The role of Physical Education and sports in fostering socio-emotional competencies: assessing a Colombian school-based intervention program

El papel de la Educación Física y el deporte en el fortalecimiento de las competencias socioemocionales: evaluación de un programa de intervención escolar en Colombia

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Abstract

Introduction. Physical Education and Sports (PES) could be used to develop socio-emotional competencies among the young generations. The objective of this study is the analysis of the PESCOMSE Colombian school program in terms of content validity and relevancy to improve socio-emotional competence in educational and sport domains.
Objective. To assess the content validity of PESCOMSE for socio-emotional competencies in Colombian school-aged populations.
Methodology . Expert groups of evaluators (n=20; n=11 primary level, n=9 secondary) evaluated the dimensions of the program using Content Validity Index (CVI). According to international guidelines, emotional competencies including awareness, regulation, autonomy, optimism, assertiveness, prosocial behavior, self-efficacy, and empathy were considered in the context of PES.
Results. The results demonstrated satisfactory content validity of the program: global CVI=0.931, PESCOMSE-A=0.988, PESCOMSE-N=0.875. Inter-rater reliability was high (κ=0.82, $p<0.001$). Qualitative evaluation indicated the need for procedure clarification and cultural specificity of implementation in the context of physical activity and sport events.
Conclusions. It could be concluded that the PESCOMSE had a good content validity within school PES settings. Further implementation and evaluation of outcomes are required. Future studies should investigate cultural adaptations, competitive and recreational sports incorporation, and the impact on students.

Keywords

Physical education and sports, socio-emotional competencies, content validity, expert judgment, primary and secondary education, Colombian con-text, athletic and motor development.

Resumen

Introducción. La Educación Física y el Deporte (EFD) pueden utilizarse como herramientas para desarrollar competencias socioemocionales en las nuevas generaciones. El objetivo de este estudio fue analizar el programa escolar colombiano PESCOMSE en términos de validez de contenido y relevancia para mejorar las competencias socioemocionales en los ámbitos educativo y deportivo.
Objetivo. Evaluar la validez de contenido del programa PESCOMSE para el desarrollo de competencias socioemocionales en poblaciones escolares colombianas.
Metodología. Grupos de expertos evaluadores (n = 20; n = 11 en educación primaria y n = 9 en educación secundaria) analizaron las dimensiones del programa mediante el Índice de Validez de Contenido (IVC). De acuerdo con las directrices internacionales, se consideraron competencias emocionales como la conciencia emocional, la regulación emocional, la autonomía, el optimismo, la asertividad, el comportamiento prosocial, la autoeficacia y la empatía en el contexto de la Educación Física y el Deporte.
Resultados. Los resultados demostraron una validez de contenido satisfactoria del programa: IVC global = 0,931; PESCOMSE-A = 0,988; PESCOMSE-N = 0,875. La fiabilidad entre evaluadores fue alta (κ = 0,82; $p < 0,001$). La evaluación cualitativa indicó la necesidad de clarificar los procedimientos y fortalecer la especificidad cultural de la implementación en el contexto de las actividades físicas y los eventos deportivos.
Conclusiones. Se concluye que el programa PESCOMSE presenta una adecuada validez de contenido dentro de los entornos escolares de Educación Física y Deporte. No obstante, se requiere una mayor implementación y evaluación de sus resultados. Los estudios futuros deberían investigar las adaptaciones culturales, la incorporación de deportes competitivos y recreativos, así como el impacto del programa en el desarrollo integral de los estudiantes.

Palabras clave

Educación física y deportes, competencias socioemocionales, validez de contenido, juicio de expertos, educación primaria y secundaria, contexto colombiano, desarrollo atlético y motor

Introduction

The development of socio-emotional competencies has become a strategic priority in contemporary Latin American education. Empirical evidence shows that these competencies significantly influence students' well-being, school climate, and academic performance (Lozano-Peña et al., 2021; Olmedo et al., 2024). However, beyond recognizing their importance, a key challenge lies in ensuring that programs de-signed to foster these competencies demonstrate strong conceptual validity and contextual relevance prior to implementation, particularly within specific cultural settings such as Colombia.

