*., 2014). CFA was conducted to test whether the hypothesized model validated in English matched our EFA and fitted adequately. The Amos v. 26 software package was used, applying goodness-of-fit indices with the values recommended by Hu and Bentler (1999), including: chi-square value (χ^2) and its statistical significance ($p > .05$); CFI ≥ .90; TLI ≥ .90; RMSEA ≤ .08.

Following these indices and aiming to develop a practical instrument for the construct to be measured, items with lower factorial loadings were removed, considering a minimum factorial loading between 0.32 and 0.40 (Tabachnick & Fidell, 2001), with no cross-loadings between factors lower than 0.32.

Convergent and discriminant validity

Values greater than .32 in the matrix of standardized coefficients indicate convergent validity between the dimensions (Kline, 2014), while values equal to or less than .85 in the matrix of construct correlations provide evidence of discriminant validity for each dimension (Garson, 2002).

Concurrent validity

The concurrent validity of the factorial model with the best fit was examined through a correlational analysis, using Spearman's rank correlation tests for non-parametric data, as the Kolmogorov-Smirnov test suggested a violation of normal distribution ($p < 0.05$). Responses from teachers to the DCRPS and EAEM were analysed, expecting a positive correlation between the two constructs, as outlined in the theoretical section. Both scales were designed to measure teachers' beliefs and attitudes towards CRE and multicultural education.

Reliability

Cronbach's alpha ($\alpha \geq .70$) and McDonald's omega ($\omega \geq .70$) were used to determine the reliability of the factorial model resulting from the CFA. McDonald's omega is considered a better indicator for multidimensional scales that employ Likert-type items (Watkins, 2017).

RESULTS

Structural validity

Exploratory Factor Analysis (EFA) was first conducted to analyse the structural validity of the scale. It was observed that Item 15 of the Spanish version of the scale was in a different dimension compared to the original model. The results of the EFA (Table 2) revealed a structure consisting of 3 dimensions. It was noted that the Spanish version of the instrument was not aligned with the original scale, as Item 15 appeared in the Social Justice dimension rather than in the Community dimension. Subsequently, following the EFA results, which were well aligned with the original authors' model except for Item 15, a Confirmatory Factor Analysis (CFA) was performed to confirm this model. After conducting the CFA, the fit indices were: $\chi^2 = 624.65$, $p < .01$; CFI = .922; TLI = .910; IFI = .922; RMSEA = .077; AIC = 706.653.

However, it was observed that Items 15 and 17 had low loadings of 0.49 and 0.36, respectively. So, it was decided to remove those items after the CFA, because their loadings were below 0.5.

Table 2
EFA results for the Spanish version of DCRPS

ITEMS FACTOR			
	1	2	3
P1 (PD)	.651 (.594)		
P2 (OC)	.769 (.600)		
P3 (DP)	.659 (.696)		
P4 (FB)	.689 (.755)		
P5 (PI)	.677 (.711)		
P6 (JS)	.599 (.695)		
C7 (VA)		.669 (.636)	
C8 (CF)		.701 (.686)	
C9 (CC)		.713 (.737)	
C10 (AC)		.748 (.707)	
C11 (AARA)		.730 (.678)	
C12 (DVA)		.740 (.761)	
C13 (DEE)		.595 (.603)	
C14 (MCA)		.581 (.599)	
JS15 (CPEA)			.445
JS16 (EDSP)			.506 (.613)
JS17 (EDS)			.578
JS18 (ATP)			.561 (.722)
JS19 (EI)			.438 (.387)

