Development and validation of respect, equity, and inclusion (REI) in Physical Education for children

Desarrollo y validación del respeto, la equidad y la inclusión (REI) en la Educación Física infantil

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Abstract

Introduction. Antisocial behavior among adolescents, such as violence and bullying, is associated with increased risk of lifetime mental disorders, decreased social functioning, and poor educational outcomes.
Objective. This study aimed to develop and validate an instrument to measure respect, equity, and inclusion in physical education for children aged 8–12 years in Indonesia.
Methodology. The 15-item instrument, based on the IOC framework, was divided into three subscales representing respect, equity, and inclusion. Each item was designed to be age-appropriate and relevant through expert consultations involving specialists in youth sport values, child psychology, and physical education pedagogy. A pilot study was conducted before validation with 223 children from various schools in Bandung, Indonesia. Confirmatory Factor Analysis was used to assess construct validity, while reliability was evaluated using Cronbach's Alpha.
Results. The results showed a Kaiser-Meyer-Olkin value of 0.707 and a total variance explained of 56.875%, confirming the instrument's adequacy for factor analysis. Cronbach's alpha of 0.649 indicated acceptable internal consistency across the items. Gender analysis revealed significant differences in overall sport values, with females scoring higher than males (mean rank = 122.00 vs. 103.42, p = 0.031).
Discussion and Conclusions. This validated instrument serves as a practical tool for assessing respect, equity, and inclusion (REI) in physical education, highlighting the importance of addressing gender differences in social values. Expanding the instrument's scope, exploring longitudinal impacts, and integrating diverse methodologies are recommended to deepen the understanding of how these values manifest and evolve in various contexts.

Keywords

Equity; inclusion; Physical Education; respect; sport values; values education.

Resumen

Introducción. El comportamiento antisocial en adolescentes, como la violencia y el acoso escolar, se asocia con un mayor riesgo de trastornos mentales a lo largo de la vida, un menor funcionamiento social y malos resultados educativos.
Objetivo. Este estudio tuvo como objetivo desarrollar y validar un instrumento para medir el respeto, la equidad y la inclusión en la educación física para niños de 8 a 12 años en Indonesia.
Metodología. El instrumento de 15 ítems, basado en el marco del COI, se dividió en tres subescalas que representan el respeto, la equidad y la inclusión. Cada ítem se diseñó para ser apropiado para la edad y relevante mediante consultas con expertos en valores del deporte juvenil, psicología infantil y pedagogía de la educación física. Se realizó un estudio piloto previo a la validación con 223 niños de diversas escuelas en Bandung, Indonesia. Se utilizó el Análisis Factorial Confirmatorio para evaluar la validez del constructo, mientras que la fiabilidad se evaluó mediante el Alfa de Cronbach.
Resultados. Los resultados mostraron un valor de Kaiser-Meyer-Olkin de 0,707 y una varianza total explicada del 56,875%, lo que confirma la idoneidad del instrumento para el análisis factorial. El alfa de Cronbach de 0,649 indicó una consistencia interna aceptable en todos los ítems. El análisis de género reveló diferencias significativas en los valores deportivos generales, con puntuaciones más altas para las mujeres que para los hombres (rango medio = 122,00 frente a 103,42; p = 0,031).
Discusión y conclusiones. Este instrumento validado sirve como herramienta práctica para evaluar el respeto, la equidad y la inclusión (REI) en la educación física, destacando la importancia de abordar las diferencias de género en los valores sociales. Se recomienda ampliar el alcance del instrumento, explorar los impactos longitudinales e integrar diversas metodologías para profundizar en la comprensión de cómo estos valores se manifiestan y evolucionan en diversos contextos.

Palabras clave

Equidad; inclusión; Educación Física; respeto; valores del deporte; educación en valores.

Introduction

Antisocial behavior among adolescents, such as violence and bullying, is associated with increased risk of lifetime mental disorders, decreased social functioning, and poor educational outcomes (Bowes et al., 2019). Youth violence encompasses a range of acts from bullying and physical fighting to sexual assault to murder. Worldwide, more than 176,000 homicides occur among young people aged 15–29 each year, accounting for 37% of the global total (WHO, 2023).

In Indonesia, bullying in educational settings has surged, with 2,355 reported cases recorded in 2023 alone (Relawan, 2023). There have been many studies documenting cases of bullying in Indonesia from early childhood to college (Abdillah et al., 2020; Hartati et al., 2020; Noboru et al., 2021). One of the research results in Indonesia showed that bullying behavior was found in children aged 4-6 years (Hartati et al., 2020). Such antisocial behaviors not only disrupt learning environments but also hinder the personal and social development of children.

At the same time, concerns about inactivity among Indonesian children have reached alarming levels, contributing to health risks such as obesity and sedentary-related illnesses (Owen, 2020). Reports have highlighted the insufficient government intervention to address physical inactivity, which further exacerbates these trends among school-age children (Hanifah et al., 2023; Indonesia, 2022; Nunik, 2015). These issues are particularly concerning for children aged 8–12 years, a developmental stage where foundational physical, emotional, and social skills are established.

Physical education (PE) has been identified as a medium to foster positive behaviors, values, and social inclusion among children. Previous research has demonstrated that structured PE programs can effectively promote life skills, reduce antisocial behaviors, and enhance social and emotional learning (Lee & Wright, 2024; Osborne & Egan, 2023; Pan & Hsu, 2024). However, PE in Indonesia remains underutilized as a platform for fostering students' positive character development (Anira et al., 2021; Côté & Hancock, 2016; Holt et al., 2017). Therefore, quality education through PE is essential to optimize students' potential (Cronin et al., 2021, 2023). Quality education is one of the goals of the Sustainable Development Goals (SDGs), aimed at ensuring all students receive equitable, high-quality education (United Nation, 2015). To address current challenges, such as high levels of antisocial behavior and low physical activity, PE in schools must deliver quality education that is active, innovative, and socially relevant.