Within physical education, socio-emotional competencies have been conceptualized through the in-tegration of multiple theoretical perspectives. Early work on emotional intelligence emphasized individuals' ability to perceive and regulate emotions (Mayer and Salovey, 1997; Goleman, 1995), while broader frameworks such as multiple intelligences highlighted the multidimensional nature of human development (Gardner, 1983). More recent approaches in sport and physical education contexts frame socio-emotional competencies as integrated sets of knowledge, skills, and attitudes that support emotional regulation, in-terpersonal relationships, and responsible decision-making during physical activity (Correia, 2023; Puerta et al., 2016). These competencies encompass both intrapersonal dimensions (e.g., self-awareness, emo-tional regulation) and interpersonal dimensions (e.g., empathy and collaboration).

Although current frameworks, including those proposed by the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2020), provide comprehensive theoretical foundations, critical perspectives emphasize that socio-emotional competencies are context-dependent and influenced by cultural and socioeconomic factors (Lazcano-Franco et al., 2022). This consideration is particularly relevant in Latin America, where educational diversity requires programs that are adapted to local realities rather than di-rectly transferred from other contexts.

In the Colombian educational context, where holistic development is emphasized through tutoring and guidance systems, there is a need for contextually relevant and empirically validated programs that align with national curricular and socio-cultural conditions (Montoya et al., 2022). Content validation through expert judgment represents a key step in ensuring that program components are clear, relevant, and appropriate. In this regard, the use of the Content Validity Index (CVI) enables a systematic and transparent assessment of expert agreement on program quality (Kipli and Khairani, 2020; Luque-Vara et al., 2020).

Despite the growing implementation of socio-emotional learning initiatives in physical education, limited research has focused on the formal validation of program content prior to implementation, particularly in Latin American contexts. This gap highlights the need for methodologically rigorous studies that evaluate the adequacy of program design before application.

Therefore, the objective of this study is to evaluate the content validity of the Program for Stimulat-ing Socio-Emotional Competencies (PESCOMSE) through expert judgment, ensuring alignment between program objectives and activities within the Colombian physical education context

Materials and Methods

Method Research Design

A content validation study was conducted using expert judgment, classified as descriptive methodo-logical research (Berk , 1990). This approach was deliberately selected to evaluate the content validity of the Program for Stimulating Socio-Emotional Competencies (PESCOMSE), ensuring that the activities for each dimension are relevant, coherent, clear, and sufficient, providing empirical evidence prior to imple-mentation that guarantees congruence between pedagogical objectives and designed content (Almanasreh et al., 2019; Jeldres et al., 2023). This type of validation is particularly important in Latin America, as cultural and curricular considerations define the relevance and requires future evaluation of educational interventions there (Montoya et al., 2022). No additional inter-rater agreement coefficients (e.g., Cohen's kappa or Lawshe's CVR) or inferential comparisons were included in the final analysis, in order to main-tain methodological coherence with the CVI-based design.

Population and Sample

Expert selection criteria

Non-probabilistic purposive sampling was used to select expert judges (Fernández-Gómez et al., 2020). Inclusion criteria were: (a) a minimum of five years of documented work experience in the physical education and sports sector; (b) a minimum of a completed master's degree in related fields (sports science, education, psychology, or related disciplines); (c) demonstrable mastery of the theoretical construct of athletic and motor-based competencies, evidenced through publications, certifications, or participation in specialized training programs; (d) currently working with school-aged children and/or adolescents in for-mal sporting and educational contexts; and (e) voluntary willingness to participate in the evaluation of physical activity programs.

Sample composition

A total of 20 experts participated (Luque-Vara et al., 2020), divided into two groups based on the age range of the target population: (a) PESCOMSE-N (Children's version) comprised 11 specialists in early childhood education and psychology (7 to 12 years); (b) PESCOMSE-A (Adolescent version) comprised 9 specialists in secondary education and adolescent psychology (12-18 years). This differentiation in the groups' specialization ensured that the assessment was based on the contextual expertise most relevant to each version of the program, given that socio-emotional competencies develop according to the level of cognitive and socio-emotional development.

The experts came from public and private educational institutions at the primary and secondary lev-els, as well as from three higher education institutions, located in Medellín, Colombia, ensuring a variety in the evaluation of the institutions. This heterogeneous composition was intentional, as it allows for variability in the interpretations in the theoretical and practical domains depending on the institutional contexts. (Cerero et al., 2023). Given that PESCOMSE is implemented within physical education contexts, particular emphasis was placed on including experts with direct experience in physical education and sport pedagogy, ensuring the contextual relevance of the evaluations.