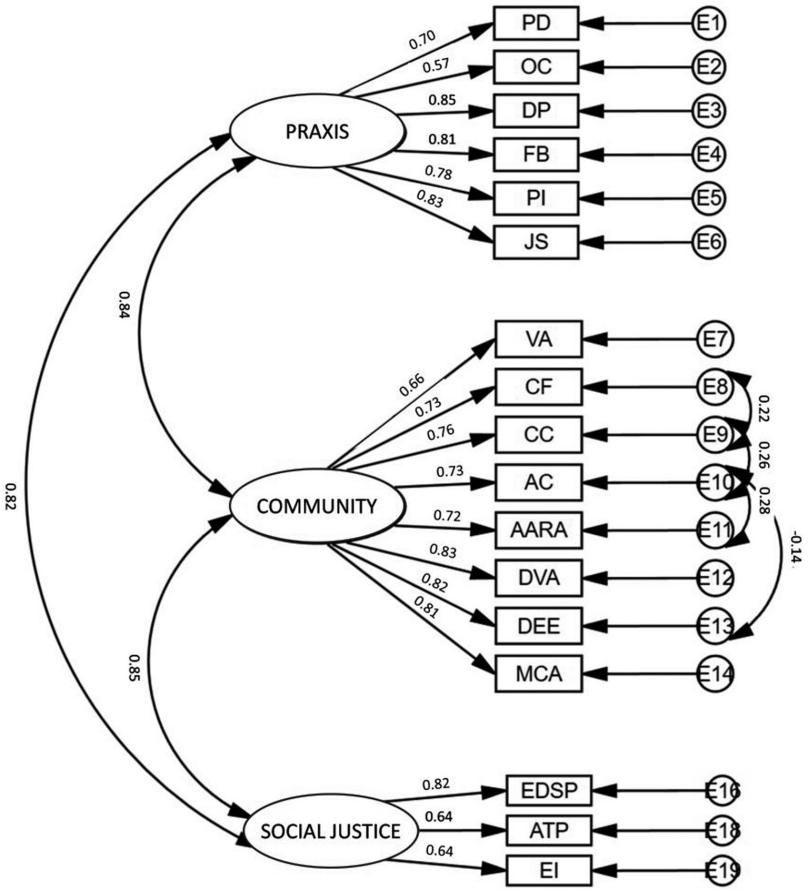
Note. The loadings of each item (between parentheses) are calculated after the removal of Items 15 and 17.

In a third step, an EFA was conducted again after removing Items 15 and 17. This new structure revealed that the instrument was aligned with the original version, except for Item 19, which showed a low loading (Table 2). Finally, a CFA was performed again without Items 15 and 17, adding correlations between four pairs of measured variables (C8 and C9; C9 and C10; C10 and C11; C10 and C13) based on statistical and methodological effects, as the items had similar wordings (Brown,

2015). It was noteworthy that Item 19 was not removed, due to the requirement, for validity-related reasons, to have at least 3 items per dimension of the questionnaire (Lambert & Newman, 2023). A decision that was supported by the fit indices: χ^2 = 422.61, p < .01; CFI = .947; TLI = .935; IFI = .947; RMSEA = .072; AIC = 504.617. Additionally, Figure 1 reveals that in the final CFA, all items, including Item 19, have loadings above the minimum recommended index of 0.5. In conclusion, the removal of Items 15 and 17 did not compromise the conceptual integrity of the scale and improved the model fit.

Figure 1

Standardized coefficients of the final Spanish version of the DCRPS model



* Values represent standardized coefficients (β).

The CFA confirmed a three-dimensional structure, replicating the original model while removing the two aforementioned items to achieve a better fit and to ensure convergent and discriminant validity between the three dimensions. The results provided evidence of structural validity for the Spanish adaptation of the DCRPS and suggested that Educational Praxis, Community, and Social Justice were three distinct unidimensional constructs necessary for considering teachers' dispositions towards Culturally Responsive Education (CRE).

Convergent and discriminant validity

The values of the standardized coefficients resulting from the 17-item model, within the CFA range between .57 and .85 (M = .74), provided evidence of convergent validity for each dimension. The correlation factors between the three dimensions were as follows: Educational Praxis – Community .84; Educational Praxis – Social Justice .82; Community – Social Justice .85. Therefore, the dimensions showed discriminant validity and were consistent with the theoretical assumptions underpinning the model.