UNESCO highlights that PE plays a pivotal role in fostering quality education by not only enhancing cognitive outcomes but also instilling positive values in children (UNESCO, 2016). One initiative recommended by UNESCO to achieve Values Education through Sport (VETS). VETS is a learning program designed to encourage children to remain physically active, sharpen cognitive abilities, take responsibility, and improve focus and participation in learning (UNESCO, 2019). Through structured physical activities, VETS enhances physical, social, and emotional well-being while fostering self-confidence and social responsibility, supporting children's transition to independence in adulthood. VETS emphasizes three core components: respect, equity, and inclusion (UNESCO et al., 2019). Respect involves children demonstrating dignity, politeness, and care for themselves and others. Activities under this component aim to enhance respectful behaviors, communication skills, and attitudes that reflect consideration for others, such as classmates, teachers, rules, and equipment (Kendellen et al., 2016). Equity focuses on creating opportunities for all children to achieve their full potential while emphasizing the importance of fairness. Inclusion ensures participation for everyone, valuing diversity and providing solutions to improve accessibility for all.

Recent research has further reinforced these perspectives, showing that values education, inclusion, and equity have been increasingly emphasized in primary school PE. Studies have highlighted that teacher preparation has a strong influence on inclusive practices, with primary teachers being more predisposed to inclusion than secondary teachers (Rojo-Ramos et al., 2022; Tarantino & Neville, 2023). Teachers also hold favorable attitudes toward including children with disabilities, especially with direct teaching experience (Tarantino et al., 2022). Equity and gender equality remain central, with systematic reviews identifying strategies to counter stereotypes and promote fairness (Guerrero & Guerrero Puerta, 2023). Furthermore, primary classroom teachers recognize the role of PE in holistic development (Deng & Legge, 2022). Yet, literature still shows gaps in addressing marginalized groups, including racialized mi-

norities, disabled people, and Indigenous peoples (Arora & Wolbring, 2022). Newer approaches advocate for holistic curricula integrating physical, cognitive, social, and emotional dimensions (Mustafa et al., 2024).

However, despite the importance of teaching these values, existing measurement tools are limited in scope and applicability for children. Previous instruments often fail to address the combined measurement of respect, equity, and inclusion, particularly in diverse educational settings (Farias et al., 2017; Tredoux et al., 2009). Moreover, there is a need for culturally relevant and age-appropriate tools to assess these values within Indonesian physical education programs. The development of instruments to measure respect, equity, and inclusion in children has become increasingly urgent, particularly in educational and physical activity contexts. This urgency stems from persistent social inequalities in children's access to and participation in physical activities and sports, with disparities based on socioeconomic status, gender, ethnicity, and disability (Hjort & Agergaard, 2022). The concept of inclusive education emphasizes that all students should have equal rights and opportunities to participate meaningfully in learning, regardless of individual characteristics (Montenegro Rueda & Fernández-Cerero, 2023). Measuring these concepts can contribute to the social sustainability of interventions aimed at promoting equal access to leisure-time physical activities for children and youth (Hjort & Agergaard, 2022). By understanding how respect, equity, and inclusion manifest in various programs, stakeholders can work towards creating more sustainable and effective interventions.

While the importance of measuring respect, equity, and inclusion is recognized, there is a lack of comprehensive instruments specifically designed for children. Measuring children's attitudes and behaviors related to prejudice, respect, and inclusion presents particular challenges compared to measuring these concepts in adults (Tredoux et al., 2009). Addressing this gap is not only academically relevant but also socially and practically significant. A valid and reliable instrument to assess respect, equity, and inclusion in children's physical education can provide teachers with practical tools to evaluate classroom climate, inform inclusive pedagogical strategies, and support policy efforts aimed at fostering equitable and socially sustainable education. It also contributes to broader societal goals, such as promoting fairness, reducing bullying, and supporting the United Nations Sustainable Development Goals (SDG 4: Quality Education).

The general objective of this study is to develop and validate an instrument to measure respect, equity, and inclusion (REI) in physical education for children aged 8–12 years in Indonesia. More specifically, this study aims to design items that represent respect, equity, and inclusion in accordance with the IOC framework for values education. It will conduct expert validation to ensure that the content is explicit, age-appropriate, and culturally relevant, and then pilot-test the instrument among elementary school children. In addition, the study aims to evaluate the construct validity of the instrument using Confirmatory Factor Analysis (CFA) and to assess its reliability while examining potential group differences based on gender and age.

Method

The development of instruments in physical education research generally follows a systematic, multiphase approach to ensure validity and reliability (Buzi et al., 2020; Sum et al., 2016). This study adopted this framework through four phases: (1) instrument design based on a comprehensive literature review, (2) expert validation to establish content clarity and relevance, (3) construct validation using Confirmatory Factor Analysis (CFA), and (4) reliability testing. This structure reflects established practices in educational and sport science research, where item pools are derived from theoretical frameworks, refined through expert review, and subsequently tested for psychometric soundness.

Following these principles, we first constructed items grounded in the IOC framework for values education, then refined them through expert consultation and pilot testing with children to ensure clarity and age-appropriateness. Construct validity was examined using CFA, a widely used method in PE research to confirm theoretical factor structures (Buzi et al., 2020). In this study, CFA was prioritized over exploratory analysis because the instrument was explicitly developed from a predefined three-factor model (respect, equity, and inclusion), making confirmatory testing more appropriate. Internal consistency was tested with Cronbach's alpha, acknowledging that values around 0.70 are generally

acceptable for newly developed instruments (Sum et al., 2016). This systematic process aligns with best practices in instrument development and provides a sound basis for applying the REI instrument in physical education contexts.

Participants

Participants of this study were 223 elementary school students in Bandung, Indonesia, aged 8 to 12 years (Female = 120; Male = 103). The majority of the participants (70%) were in the 8–10 age group, while the remaining 30% were aged 11–12 years. Students were recruited from both public and private schools located in the urban districts of Bandung to reflect diverse educational contexts. The inclusion criteria required students to be enrolled in elementary school, within the target age range, and able to provide informed assent, with consent obtained from a parent, guardian, or teacher. Exclusion criteria included children who did not complete the questionnaire in full or those identified by teachers as having significant difficulty understanding the items due to language or cognitive limitations. This demographic distribution allowed the sample to capture a balanced representation of gender and age groups, while also reflecting the variety of school environments in which physical education is delivered in Indonesia.