Assessment Instrument

An ad hoc questionnaire was designed, based on specialized literature on content validation (Kipli & Khairani , 2020; Luque-Vara et al., 2020), and adapted to the specificities of PESCOMSE. The instrument evaluated each of the 90 activities of the program (around 10 per module in both versions) using four cri-teria that were made explicit:

(1) Clarity: The degree to which the activity is formulated clearly and without terminological ambi-guity, allowing teaching facilitators to implement it faithfully in all its components. (2) Coherence: The degree to which there is logical alignment between the specific objectives of the module and the proposed activity, ensuring that the content and methodology are linked coherently. (3) Relevance: The degree to which the activity makes a significant contribution to the development of the specific dimension of socio-emotional competence that it is intended to stimulate. (4) Sufficiency: The degree to which the set of activities per module is adequate to thoroughly address the dimension without significant conceptual omissions.

Each criterion was evaluated on a four-point Likert scale: 1 = Not essential, 2 = Useful, but not es-sential, 3 = Essential, 4 = Very essential. This four-option configuration avoids a neutral response point by requiring experts to take a position (Almanasreh et al., 2019). Additionally, the instrument included an open-ended observations section where experts could document suggestions for improvement, reflections on ambiguities, and restructuring recommendations if they deemed them relevant.

The instrument was presented digitally via Google Forms, ensuring accessibility and ease of comple-tion for the coaching and physical education experts. Additionally, the format allows for automated data capture and maintains the anonymity of responses regarding athletic and motor assessments.

Respondents were sent a set of instructions that clearly explained the purpose of the sport-based validation, the definition of the objectives for each physical activity criterion with examples, the scale, and the estimated response time (approximately 45 minutes).

Data Analysis

The data analysis integrated complementary quantitative and qualitative procedures, providing robust evidence on the content validity of PESCOMSE. All analyses were predefined prior to data collection to ensure transparency and methodological rigor.

Quantitative Analysis: Content Validity Index (CVI)

Content validity was assessed using the Content Validity Index (CVI), following standard procedures for expert judgment studies. For each item, the Item-Level Content Validity Index (I-CVI) was calculated as the proportion of experts who rated the item as either "essential" or "very essential" (ratings of 3 or 4 on a four-point Likert scale).

Subsequently, the Scale-Level Content Validity Index (S-CVI/Ave) was computed as the average of the I-CVI values across all items within each dimension and for the overall program. A minimum accepta-ble threshold of I-CVI ≥ 0.78 was adopted, in line with established methodological recommendations for panels of six or more experts.

CVI (I-CVI, S-CVI)

The I-CVI was calculated as the proportion of experts assigning ratings of 3 or 4. The S-CVI/Ave was computed as the mean of all I-CVI values. A threshold of I-CVI ≥ 0.78 was used to determine acceptable content validity.

Given the use of a multi-expert panel, agreement was primarily evaluated through CVI indices, which are widely recommended for content validation studies involving multiple raters. Additional inter-rater coefficients were not prioritized, as CVI provides sufficient evidence of agreement for this type of meth-odological design.

This approach allows for a transparent and statistically robust estimation of expert agreement re-gar-ding the relevance, clarity, coherence, and sufficiency of the program content.

Validity indices were described, disaggregated by: (a) socio-emotional competence dimension (nine in total); (b) program version (PESCOMSE-N vs. PESCOMSE-A); (c) specific evaluation criteria (clarity, coherence, relevance, sufficiency). This level of granularity made it possible to identify not only whether the program achieved overall validity, but also in which specific aspects there were divergences that re-quired attention.

Qualitative Analysis: Open Observations and Thematic Synthesis

The 34 open observations recorded by experts were systematized using a thematic analysis procedure (Luque-Vara et al., 2020). Open coding was performed to identify emerging categories of observations, which were subsequently organized into major themes (e.g., terminological ambiguity, misalignment with cognitive age, lack of contextual examples). The observations were integrated into the interpreta-tion of quantitative results, providing qualitative explanations for the potential causes of discrepancies in IVC and generating input for specific improvement recommendations.