Concurrent Validity

The correlation obtained in the analysis between the EAEM and DCRPS scales showed that the scale and its three dimensions were positively correlated at a moderate level. DCRPS (rho = .479; $p < .001$); Educational Praxis (rho = .410; $p < .001$); Community (rho = .412; $p < .001$); Social Justice (rho = .394; $p < .001$).

The correlation between the DCRPS and the subdimensions of the EAEM scale was also positive at a moderate level in almost all dimensions. There was a moderate and positive correlation between the subdimensions of effects on children (rho = .398; $p < .001$), effects on classroom work (rho = .392; $p < .001$), and the role of the school (rho = .545; $p < .001$). However, the correlation was low in the subdimension of effects on the teacher (rho = .291; $p < .001$).

Reliability results

The DCRPS variable achieved a Cronbach's alpha coefficient of .942. The coefficients obtained for the latent variables were $\alpha = .891$ (Educational Praxis); $\alpha = .915$ (Community); $\alpha = .736$ (Social Justice). The McDonald's omega coefficients were .943 for DCRPS; $\omega = .895$ (Educational Praxis); $\omega = .916$ (Community); $\omega = .738$ (Social Justice). Those values indicated adequate reliability in so far as they

were aligned with the recommended values of the psychometric literature, thereby confirming the internal consistency of the scale and its dimensions.

TEACHERS' DISPOSITIONS TOWARDS CULTURALLY RESPONSIVE EDUCATION WITH RESPECT TO GENDER, EDUCATIONAL LEVEL TAUGHT, AND TEACHING SPECIALTY

Before analysing each variable, information on the item values of the scale and its dimensions is presented to provide a general overview of the results. Considering a minimum score of 1 and a maximum of 6, the items with the highest mean scores were: «I consider it important to collaborate with colleagues» (5.75); «I consider it important to use dialogue as a way to understand students' lives outside the classroom» (5.61). The items with the lowest scores were: «I consider it important to take students' contributions into account when setting classroom rules» (5.25); «I am willing to analyse my own identities (cultural, professional, religious, gender, etc.)» (5.30). Among the dimensions, the highest score was obtained by Community (5.50) and the lowest by Social Justice (5.37). Regarding the variables considered, Table 3 shows each one in relation to the dimensions together with their mean, median, and standard deviation.

The Mann-Whitney U test showed statistically significant differences for the DCRPS variable and each of its dimensions according to gender, U = 34,170.0, z = 4.36, $p < .001$, reflecting a small effect size, $r_{rb} = .18$. In view of the median scores (Table 3) for dispositions towards Culturally Responsive Education (CRE) by gender, women scored higher than men when practicing that pedagogy.

Regarding differences by educational level, the Kruskal-Wallis H test, H (3) = 25.19, $p < .001$, demonstrated statistically significant differences for the DCRPS variable, with a small effect size, $\varepsilon_R^2 = 0.04$. The *post hoc* test with Bonferroni correction showed that those differences were between GPE and Baccalaureate (Pre-University studies), GPE and Compulsory Secondary Education (CSO), and Kindergarten and Baccalaureate. In that case, the median scores for Primary and Kindergarten were higher than those for CSO and Baccalaureate (Table 3), indicating a greater disposition towards Culturally Responsive Education (CRE) at those levels. The test results for the dimensions revealed no statistically significant differences for the dimension of Educational Praxis, but significant differences for the two other dimensions: Community and Social Justice. Differences were found between Primary Education and Baccalaureate or pre-University studies, Primary Education and CSO, Kindergarten and Baccalaureate, and Kindergarten and CSO for the Community dimension, H (3) = 53.237, $p < .001$, with a moderate effect size, $\varepsilon_R^2 = 0.09$. Statistically significant differences were found between GPE and Baccalaureate for the Social Justice dimension, H (3) = 8.527, $p = .036$, with a small