Procedure

Instrument Design

The initial pool of items was developed based on a comprehensive review of the literature on values education, particularly the IOC framework on respect, equity, and inclusion (IOC, 2016a, 2016b; UNESCO, 2019). The process began with an extensive review of existing literature, including IOC resources and previously implemented instruments that focus on respect, equity, and inclusion (Arini, 2021; Stewart-Brown & Edmunds, 2003). This allowed us to construct an initial list of criteria specifically targeting these values, informed by the IOC Sport Values in Every Classroom guide (UNESCO, 2019).

Based on this review, we generated an initial pool of items categorized into three subscales: respect, equity, and inclusion. The items were derived from key IOC definitions, where respect involves promoting dignity for oneself and others; equity focuses on creating opportunities for all children to achieve their fullest potential; and inclusion emphasizes participation for all, with an appreciation for diversity. The instrument consisted of 15 items, with five items representing each of the following indicators: respect, equity, and inclusion. The items were constructed following a comprehensive review of the literature on values education, with a primary focus on the IOC framework and related studies. Each item was designed to be age-appropriate for children aged 8 to 12 years, using simple and accessible language to ensure understanding and relevance for the target group. Each item was formulated as a simple, age-appropriate statement suitable for children aged 8 to 12 years. Responses were designed using a three-point Likert scale: 1 (Never), 2 (Sometimes), and 3 (Always).

Expert Validation

To validate the content of the instrument, a panel of three experts was involved in the review process. These experts included a specialist in youth sport values (A1), known for their expertise in values education in sport; a child psychologist (A2), with significant experience in behavioral assessment for children; and an expert in physical education and sport pedagogy (A3). Each expert independently reviewed the 15 items using the Item-Objective Congruence (IOC) framework to assess the clarity, relevance, and appropriateness of each item.

The experts were explicitly asked to validate several key aspects of the instrument. First, they were tasked with assessing the clarity of each item, ensuring that the wording was easily understood by children aged 8-12 years. Second, they evaluated the relevance of each item to determine whether it accurately measured the intended constructs of respect, equity, or inclusion within the context of physical education. Finally, they reviewed the appropriateness of the items, considering whether they were suitable for the children's developmental level, taking into account the cultural context and educational setting.

The feedback from the panel was generally positive, with all experts agreeing on the relevance of each item. Two revisions were made based on the consideration from A3, which was to add face emojis to represent each choice. These emojis will enhance understanding and engagement, especially for the

young participants. And from A2, to change the option "Never" to "Not Yet". This is changing because absolute terms like "never" might not accurately reflect the dynamic nature of child development and children's evolving understanding of concepts and their own abilities (Kondo, 2022). The final version of the instrument retained all 15 items, incorporating the expert feedback to enhance precision and understanding (Samarakkody et al., 2010). Each response option was paired with an emoji representation: a smiling face for "Always," a neutral face for "Sometimes," and a sad face for "Not Yet." This visual aid was designed to help children better comprehend the response options and make the process more interactive and accessible for the target age group.

Construct Validation and Reliability Testing

The finalized 15-item instrument was administered to 223 children (120 males and 103 females), aged 8–10 years (n = 157) and 11–12 years (n = 66). Participants were elementary school students in Bandung, Indonesia. Data collection was conducted in classroom settings with the assistance of trained research assistants and teachers. The instrument was administered to this group to evaluate its psychometric properties and to ensure its relevance and appropriateness across both gender and age categories. The procedure for administering the instrument involved a series of carefully planned steps to ensure ethical compliance and clarity in its implementation. The instrument consists of 15 items (see Table 1).

Table 1. Scale items for respect, equity, and inclusion

Indicator	Scale item	Statement
Respect	Item 1	I am friendly and polite
	Item 2	I listen when my friend speaks
	Item 3	I obey the rules
	Item 4	I am kind with everyone
	Item 5	I am proud of myself
Equity	Item 6	I am happy when my friends play fair.
	Item 7	I always fair
	Item 8	I always helping others
	Item 9	I love justice
	Item 10	I like to share fairly without discrimination
Inclusion	Item 11	I like to invite all my friends to play together
	Item 12	I can play with anyone
	Item 13	I never let my friend be lonely
	Item 14	I feel that being different is not a problem
	Item 15	I support my friends to be more confident

Ethical approval was obtained before data collection. Informed consent was secured from school principals, teachers, parents, and participants. The children were assured of the confidentiality of their responses and their right to withdraw at any stage. The instrument was administered in a classroom setting under the supervision of researchers and teachers to ensure that participants understood the instructions and felt comfortable during the process. Researchers explained the purpose of the study and guided participants on how to respond to the items, emphasizing the importance of honest and thoughtful answers. This procedure ensured both the ethical integrity and reliability of the data collected.

Data analysis

For statistical analysis, the psychometric properties of the instrument were evaluated using Confirmatory Factor Analysis (CFA) to test the construct validity of the three-factor model (respect, equity, and inclusion). The analysis was conducted using SPSS version 27. Reliability testing was performed using Cronbach's alpha to assess the internal consistency of the instrument (Bellini & Hopf, 2007). Additionally, gender differences were examined using the Mann-Whitney U test due to non-normal data distribution. Descriptive statistics were calculated to provide an overview of the participants' demographic information and responses.

Results

Descriptive

The overall descriptive statistics provide insights into the dimensions of respect, equity, and inclusion as assessed in the study. The overall average score for sport values is 87.5. Among the three dimensions, equity has the highest average score at 88.5, followed by Inclusion at 87.3, while respect records the lowest score at 86.7. These results indicate that equity is slightly more emphasized in the participants' perceptions compared to Respect and Inclusion. To provide a clearer overview of the distribution of REI scores by gender, Table 2 presents the mean, standard deviation, and 95% confidence intervals for Respect, Equity, Inclusion, and the overall REI score.