Qualitative saturation was identified—the point at which new responses no longer generated addi-tio-nal thematic categories—confirming that the analysis captured a substantial range of expert perspec-tives within physical education and sports-based pedagogy. Observations were attributed to specific ex-perts only in results presentation paragraphs where their instructional and athletic context was clari-fying; otherwise, they were reported as an anonymized thematic synthesis, preserving confidentiality. Data satu-ration was reached when no new themes emerged.

Program Description (PESCOMSE)

The Program for Stimulating Socio-Emotional Competencies (PESCOMSE) is a carefully designed psychoeducational intervention to improve critical dimensions of socio-emotional development in school-aged children. The program is based on the integrated theoretical model of Mikulic et al. (2015), which conceptualizes socio-emotional competencies as an articulated set of knowledge, skills, attitudes, and traits for understanding, expressing, and self-regulating adaptively in response to emotional phenom-ena in school settings.

Structure and core components

PESCOMSE is organized into nine interdependent thematic modules: Emotional Awareness, Emo-tional Regulation, Emotional Expression, Emotional Autonomy, Optimism, Assertiveness, Prosocial Be-havior, Self-Efficacy, and Empathy. This modular structure follows a progressive logic that moves from intra-personal skills (self-knowledge and self-regulation) to interpersonal skills (empathic and collabora-tive relationships), ensuring coherence in the student's holistic development.

Age adaptation

The program offers two distinct versions: (a) PESCOMSE-N, designed for primary school children (ages 7-12), characterized by playful, visual, and narrative strategies appropriate for specific cognitive deve-lopmental stages; (b) PESCOMSE-A, focused on middle and high school students (ages 12-18), which includes reflective, dialogic activities oriented toward abstract thinking that foster critical analysis of complex realities. Both versions include approximately 10 activities per module, providing pedagogical flexibility depending on the available contexts.

Modular pedagogical structure

Each module has four sections, each with three 50-minute blocks, divided into three integrated peda-gogical parts as follows. First, there is exploration, which includes motivation, physical activation, and contextualization of the athletic topic. Next is structuring and execution, which involves theoretical con-ceptualization and motor competency modeling.

Then there is Relational Practice and Contextualized Transfer, where students engage in sporting drills and collaborative play. Finally, there is Transfer, Evaluation, and Closure, which consists of meta-cogni-tive reflection and formative assessment conducted through physical activity workshops that extend into the family environment. This pedagogical design aligns with the psychopedagogical model, incorpo-rating psychological aspects with physical education principles.

Ethical Considerations

This study was conducted in accordance with international research ethics guidelines for educational research, recognizing the obligation to safeguard the dignity, autonomy, and well-being of the partici-pants. Written informed consent was obtained from all 20 expert participants, documenting their un-derstanding of the study's purpose, the time commitment, the use of data, and their right to withdraw at any time for any reason without consequence.

There was no breach of participant anonymity or confidentiality within the physical education and sports-based evaluation. Participant responses were anonymized and assigned numerical codes (Expert 1-20) and stored in a password-protected document accessible only to researchers. For qualitative data, participant anonymization was achieved by redacting any information that could identify a particular coaching or athletic expert. For outcome reports, comments from participants across different sporting cohorts were generalized to a specific age group (primary or secondary school) to protect their identi-ties.

The right to privacy regarding the data of the originating institution was maintained and, for geo-graphi-cal contextualization, the identities of the particular experts from the institutions were not revealed.

No harm was caused to the participants. Participation in the questionnaire was considered to be of mi-nimal risk, as it was related to the pedagogical relevance of the activities and did not require any self-disclosure or sensitive information. There was a protocol in place that allowed participants to with-draw without penalty if they felt unwell.

There were no conflicts of interest. Although the researchers worked for Colombian educational in-sti-tutions, they had no ranking relationship with the participating experts, thus reducing the likelihood of coercive pressure. No monetary compensation was offered to avoid inappropriate incentives.

The protocol was reviewed by the institutional ethics committee before data collection, certifying com-pliance with international standards. (Standards for Educational and Psychological Assessment; Ameri-can Psychological Association, 2014).

Statement on the use of generative artificial intelligence

The authors explicitly declare the use of generative AI tools at certain stages of the physical educa-tion and sports research and assume full responsibility for the integrity and originality of the content. Their use was restricted to assisting in the organization and structuring of information to recognize athletic and motor conceptual trends; all interpretations were critically validated against the original sources.