Table 3

Descriptive statistics of the scale variables and subdimensions

Sociodemographic variables	DCRPS		Educational praxis		Community		Social Justice	
	M (SD)	Mdn	M (SD)	Mdn	M (SD)	Mdn	M (SD)	Mdn
Gender								
Women	5.5 (.60)	5.6	5.5 (.71)	5.6	5.5 (.61)	5.7	5.4 (.73)	5.6
Man	5.2 (.75)	5.4	5.2 (.85)	5.5	5.3 (.76)	5.4	5.1 (.99)	5.3
Level of Education								
Kindergarten	5.5 (.56)	5.7	5.4 (.71)	5.6	5.6 (.55)	5.7	5.4 (.75)	5.6
Primary Education	5.5 (.56)	5.7	5.5 (.64)	5.6	5.6 (.56)	5.7	5.4 (.75)	5.6
Secondary Education (CSE)	5.3 (.68)	5.5	5.43(.85)	5.6	5.4 (.67)	5.6	5.3 (.84)	5.6
Baccalaureate (Pre-Uni. studies)	5.2 (.80)	5.3	5.2 (.84)	5.5	5.1 (.83)	5.3	5.1 (.92)	5.3
Teaching specialty								
Special Education (SE)	5.5 (.69)	5.7	5.3 (.84)	5.8	5.6 (.66)	5.7	5.4 (.91)	5.6
Experimental Sciences (ES)	5.1 (.84)	5.3	5.1 (.99)	5.5	5.1 (.82)	5.3	5.1 (.82)	5.5
Humanities and Social Sciences (H&SS)	5.4 (.56)	5.5	5.4 (.69)	5.5	5.4 (.56)	5.6	5.4 (.56)	5.6
Physical Education	5.4 (1.0)	5.5	5.3 (.99)	5.6	5.3 (1.0)	5.6	5.2 (1.1)	5.6
General Primary Education (GPE)	5.6 (.46)	5.7	5.5 (.60)	5.8	5.6 (.45)	5.7	5.4 (.61)	5.6
Other	5.4 (.53)	5.5	5.5 (.48)	5.6	5.4 (.59)	5.7	5.2 (.67)	5.3

Note. M=mean, *SD*=Standard Deviation, *Mdn=median.*

effect size, $\varepsilon_R^2 = 0.01$. The median data for GPE and Kindergarten (Table 3) indicated that the greatest disposition towards CRE was found at those educational levels.

The responses were regrouped to form groups with greater statistical power, to analyse the specialty. The specialties of Music Education, Spanish Language and Literature, Philosophy, Foreign Languages, Arts, Geography and History, Economics, and Business were grouped under Social Sciences, Arts, and Humanities (n = 176). Mathematics, Physics and Chemistry, Technology, Biology, and Geology were grouped under Experimental Sciences (ES) (n = 80). Speech and Language, Therapeutic Pedagogy, Educational Guidance, and Socio-Community Intervention in Special Education were grouped together (n = 52). Physical Education had a sample of (n = 39), and the General Primary Education (GPE) category (n = 170) constituted another group, along with the category Other (n = 21).

The Kruskal-Wallis test with Bonferroni *post hoc* analysis H (5) =37.321, p< .001 revealed statistically significant differences between specialties Humanities and Social Sciences (H&SS)-GPE; Experimental Sciences y General Primary Education ES-GPE, and ES-Special Education (SE) in the DCRPS variable, with a moderate effect size $\varepsilon_R^2 = 0.06$, where the median was highest for GPE (5.76). Regarding the dimensions, Educational praxis H (5) = 15.694, p=.008 and Community H (5) = 61.683, p<.001 showed statistically significant differences, with a low effect size $\varepsilon_R^2 = 0.02$ and a high effect size $\varepsilon_R^2 = 0.1$, respectively. The Bonferroni-corrected *post hoc* test revealed those differences between the specialties of ES, SE, and GPE in the Educational praxis dimension, and between ES, H&SS, SE, and GPE in the Community dimension. Results that pointed to a higher disposition towards ECR within the fields of SE and GPE, both in the Educational praxis and the Community dimensions, as shown by the median, range, and mean data (Table 4).