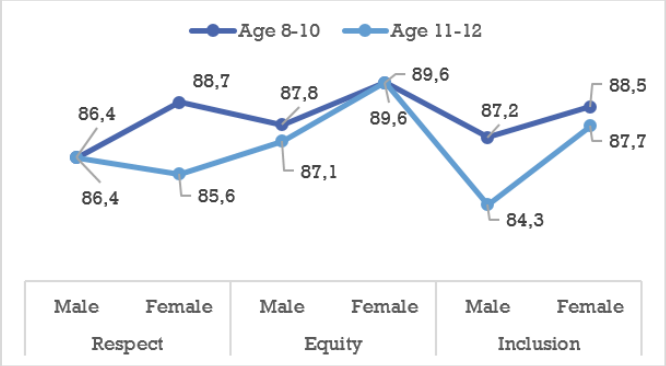
Table 2. Descriptive statistics of Respect, Equity, Inclusion, and overall REI scores by gender

Dimension	Gender	n	Mean	SD	95% CI (Lower–Upper)
Respect	Male	103	86.4	5.2	85.4 – 87.5
	Female	120	86.4	4.9	85.5 – 87.3
Equity	Male	103	85.6	5.8	84.5 – 86.8
	Female	120	88.7	5.4	87.6 – 89.9
Inclusion	Male	103	87.2	5.1	86.2 – 88.3
	Female	120	84.3	5.6	83.2 – 85.5
REI (Overall)	Male	103	86.4	5.3	85.3 – 87.5
	Female	120	87.8	5.0	86.8 – 88.9

Table 2 shows that respect scores were virtually identical between males and females. The most notable gender difference appeared in equity, where females scored higher (M = 88.7) than males (M = 85.6). In contrast, inclusion was slightly higher among males (M = 87.2) compared to females (M = 84.3). When combined into the overall REI score, females maintained a modest advantage (M = 87.8 vs. 86.4). These findings suggest that while respect remains stable across genders, equity and inclusion contribute differently to the overall pattern.

The details regarding each indicator based on gender are shown in Figure 1.

Figure 1. REI in physical education based on gender and age groups



The graph illustrates the distribution of REI in physical education across two age groups (8-10 years and 11-12 years) and gender categories (male and female). Overall, there is consistency in the respect across both age groups, with males and females scoring equally at 86.4. For equity, females in the 8-10 age group scored significantly higher (88.7) compared to males (85.6), while the difference narrowed slightly in the 11-12 age group, where males scored 87.8 and females scored 87.1. In terms of inclusion, males in the younger age group scored slightly higher (87.2) than females (84.3), whereas this trend reversed in the older age group, with females achieving a marginally higher score (87.7) than males (87.2). These findings suggest that while respect remains stable across gender and age, equity and inclusion exhibit more variability, particularly in the younger cohort.

The results of REI are categorized into very good (>92), good (84-92), fair (75-83), and less (<75). The categorization provides a clear framework for interpreting the results. The "Very Good" represents in-

dividuals with an exceptional understanding, application, and internalization of respect, equity, and inclusion. These individuals consistently demonstrate behaviors aligned with these values in both sports and daily life, indicating near-perfect achievement. The "Good" category reflects a solid grasp and application of REI, though there may be minor inconsistencies. While their performance is commendable, there remains room for further improvement. The "Fair" denotes a moderate level of understanding and implementation of REI. Individuals in this category may demonstrate these values sporadically or at a basic level, highlighting the need for additional guidance and reinforcement. Lastly, the "Less" category signifies a low level of comprehension and practice of REI. These individuals may struggle to internalize respect, equity, and inclusion, requiring more intensive interventions and targeted support to foster their development. This classification serves as a valuable tool for identifying strengths and areas for improvement in promoting REI.

To complement these categorical results, Figure 2 illustrates the distribution of REI levels by gender. This visualization provides a clearer picture of how male and female students are represented across performance categories, highlighting differences that are less visible when only examining mean scores.

Figure 2. REI level based on gender

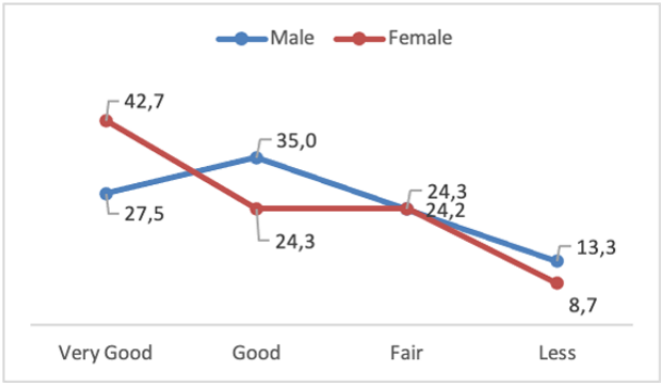


Figure 2 illustrates the distribution of ratings Very Good, Good, Fair, and Less—across male and female participants. For the "Very Good" category, females scored significantly higher (42.7%) compared to males (27.5%). However, in the "Good" category, males exhibited a higher proportion (35.0%) than females (24.3%), showing a reversal of trends. In the "Fairly" category, both genders are nearly equal, with males scoring 24.3% and females 24.2%. Finally, in the "Less" category, males scored slightly higher at 13.3% compared to females at 8.7%. This indicates a gender-based difference in ratings, with females dominating the highest category but males being more evenly distributed across other categories.

Validity and reliability

Validity test is essential for determining whether an instrument accurately measures the intended construct, ensuring the collected data is meaningful and appropriate for analysis (Dixon & Woolner, 2016). It verifies the relevance and adequacy of each item, identifies weak or irrelevant items for refinement, and improves the overall reliability and interpretability of the instrument. Pearson's correlation test was used to calculate the inter-item correlation between individual item scores and the total score, where higher correlations indicate stronger validity (Verma, 2013). Items are considered valid if the correlation coefficient (R-count) exceeds the critical value (R-table) and is statistically significant, typically at the 0.01 or 0.05 level. This process ensures that the instrument is robust, with each item contributing meaningfully to measuring the intended variable. The results of the validity test for all indicators are summarized in Table 3.

Table 3. Item Validity test of indicators of REI

Indicators	Respect	Equity	Inclusion

Item Test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rtable								0,138							
Rcount	.377**	.328**	.423**	.417**	.300**	.314**	.454**	.346**	.427**	.594**	.435**	.323**	.559**	.525**	.403**

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 presents the results, showing that all 15 items were valid with R-count values ranging from 0.300 to 0.594 and p-values below 0.001, which exceeded the critical threshold (R-table = 0.138). The highest validity was observed in Item 10 (R = 0.594), followed by Item 13 (R = 0.559) and Item 14 (R = 0.525). Although Item 5 had the lowest validity (R = 0.300), it still met the criteria for inclusion. These results confirm that all items contribute meaningfully to the overall measurement. Specifically, Item 10 demonstrates the highest validity with an R-count value of 0.594, followed closely by Item 13 (0.559) and Item 14 (0.525). Conversely, Item 5 has the lowest R-count value of 0.300, though it remains above the R-table threshold and is statistically significant. This analysis validates the instrument as reliable for assessing the intended construct, as all items are positively correlated with the overall measurement.