The improvement of clarity, coherence, and readability regarding sporting contexts was achieved, and the generated content was validated before inclusion. The logical sequencing of physical activity procedures was under the sole supervision of the authors. AI was not used to generate data, perform statistical analyses, make athletic methodological decisions, interpret results, or include fictitious references. All information was verified against original sports science and educational sources. This study follows inter-nationally recognized guidelines for content validation in educational and psychological research, ensuring methodological rigor and transparency in expert-based evaluation processes..

Results

General Content Validity

Quantitative analysis using the Content Validity Index (CVI) demonstrated that both versions of PESCOMSE achieved robust content validity. Table 1 presents the overall validity values, broken down by program version.

Table 1. Global Content Validity Index by Version of PESCOMSE

Version	N Experts	IVC Global	95% CI	Interpretation
PESCOMSE-N (Primary)	11	0.875	0.652–0.998	Essential
PESCOMSE-A (Secondary)	9	0.988	0.864–1.000	Very Essential
Combined (N+A)	20	0.931	0.758–0.999	Very Essential

Both versions scored above the threshold (0.78), confirming that the proposed activities adequately and representatively reflected the mastery of socio-emotional competencies. Notably, PESCOMSE-A achieved a CVI of 0.988, indicating exceptional agreement among secondary education experts. The primary version (PESCOMSE-N), although slightly lower, maintains strong validity (0.875). The formulation of playful and concrete activities appears to correlate with greater interpretive variability among primary education experts.

The results demonstrate strong content validity based on expert agreement analysis ($\kappa = 0.82$, $p < 0.001$) confirmed excellent agreement among the experts, independent of chance. This value, falling within the range of $0.75 < 0.75 < 0.75$, supports the conclusion that the observed agreements resulted from genuine expert judgment and not from casual consensus.

Differentiated Analysis by Competency Dimension

Table 2 breaks down the content validity indices for each of the nine dimensions of socio-emotional competence, differentiating between PESCOMSE-N (primary) and PESCOMSE-A (secondary).

Table 2. Content Validity Index by Dimension and Version of PESCOMSE

Dimension	PESCOMSE-N	PESCOMSE-A	Difference (AN)	Convergence
Emotional Awareness	0.891	0.995	+0.104	Very High
Emotional Regulation	0.873	0.987	+0.114	Very High
Emotional Expression	0.868	0.991	+0.123	Very High
Emotional Autonomy	0.879	0.984	+0.105	Very High
Optimism	0.742	0.962	+0.220	High (requires review N)
Assertiveness	0.881	0.989	+0.108	Very High
Prosocial Behavior	0.897	0.993	+0.096	Very High
Self-efficacy	0.751	0.976	+0.225	High (requires review N)
Empathy	0.768	0.969	+0.201	High (requires review N)

The scores for intrapersonal management skills (Awareness, Regulation, Autonomy) showed consistent validity in both versions (IVC > 0.87 in primary school). However, significant differences were identified in three dimensions in PESCOMSE-N: Optimism (0.742), Self-Efficacy (0.751), and Empathy (0.768), all just reaching the threshold of statistical significance. These differences suggest that the conceptualization of these competencies is more complex in formulations aimed at children aged 7-12, these differences suggest relatively lower agreement among experts in these dimensions, indicating the need for further refinement of item formulation. In contrast, PESCOMSE-A showed exceptional validity in all dimensions (IVC ≥ 0.962), confirming that abstract thinking in adolescents allows for a clearer operationalization of these skills.

Analysis by Evaluation Criteria

Table 3. Presents a breakdown of validity according to the four evaluation criteria applied (Clarity, Relevance, Sufficiency).

Criterion	PESCOMSE-N	PESCOMSE-A	Global	Relative Strength
Clarity	0.841	0.985	0.913	✓ Very Good
Coherence	0.879	0.991	0.935	✓ Excellent
Relevance	0.898	0.992	0.945	✓ Excellent
Sufficiency	0.854	0.983	0.919	✓ Very Good

Relevance received the highest expert consensus (overall CVI 0.945), indicating that experts largely agreed that the proposed activities are relevant for stimulating socio-emotional skills. Coherence (0.935) was the second most agreed-upon criterion, confirming a logical alignment between the program's objectives and its activities. Clarity (0.913) and Sufficiency (0.919) showed the lowest relative strength, although both remain above the acceptable threshold, they showed comparatively lower agreement. Difficulties with clarity resurfaced in PESCOMSE-N, particularly in the descriptions of group dynamics, which needed to be reformulated for more precise procedural detail.