Table 4

Descriptive statistics by teaching specialty and scale subdimensions

	Educational praxis				Community				Social Justice			
	M (SD)	Range	Mdn	p	M (SD)	Range	Mdn	p	M (SD)	Range	Mdn	p
Special Education (SE)	5.53 (.84)	4.67	5.83	*ES	5.66 (.66)	4.75	5.75	*ES, H&SS	5.46 (.91)	5.00	5.66	-
Experimental Sciences (ES)	5.17 (.99)	4.67	5.00	*SE, CPE	5.18 (.82)	4.88	5.37	*SE, CPE	5.12 (1.13)	5.50	5.50	-
Humanities and Social Sciences (H&SS)	5.43 (.69)	5.00	5.00	-	5.45 (.56)	4.75	5.62	*SE, CPE	5.40 (.68)	5.00	5.66	-
Physical Education	5.35 (.99)	5.00	5.66	-	5.37 (1.06)	5.00	5.62	-	5.23 (1.12)	5.00	5.66	-
General Primary Education (GPE)	5.54 (.60)	5.00	5.83	*ES	5.69 (.45)	5.00	5.75	*ES, H&SS	5.48 (.61)	3.67	5.66	-
Other	5.57 (.48)	1.67	5.66	-	5.41 (.59)	1.88	5.75	*H&SS	5.25 (.67)	2.00	5.33	-

Note. *M*=mean, *SD*= Standard Deviation, *Mdn=median, p* = significance, * = significance level ≤ .05.

DISCUSSION AND CONCLUSIONS

A reliable initial instrument for assessing the dispositions of Spanish-speaking teachers towards Culturally Responsive Teaching (CRT) is offered in this paper through a meticulous methodological process. Concerning the first research objective, the results of the Confirmatory Factor Analysis (CFA) demonstrated a three-factor model in Spanish like the theoretical model upon which it was based (Whitaker & Valtierra, 2018a), with adequate evidence of structural, convergent, and discriminant validity, thus confirming the research hypothesis. Among all the goodness-of-fit indices evaluated, only one showed statistical significance, the Chi-square (χ^2) value, presenting values that were not recommended in the literature. However, that analysis was highly sensitive to sample size (Gatignon, 2013), and the χ^2 indicator alone was no indication of a poorly fitting model, especially as the remaining fit indices reached adequate levels. The results also indicated that each dimension correlated at both a high and a medium level with the EAEM, demonstrating the concurrent validity of the instrument. Additionally, the reliability results imply the appropriate use of the instrument among teachers and likewise uphold its validity. Regarding the structure of the items and the subdimensions of the scale, the values of the standardized coefficients of each item and the relationship of each construct with the theoretical foundations of CRT, measuring differentiated aspects, provided evidence of adequate convergent and discriminant validity.

Regarding the second and third objectives, the results showed statistically significant differences in gender, educational level taught, and some disciplines. However, the effect size of those variables indicated that the differences should be considered relevant between educational level and the community dimension, between teaching specialty and the DCRPS variable, with clear differences between teaching specialty and the community dimension. Regarding the GPE specialty, the results were aligned with the differences concerning educational level, Primary Education being where CRT is most actively pursued. From the perspective of SE, one possible explanation could be a heightened sensitivity to diversity. However, it is necessary to investigate whether that sensitivity is also focused on cultural diversity, given the overrepresentation of students from cultural and ethnic minorities in special education classrooms, which leads to greater school segregation. That segregation, through monocultural inclusion policies, perpetuates a paternalistic racism that fragments classrooms and society (Delbury, 2020).