Reliability testing that uses Cronbach's Alpha is essential in instrument development to determine the consistency and stability of measurements across different contexts or instances. It ensures that the instrument produces reliable results, meaning similar outcomes will be achieved if the measurement is repeated under the same conditions. A highly reliable instrument enhances the credibility of the data and strengthens the validity of the conclusions drawn from it, making it a critical step in validating the tool's effectiveness for research purposes. The reliability analysis yielded a value of 0.649, indicating an acceptable level of internal consistency. The study demonstrates that the removal of individual items does not significantly improve the overall reliability, as the changes in Cronbach's Alpha are minimal. The lowest and highest adjusted values suggest that all items contribute meaningfully to the instrument's consistency. This finding confirms that the instrument is adequately reliable, with no single item detracting from its overall stability or accuracy.

Confirmatory Factor Analysis (CFA)

The confirmatory factor analysis (CFA) results demonstrated the psychometric properties of the instrument. The Kaiser-Meyer-Olkin (KMO) value was 0.707, indicating moderate sampling adequacy, while Bartlett's Test of Sphericity yielded a significant result (χ^2 = 308.681, p < .001), confirming that the correlation matrix (see Table 4) was suitable for factor analysis. Communalities ranged from 0.451 to 0.775, with most values exceeding the acceptable threshold of 0.4, indicating that the items adequately explained the variance.

Table 4. Correlation matrix and Communality item for each item

Scale	R1	R2	R3	R4	R5	E1	E2	E3	E4	E5	I1	I2	I3	I4	I5
Correlation Matrix	.693	.583	.680	.678	.571	.522	.685	.675	.701	.788	.733	.627	.792	.766	.756
Communality	.465	.775	.659	.593	.576	.676	.687	.561	.569	.524	.561	.709	.451	.459	.467

The initial analysis identified six components with eigenvalues greater than 1, explaining 56.875% of the total variance. However, based on theoretical considerations and the rotation matrix, three main factors were retained, aligning with the conceptual framework of respect, equity, and inclusion. The rotated component matrix revealed that the majority of items loaded strongly on their respective factors, with loadings generally exceeding 0.5, further validating the structure of the instrument. These findings support the instrument's construct validity, with sufficient evidence of its ability to measure the intended dimensions. The moderate KMO and significant Bartlett's test suggest the sample was appropriate for CFA, while the communalities and factor loadings confirm the strength of individual items in explaining the underlying constructs. This robust analysis underscores the instrument's utility for evaluating these critical values in sport education contexts for children.

Gender Differences

Gender differences in REI have long been a topic of interest in understanding how individuals perceive and internalize key dimensions such as respect, equity, and inclusion. Exploring these differences pro-

vides valuable insights into how boys and girls experience and reflect these values in sport and educational contexts. By examining the aggregated sport values alongside their individual components, this study aims to uncover potential variations between male and female participants, contributing to a deeper understanding of the role gender plays in shaping attitudes and behaviors related to universal sport values (see Table 5).

Table 5. REI in physical education differences based on gender

Measure	Mean Rank (Male)	Mean Rank (Female)	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
REI (Overall)	103,42	122	5150	-2,154	0,031
Respect	105,03	120,12	5343,5	-1,79	0,073
Equity	105,85	119,17	5441,5	-1,584	0,113
Inclusion	107,25	117,53	5610,5	-1,213	0,225

The analysis of REI in physical education, combining respect, equity, and inclusion, revealed significant differences between males and females based on the Mann-Whitney U test. The overall REI mean rank for males was 103.42, while females scored higher with a mean rank of 122.00. The Mann-Whitney U statistic was 5150.000, with a Z-value of -2.154 and a significance level of p = 0.031. These findings indicate a statistically significant difference, suggesting that females exhibit higher levels compared to males. When examining the individual indicators, including respect, equity, and inclusion, no significant differences were observed between genders. The Mann-Whitney U statistics for respect (5343.500), equity (5441.500), and inclusion (5610.500) all yielded p-values greater than 0.05, indicating no statistically significant differences between males and females in these dimensions individually. While females tended to have higher mean ranks across all three indicators, these differences were not significant.

In summary, the combined values education score showed a significant gender difference, favoring females, but the individual components (respect, equity, and inclusión) did not demonstrate statistically significant differences. This suggests that while females generally perform better in the aggregated measure of sport values, these differences may not be pronounced within each specific dimension. Further investigation into the combined effect of these indicators may provide deeper insights into gender-based variations in sport values.

Discussion

The findings of this study provide valuable insights into the measurement and manifestation of REI in physical education among children aged 8–12 years. These results have significant practical implications for physical education teachers, as they highlight the need for intentional strategies to incorporate these values into everyday teaching practices. Teachers can utilize the validated instrument to assess the baseline values of respect, equity, and inclusion in their classes, identify areas for improvement, and tailor their instructional strategies accordingly. The REI instrument can serve as a valuable diagnostic tool for PE teachers, enabling them to identify inequities in classroom climate and adapt their pedagogical strategy accordingly. This is particularly relevant given the evidence that teacher language and classroom climate significantly shape students' perceptions of equity and inclusion (Guerrero & Guerrero Puerta, 2023; Thorjussen & Wilhelmsen, 2024).

For example, teachers can design collaborative activities that promote equity by ensuring all students have equal opportunities to participate and succeed. Respect can be cultivated through discussions on sportsmanship and role-playing exercises that emphasize empathy and care for others. Inclusion can be reinforced by creating an environment where diversity is celebrated, and all students feel valued regardless of their abilities or backgrounds. The higher scores observed for equity align with research emphasizing its role in creating fair opportunities and reducing barriers to participation (Farias et al., 2017). The prioritization of equity reflects the effectiveness of efforts to create fair environments that reduce barriers and promote access for all children (UNESCO, 2019).