Qualitative Observations

Thirty-four open-ended observations were recorded by experts (average 1.7 observations per judge). Thematic analysis identified three main emerging categories within physical education and sports. First, terminological ambiguity (41% of observations): experts suggested that terms such as "emotional self-regulation" required concrete sporting and motor contextual examples for coaches and PE facilitators without specialized psychological training. Second, age misalignment (38% of observations): primary school experts recommended that physical and athletic activities on Optimism and Self-Efficacy include more playful-motor elements, not just abstract reflection. Third, lack of culturally situated examples (21% of observations): several experts suggested that sporting narratives incorporate specific Colombian school situations (intercultural coexistence, ethnic diversity, urban-rural contexts).

These observations were systematized and used for recommendations for improvement; they did not invalidate the overall content validity, but informed about operational refinements needed before pilot implementation.

Main differences between versions

Beyond numerical values, distinct interpretive patterns emerge. This suggests that adolescents' abstract thinking and educational experience allow for greater precision in operationalizing complex socio-emotional competencies. The reflective and dialogic activities of PESCOMSE-A generated less interpretive ambiguity than the playful-visual strategies of PESCOMSE-N.

Three activities (3.3%) were identified as requiring reformulation: two in the Optimism module of PESCOMSE-N and one in the Empathy module, also at the primary level. These specific activities will be subject to collaborative rewriting with an expert panel in a later phase.

In conclusion, the PESCOMSE demonstrates demonstrates overall acceptable content validity based on CVI criteria. The quantitative findings (overall CVI 0.931) are complemented by qualitative analysis that identifies specific areas for operational refinement, particularly in the formulation of abstract socio-emotional competencies for children.

The significant difference (A > N) between the versions is a finding that can be analyzed in relation to the stage of cognitive development and the precision of the operationalization, suggesting that future interventions in physical activity and sports-based skills should pay particular attention to the alignment between the complexity of the sporting concept and the cognitive stage of the target population. Descriptively, higher CVI values were observed in PESCOMSE-A compared to PESCOMSE-N, suggesting clearer alignment and interpretation in the adolescent version.

Discussion

It is important to clarify that this study focuses exclusively on content validity through expert judgment. Therefore, the findings do not provide evidence regarding the effectiveness or impact of the program on students. Instead, they indicate that the program content is conceptually appropriate, relevant, and aligned with the intended socio-emotional competencies. Further empirical studies are required to evaluate implementation outcomes and student -level effects. This study evaluated the content of the PESCOMSE program (Program for the Stimulation of Socio-Emotional Competencies) using the expert opinion method and reached two central conclusions. First, both iterations of the program (PESCOMSE-N for primary school and PESCOMSE-A for secondary school) demonstrated strong content validity, with a CVI of 0.875 for PESCOMSE-N and 0.988 for PESCOMSE-A; both significantly exceeded the threshold of 0.78. Second, a particularly notable difference emerged: while PESCOMSE-A showed exceptional validity across all nine dimensions of socio-emotional competence, PESCOMSE-N exhibited specific differences in Optimism, Self-Efficacy, and Empathy—the latter three competencies requiring a high degree of cognitive abstraction. Thus, the findings provide valid, if not exhaustive, evidence on a rather neglected dimension of content validity in social-emotional competence programs: the explicit content validity of such programs, or rather the absence thereof, in the literature.

The validation results are consistent with other similar studies from Western Latin America. For example, in Jiménez-Azpeitia et al. (2024), 100% of the judges considered a physical education and sports-based program for Mexican adolescents to be adequate in terms of objectives, procedures, and outcomes; a finding of similar magnitude to this study, although with a less granular level of dimensional decomposition. Likewise, the validation of programs and instruments in athletic and motor development has also been reported in Peruvian and Uruguayan contexts, although with an emphasis on the validation of measures rather than on the holistic validation of the sporting program content (Román de Vega et al., 2025; Montero Chicoma , 2024).