The results are consistent with other studies where the community dimension of the DCRPS is predominant, and when addressed through mixed methods, qualitative references to that dimension are notable (Whitaker & Valtierra, 2018b; Valtierra & Whitaker, 2021). Overall, this research represents one of the first efforts aimed at developing an instrument based on the DCRPS model for use in any Spanish-speaking

country. Current research (Warren, 2018; Whitaker & Valtierra, 2018a; Valtierra & Whitaker, 2021; Comstock *et al*., 2023) is enlarged through this study on teachers' dispositions and beliefs regarding the implementation of CRT in the classroom. The DCRPS instrument can be used to analyse those beliefs and attitudes of Spanish-speaking teachers towards CRT, which will determine their future dispositions towards practicing this type of pedagogy, thereby avoiding the folklorization of different classroom cultures. The linguistic and cultural adaptation of the DCRPS instrument enables an understanding of new educational settings to achieve greater educational and social equity. This study therefore has implications both at the theoretical level of CRT and in relation to its methodological operationalization. The educational praxis dimension combines cognitive theory with educational practice, and after modifying Item 6 in the Spanish version, our belief is that this scale could be used with both in-service and pre-service teachers, representing an advance in current related research. All the more so, taking into account that the authors had previously administered this scale for a comparative analysis of the dispositions of in-service teachers both in urban and in rural contexts (Valtierra & Whitaker, 2021). The results regarding educational praxis illustrate the need for reflection among teachers to transform educational practice (Freire, 1970). In a similar way to the work of Whitaker & Valtierra (2018b), educational praxis together with community plays a significant role for teachers when implementing CRT.

This brief and simple instrument holds significant value for conducting educational research related to cultural diversity in schools. The results contribute to the emerging literature on CRT and, with only 17 items, reduce the burden of data collection. Although the social justice dimension has the fewest items, Lambert & Newman (2023) noted that it contained the minimum number of items necessary to reflect a dimension when validating a scale, aligning with other works in the literature (Casebeer, 2016; Wronowski *et al*., 2023). The findings were consistent with those of Wronowski *et al*. (2023), who indicated in their study that women participants were more likely than men to pursue greater social justice in the classroom, which is essential for implementing CRT.

LIMITATIONS OF THE STUDY AND FUTURE DIRECTIONS

Some limitations of this study must be noted. First, as Whitaker & Valtierra (2018) pointed out, it is challenging to capture all necessary aspects to understand teachers' dispositions towards CRT with this scale alone. In fact, during the original validation in English, although items related to the dimension of co-construction of knowledge between teachers and students based on diverse cultural influences within the classroom were initially included, they could in the end not be added, due to insufficient reliability. In future research, the school curriculum could be analysed

while administering the DCRPS or quantitative data could be complemented with other qualitative data that do indeed address that co-construction of knowledge in the classroom.

Although some authors, such as Herrero (2010), suggested that the correlation of certain errors could enhance the model's capability to reflect real data, a potential limitation of this study could be the correlation of errors within the same dimension of the scale. A possible theoretical explanation is that either the items are worded similarly or respondents interpret them in a similar manner. Future research could review items with similar wording (Items 8 and 9) or those measuring very similar aspects (Items 10 and 11) to reduce the number of items in the scale or to modify some of them to measure constructs more directly.

Another limitation of the study relates to the characteristics of the sample. There is a higher number of responses from women compared to men, and the teachers' experiences are not characterized by cultural diversity, as most respondents reported Spanish family backgrounds and birthplaces. There is also some imbalance between different provinces, with a predominance of responses from Madrid, and Burgos and Segovia in Castile and Leon. It is important to note that the purpose of this study was to analyse the psychometric properties of the DCRPS instrument and to provide initial data on teachers' dispositions towards CRT in relation to such variables as gender, educational level, and specialty. The groundwork is therefore laid for future research on this highly relevant topic.

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