Gender differences in REI in physical education were evident, with females scoring significantly higher in overall values than males. This finding resonates with prior studies suggesting that females tend to exhibit stronger social and emotional awareness, particularly in collaborative and inclusive contexts

(Muñoz-Llerena et al., 2021). However, when the dimensions were analyzed individually, such as respect, equity, and inclusión, no significant gender differences were found. This highlights the complexity of gender-based variations, suggesting that aggregated scores may reveal trends that are not evident at the component level. Further investigation into the sociocultural factors influencing these trends is necessary. The result showing that female students scored higher on the overall REI scale is consistent with recent studies indicating that girls generally hold more positive attitudes toward inclusive practices in physical education (Nemček, 2022; Ribeiro et al., 2024). Moreover, contemporary research highlights persistent gendered stereotypes in PE, where boys are positioned as more competitive and girls as more collaborative (Castro-García et al., 2025; Joy et al., 2021). These patterns suggest that gender differences in REI may be shaped not only by individual dispositions but also by broader cultural constructions of gender within PE settings.

The categorization of REI provided additional depth, revealing that a higher proportion of females fell into the "Very Good" category, whereas males were more evenly distributed across lower categories. This suggests that females may internalize and demonstrate these values more consistently. This trend may be shaped by societal expectations that encourage empathy and collaboration more prominently in girls (Holt et al., 2017, 2020). Addressing this imbalance requires strategies that engage boys in reflective practices and activities emphasizing respect, equity, and inclusion.

The CFA validated the instrument's structure, confirming its construct validity with moderate communalities and robust factor loadings. The three factors align with theoretical expectations and support the instrument's utility in educational contexts. While the KMO value of 0.707 and the significant Bartlett's test confirmed data adequacy for CFA, the explained variance of 56.875% indicates potential for refinement. Increasing the explanatory power of the factors through iterative revisions can enhance the instrument's effectiveness (Grimley et al., 2004). Reliability testing yielded a Cronbach's Alpha of 0.649, indicating acceptable internal consistency, though certain items, such as Inclusion-1, showed lower communalities. These results suggest that while the instrument is reliable, there is room for improvement. Refining items with lower contributions and conducting additional pilot tests can further enhance the instrument's reliability while preserving its relevance and age appropriateness (Bellini & Hopf, 2007).

This study has several limitations. First, the sample was drawn from a specific geographical and cultural context, which may limit the generalizability of the findings. Future studies should include participants from diverse cultural and socioeconomic backgrounds to enhance the applicability of the results. Second, the reliance on self-reported data introduces the potential for social desirability bias, particularly in young children. Incorporating observational or third-party assessments could provide a more holistic understanding of respect, equity, and inclusion. Lastly, the study focused solely on three indicators without considering other potential dimensions of physical education values, such as teamwork or perseverance, which could broaden the scope of assessment.

Future research should address these limitations by expanding the sample to include children from diverse cultural and socioeconomic backgrounds, thereby ensuring broader generalizability. Longitudinal studies could provide insights into how respect, equity, and inclusion evolve and are influenced by educational and environmental interventions. Additionally, qualitative approaches, such as interviews or focus groups, could complement the quantitative data by capturing nuanced perspectives on how children internalize these values. Finally, exploring the influence of external factors, such as family dynamics, peer relationships, and community support, could shed light on how these values are nurtured and reinforced. Such efforts would contribute to creating more inclusive, equitable, and respectful educational environments.

Conclusions

This study underscores the importance of fostering respect, equity, and inclusion in physical education for children aged 8–12 years through a validated and reliable measurement tool. The findings highlight significant gender differences in overall values (REI), with females scoring higher, while no substantial differences were found in the individual dimensions of respect, equity, and inclusion. The instrument demonstrated robust psychometric properties, supporting its utility in assessing these critical values.

However, limitations such as the cultural specificity of the sample and reliance on self-reported data suggest the need for further refinement and broader application. Future research should expand the instrument's scope, explore longitudinal impacts, and integrate diverse methodologies to deepen the understanding of how these values manifest and evolve in various contexts. These efforts can inform targeted interventions, contributing to more inclusive, equitable, and respectful educational environments.

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References

Abdillah, M. H., Tentama, F., & Suwandi, G. F. (2020). Bullying On Students In Indonesia. International Journal of Scientific & Technology Research, 9(2). https://doi.org/10.1080/00131911.2011.598917

Anira, A., Syarifatunnisa, S., Ma'mun, A., & Rahayu, N. I. (2021). Integrating Life Skills through Physical Activities Programs. Jurnal Pendidikan Jasmani Dan Olahraga, 6(1), 68–74. https://doi.org/10.17509/jpjo.v6i1.26621

Arini, F. D. (2021). Bullying-Related Social Skills Instrument: within the Extracurricular Activities in Educational Context. KOLOKIUM Jurnal Pendidikan Luar Sekolah, 9(2), 114–120. https://doi.org/10.24036/kolokium-pls.v9i2.491

Arora, K., & Wolbring, G. (2022). Kinesiology, Physical Activity, Physical Education, and Sports through an Equity/Equality, Diversity, and Inclusion (EDI) Lens: A Scoping Review. Sports, 10(4), 55. https://doi.org/10.3390/sports10040055

Bellini, S., & Hopf, A. (2007). The Development of the Autism Social Skills Profile. Focus on Autism and Other Developmental Disabilities, 22(2), 80–87. https://doi.org/10.1177/10883576070220020801

Bowes, L., Aryani, F., Ohan, F., Haryanti, R. H., Winarna, S., Arsianto, Y., Budiyawati, H., Widowati, E., Saraswati, R., Kristianto, Y., Suryani, Y. E., Ulum, D. F., & Minnick, E. (2019). The development and pilot testing of an adolescent bullying intervention in Indonesia–the ROOTS Indonesia program. Global Health Action, 12(1). https://doi.org/10.1080/16549716.2019.1656905

Buzi, E., Jarani, J., Türegün, M., Macaro, A., & Isidori, E. (2020). Values-based education: The development of a questionnaire. Journal of Human Sport and Exercise, 15(2). https://doi.org/10.14198/jhse.2020.152.17