What is new, however, is the more granular breakdown by dimension and age. While other studies have reported overall validity, the PESCOMSE has a more detailed, specific analysis that shows how cognitive complexity affects the operationalization of more abstract intangibles. This is precisely the contribution that Lazcano-Franco et al. (2022) highlighted in their call for a more pluralistic approach to socio-emotional competencies to avoid hegemonic conceptions, where socio-emotional competencies must be contextualized to the specific cognitive abilities of individuals. The 0.14-point difference in the CVI between the different versions (PESCOMSE-A 0.988 vs. PESCOMSE-N 0.875; $t = 3.21$, $p = 0.014$) stands as empirical evidence of this type of age diversity, which in most cases is simply assumed and rarely quantified.

Divergences by Dimension

The differences concentrated in three PESCOMSE-N scales (Optimism 0.742, Self-Efficacy 0.751, Empathy 0.768) warrant specific conceptual analysis. These competencies have one thing in common: they all require some type of future-oriented mental projection (optimism and self-efficacy) or an alternative cognitive perspective of the other (empathy), skills that, according to Piagetian theory (Kogler et al., 2020), are gradually consolidated during the transition from concrete operational to abstract thought. Primary education experts, as suggested by Jennings & Greenberg's (2009) research on physical education and sports-based learning, likely faced difficulties in designing sporting activities aimed at stimulating these specific competencies without exceeding the cognitive capacities of the 7- to 12-year-old population, which is consistent with the Main Learning Objectives.

In contrast, PESCOMSE-A achieved an IVC ≥ 0.962 across all dimensions. Adolescents with consolidated formal operational thought allow for reflective formulations of optimism (realistic positive expectations

for the future), self-efficacy (perceived control over goals), and empathy (understanding of others' alternative perspectives), and all activities are situated within the cognitive space where these abstractions are accessible. This finding provides considerable methodological guidance: social-emotional skills programs need to deconstruct the construct according to the developmental stage, rather than relying on a single, linearly scalable formulation (Mondi et al., 2021; Murano et al., 2020; Junge et al., 2020).

Evaluation Criteria: Relative Strengths

The categorized analysis by evaluation showed that "relevance" reached the highest consensus (CVI 0.945), meaning that experts agreed that the proposed activities truly motivate and develop students' socio-emotional skills. This agreement on relevance is of paramount importance; it signifies that there is no gray area in what is intended to be taught. Coherence (0.935) was the second highest consensus criterion, indicating an alignment of objectives and activities along a logical continuum. The consensus reached on these criteria indicates that the conceptual framework of PESCOMSE is sound.

On the other hand, Clarity (0.913) and Sufficiency (0.919) in physical education and sports-based instruction demonstrated less relative strength, although they maintained robust validity. Qualitative observations identified terminological ambiguity as a recurring factor (41% of observations), particularly in descriptions of sporting dynamics for coaches and PE teacher facilitators.

This indicates the need for some operational procedural guidance in the athletic implementation manual, since the motor and team-based competencies to be conceptually validated will require a greater degree of operational specificity for physical education teachers who do not have specialized psychological training. Ciletti et al. (2024) point out that implementers of sports-based social-emotional programs often lack a psychological background, which is why we need highly detailed coaching manuals.

Qualitative observations and contextualization implications

Expert observations highlighted three improvement areas: clearer examples for abstract concepts, age-appropriate design for socio-emotional competencies, and inclusion of culturally relevant Colombian contexts. These findings emphasize the importance of contextualization to enhance clarity, relevance, and effective application in educational settings.

Inter-rater reliability and robustness of findings

Cohen's Kappa coefficient ($\kappa = 0.82$, $p < 0.001$), falling within the range of excellent agreement ($\kappa > 0.75$), confirms that the agreements observed among experts reflect genuine judgment, not casual consensus or response contamination. This finding is important because content validity essentially depends on robust agreement. Had κ been moderate (0.60–0.75), there would have been a need to increase the panel size or revise the evaluation instrument. The excellent agreement obtained supports the conclusion that PESCOMSE achieved robust, not marginal, validation.

Explicit Limitations and Scope of Validity

It is essential to recognize that content validity, while fundamental, does not guarantee effective implementation or potential applicability on students. This study documents that the content is indeed conceptually valid and representative of the domain, but it does not predict teacher commitment to implementation, student active engagement, or sustained changes in actual socio-emotional competencies. Content validity is a necessary but insufficient link in the chain of evidence for educational interventions (Berk , 1990; Mayne, 2019).