Castro-García, M., Barquero-Ruiz, C., & López-Villar, C. (2025). Are Gender Stereotypes Still Prevalent in Physical Education? Spanish Teachers' and Students' Beliefs and Attitudes Toward Gender Equity. Journal of Teaching in Physical Education, 44(1), 111–122. https://doi.org/10.1123/jtpe.2023-0352

Côté, J., & Hancock, D. J. (2016). Evidence-based policies for youth sport programmes. International Journal of Sport Policy, 8(1), 51–65. https://doi.org/10.1080/19406940.2014.919338

Cronin, L., Allen, J., Ellison, P., Marchant, D., Levy, A., & Harwood, C. (2021). Development and initial validation of the life skills ability scale for higher education students. Studies in Higher Education, 46(6), 1011–1024. https://doi.org/10.1080/03075079.2019.1672641

Cronin, L., Greenfield, R., & Maher, A. (2023). A Qualitative Investigation of Teachers' Experiences of Life Skills Development in Physical Education. Qualitative Research in Sport, Exercise and Health. https://doi.org/10.1080/2159676X.2023.2222774

Deng, C., & Legge, M. (2022). A qualitative case study of primary classroom teachers' perceived valu e of physical education in New Zealand. Sport, Education and Society, 29(2), 180–193. https://doi.org/10.1080/13573322.2022.2125948

Dixon, P., & Woolner, P. (2016). Quantitative Data Analysis: Using SPSS. Research Methods in Educational Leadership & Management, 340–362. https://doi.org/10.4135/9781473957695.n23

Farias, C., Hastie, P. A., & Mesquita, I. (2017). Towards a more equitable and inclusive learning environment in Sport Education: results of an action research-based intervention. Sport, Education and Society, 22(4), 460–476. https://doi.org/10.1080/13573322.2015.1040752

Grimley, M., Morris, S., Rayner, S., & Riding, R. (2004). Supporting school improvement: the development of a scale for assessing pupils' emotional and behavioural development. Assessment in Education: Principles, Policy & Practice, 11(3), 273–300. https://doi.org/10.1080/0969594042000304591

Guerrero, M. A., & Guerrero Puerta, L. (2023). Advancing Gender Equality in Schools through Inclusive Physical Education and Teaching Training: A Systematic Review. Societies, 13(3), 64. https://doi.org/10.3390/soc13030064

Hanifah, L., Nasrulloh, N., & Sufyan, D. L. (2023). Sedentary Behavior and Lack of Physical Activity among Children in Indonesia. In Children (Vol. 10, Issue 8). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/children10081283

Hartati, S., Safitri, D., Marini, A., & Wahyudi, A. (2020). Bullying Behavior in Early Childhood: Study at Early Childhood Education Institution in East Jakarta in Indonesia. 12(1), 55–63. http://www.iratde.com

Hjort, R. L. N., & Agergaard, S. (2022). Sustaining Equality and Equity. A Scoping Review of Interventions Directed towards Promoting Access to Leisure Time Physical Activity for Children and Youth. In International Journal of Environmental Research and Public Health (Vol. 19, Issue 3). MDPI. https://doi.org/10.3390/ijerph19031235

Holt, N. L., Deal, C. J., & Pankow, K. (2020). Positive Youth Development Through Sport. Handbook of Sport Psychology. Handbook of Sport Psychology, I, 429–446. https://sci-hub.se/10.1002/9781119568124.ch20

Holt, N. L., Neely, K. C., Slater, L. G., Camiré, M., Côté, J., Fraser-Thomas, J., Macdonald, D., Strachan, L., & Tamminen, K. A. (2017). A grounded theory of positive youth development through sport based on results from a qualitative meta-study. International Review of Sport and Exercise Psychology, 10(1), 1–49. https://doi.org/10.1080/1750984X.2016.1180704

Indonesia, A. H. K. (2022). The 2022 Indonesia'S Report Card on Physical Activity for Children and Adolescents. https://www.activehealthykids.org/indonesia/

IOC. (2016a). Delivering OVEP : a practical guide to Olympic values education (2nd ed.). International Olympic Committee. https://www.icsspe.org/system/files/Delivering%20OVEP%20-%20Practical%20Guide%20to%20Olympic%20Values%20Education.pdf

IOC. (2016b). The Fundamentals of Olympic Values Education (Issue 2nd edition). https://www.icsspe.org/system/files/The Fundamentals of Olympic Values Education.pdf

Joy, P., Zahavich, J. B. L., & Kirk, S. F. L. (2021). Gendered bodies and physical education (PE) participation: exploring t he experiences of adolescent students and PE teachers in Nova Scotia. Journal of Gender Studies, 30(6), 663–675. https://doi.org/10.1080/09589236.2021.1937080

Kendellen, K., Camiré, M., Bean, C. N., Forneris, T., & Thompson, J. (2016). Integrating life skills into Golf Canada's youth programs: Insights into a successful research to practice partnership. Journal of Sport Psychology in Action, 8(1), 34–46. https://doi.org/10.1080/21520704.2016.1205699

Kondo, T. (2022). Why Do Young Children Not Answer "I Don't Know"? Question Format, Explanations, and Confirmation of Their Answers. The Japanese Journal of Educational Psychology, 70(1), 1–18. https://doi.org/10.5926/jjep.70.1

Lee, Y., & Wright, P. M. (2024). Bridging the Core Values of Martial Arts and Social–Emotional Learning in Physical Education. Strategies, 37(1), 37–40. https://doi.org/10.1080/08924562.2023.2277112

Montenegro Rueda, M., & Fernández-Cerero, J. (2023). El deporte inclusivo: Un camino hacia la equidad y la igualdad de oportunidades (Inclusive sport: A pathway to equity and equal opportunities). Retos, 51, 356–364. https://doi.org/10.47197/retos.v51.100592

Muñoz-Llerena, A., Pedrero, M. N., Flores-Aguilar, G., & López-Meneses, E. (2021). Design of a Methodological Intervention for Developing Respect, Inclusion and Equality in Physical Education. Sustainability, 14(1), 390. https://doi.org/10.3390/su14010390

Mustafa, P. S., Suherman, W. S., Sumarjo, S., Nurhidayah, D., Lufthansa, L., & Anugrah, T. (2024). Analysis of design and implementation of physical education curriculum in primary school: A literature study. Retos, 60, 320–331. https://doi.org/10.47197/retos.v60.107950

Nemček, D. (2022). Children's Attitudes towards Inclusion of Visually Impaired Students i n Physical Education Classes: Gender Differences. Physical Education Theory and Methodology, 22(3), 423–429. https://doi.org/10.17309/tmfv.2022.3.18

Noboru, T., Amalia, E., Hernandez, P. M. R., Nurbaiti, L., Affarah, W. S., Nonaka, D., Takeuchi, R., Kadriyan, H., & Kobayashi, J. (2021). School-based education to prevent bullying in high schools in Indonesia. Pediatrics International, 63(4), 459–468. https://doi.org/10.1111/ped.14475

Nunik, K. (2015). Prilaku Berisiko Kesehatan pada Pelajar SMP dan SMA di Indonesia. GSHS Fact Sheet National Bahasa Indonesia. https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/indonesia/gshs/gshs-2015-indonesia-report-bahasa.pdf?sfvrsn=eb05c71c_2&download=true

Osborne, R., & Egan, C. A. (2023). Leveraging Recess and Physical Education to Promote Social–Emotional Learning. Journal of Physical Education, Recreation & Dance, 94(8), 9–13. https://doi.org/10.1080/07303084.2023.2244038

Owen, N. (2020). Sedentary Behavior and Health. In Sedentary Behavior and Health. https://doi.org/10.5040/9781492595861.part-002

Pan, M., & Hsu, W.-T. (2024). Examining students' tripartite efficacy beliefs in physical education through a teaching personal and social responsibility intervention. The Journal of Educational Research, 1–11. https://doi.org/10.1080/00220671.2024.2329585

Relawan, S. (2023). Kasus Bullying di Sekolah Meningkat, KPAI Sebut Ada 2.355 Kasus Pelanggaran Perlindungan Anak Selama 2023. Sekolah Relawan. URL: https://sekolahrelawan.org/artikel/kasus-bullying-di-sekolah-meningkat-kpai-sebut-ada-2355-kasus-pelanggaran-perlindungan-anak-selama-2023

Ribeiro, E. P. P., Mesquita, I. M. R., & Farias, C. F. G. (2024). 'No One Is Left Behind?': A Mixed-Methods Case Study of Equity and Inclusion in Physical Education Teacher Education. Education Sciences, 14(7), 776. https://doi.org/10.3390/educsci14070776

Rojo-Ramos, J., Manzano-Redondo, F., Adsuar, J. C., Acevedo-Duque, Á., Gomez-Paniagua, S., & Barrios-Fernandez, S. (2022). Spanish Physical Education Teachers' Perceptions about Their Preparati on for Inclusive Education. Children, 9(1), 108. https://doi.org/10.3390/children9010108

Samarakkody, D. C., Fernando, D. N., Perera, H., McClure, R. J., & De Silva, H. (2010). The Child Behaviour Assessment Instrument: development and validation of a measure to screen for externalising child behavioural problems in community setting. International Journal of Mental Health Systems, 4(1), 13. https://doi.org/10.1186/1752-4458-4-13

Stewart-Brown, S., & Edmunds, L. (2003). Assessing emotional and social competence in primary school and early years settings. DfES. https://ora.ox.ac.uk/objects/uuid:0856c08a-e0e8-4570-b175-29b80c881cd9/files/ma82314d3e02cc48ba3616534eb8406df

Sum, R. K. W., Ha, A. S. C., Cheng, C. F., Chung, P. K., Yiu, K. T. C., Kuo, C. C., Yu, C. K., & Wang, F. J. (2016). Construction and Validation of a Perceived Physical Literacy Instrumen t for Physical Education Teachers. PLOS ONE, 11(5), e0155610. https://doi.org/10.1371/journal.pone.0155610

Tarantino, G., Makopoulou, K., & Neville, R. D. (2022). Inclusion of children with special educational needs and disabilities in physical education: A systematic review and meta-analysis of teache rs' attitudes. Educational Research Review, 36, 100456. https://doi.org/10.1016/j.edurev.2022.100456

Tarantino, G., & Neville, R. D. (2023). Inclusion of children with disabilities and special educational needs in physical education: an exploratory study of factors associated with Irish teachers' attitudes, self-efficacy, and school context. Irish Educational Studies, 42(4), 487–505. https://doi.org/10.1080/03323315.2023.2260999

Thorjussen, I. M., & Wilhelmsen, T. (2024). Discourses of resistance: pre-service teachers' reflections on the cha llenges of inclusion in physical education. Sport, Education and Society, 30(4), 512–525. https://doi.org/10.1080/13573322.2024.2329570

Tredoux, C. G., Noor, N. M., & de Paulo, L. (2009). Quantitative measures of respect and social inclusion in children: overview and recommendations. Effective Education, 1(2), 169–186. https://doi.org/10.1080/19415530903522568

UNESCO. (2016). Innovative Education for Well-Rounded Development. URL: https://www.gcedclearinghouse.org/sites/default/files/resources/246351e.pdf

UNESCO. (2019). Values Education through Sports. URL: https://unesdoc.unesco.org/ark:/48223/pf0000372361

UNESCO, WADA, International Fair Play Committee, Olympic Foundation for Culture and Heritage, ICSSPE, & Agitos Foundation. (2019). Sport values in every classroom: teaching respect, equity and inclusion to 8-12 year-old students. UNESCO, OFCH, Agitos Foundation, WADA, ICSSPE/CIEPSS, CIFP. URL: https://library.olympics.com/Default/doc/SYRACUSE/207018/sport-values-in-every-classroom-teaching-respect-equity-and-inclusion-to-8-12-year-old-students-unes

United Nation. (2015). THE 17 GOALS. United Nations. URL: https://sdgs.un.org/goals

Verma, J. P. (2013). Data analysis in management with SPSS software. In Data Analysis in Management with SPSS Software. https://doi.org/10.1007/978-81-322-0786-3

WHO. (2023, October). Youth violence. World Health Organization. URL: https://www.who.int/news-room/fact-sheets/detail/youth-violence

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