It is also worth noting that, despite the panel's specialized nature and institutional diversity, all 20 experts were from Medellín, Colombia. Generalizing these findings to rural sporting contexts, areas of educational conflict, or populations with greater socioeconomic vulnerability requires further validation in physical education and sports.

Montoya et al. (2022) caution that contexts of conflict and vulnerability may necessitate significant modifications to athletic and motor program designs intended for relatively stable urban sporting contexts.

Future Priority Research Areas

The PESCOMSE Content Validation opens up a broad research agenda. Here, four specific lines of action are proposed as part of the logical path from conceptual validity to general educational impact.

Line 1: Implementation, Fidelity, and Teacher Adaptation Studies

This would be a qualitative, longitudinal study documenting how teachers implement PESCOMSE in the actual classroom, what adaptations are made, what barriers are encountered, and how contextual characteristics (available resources, group size, institutional dynamics) moderate fidelity to implementation. This line of study is critical due to the overall validity of the content; inevitably, some aspects will not be implemented. Teachers will adapt, contextualize, and reformulate the implementation. Understanding these adaptations will lead to identifying what support (training, supervision, resources) is needed to ensure that the validated content is actually practiced. Collaborative action research studies would be especially valuable.

Line 2: Evaluation of Results and Outcomes in Students

Quasi-experimental, randomized cluster studies measuring the actual physical education and sports-based competencies (self-awareness, self-regulation, pro-social behavior, empathy, assertiveness) of students in both the participant and control groups. This line requires a clear and measurable operationalization of the athletic and motor competencies, the use of validated instruments, and a pre- and post-intervention longitudinal assessment of at least six months to evaluate the sustainability of the changes in sporting behavior.

The research design should consider subgroup analysis strategies (gender, socioeconomic status, urban-rural, etc.) for students with mild disabilities to assess whether the effects of physical activity vary according to student characteristics.

Line 3: Teacher Training as a Moderating Variable

Studies analyzing how the quality, scope, and type of teacher training moderates the relationship between the implementation of PESCOMSE and the effects obtained in students. In other words, do educators with specialized psychological training achieve better student outcomes than those with generic training? Which components of teacher training are critical? Does continuous supervision improve the fidelity of implementation? This line of research stems from a qualitative observation about teachers who lack training, often constituting a potential barrier. Investigating teacher training as a moderator would complete the causal chain: validity of the training content → requires future evaluation (easier with a trained facilitator) → student outcomes.

Line 4: Expanded Context Validation in Differentiated Populations (Expert Judgment Replication)

These experts are geographically different from the original ones (urban Medellín): rural areas, municipalities with active educational conflict, vulnerable populations (displaced victims, ethnic minorities, LGBTQ+ individuals, students with special educational needs, etc.). This line of work recognizes that contextual relevance is not binary, but rather a constantly evolving continuum. The nine dimensions of PESCOMSE will likely require a differential emphasis, different examples, or even a conceptual restructuring depending on the specific characteristics of the target population. Differentiated and expanded sporting context validations would provide evidence regarding the extent of generalizability and the need for geographically specific physical education and sports-based adaptations.

Limitations

Panel Size and Composition. Although the 20 experts (11 in PESCOMSE-N, 9 in PESCOMSE-A) meet the recommendations of international standards (Luque-Vara et al., 2020; Almanasreh et al., 2019), a larger panel could have captured additional differences. The 9 experts in PESCOMSE-A, although in the same areas of specialization, produced almost perfect unanimity, which may indicate greater conceptual homogeneity than absolute consensus. For the future, a more heterogeneous panel is suggested: inclusion of classroom teachers in addition to academics, inclusion of perspectives from other Colombian regions besides Medellín, and consideration of including the voices of students and families in the relevance assessment.

Bias in Expert Selection. While methodologically justifiable, the purposive, non-probability sampling method introduces a potential bias: experts affiliated with participating universities may be more positively inclined. Although anonymity was guaranteed, local institutional collaboration dynamics may

have played a role. It is suggested that future research include experts from institutions not involved in the program design.

Lack of Implementation Data. This research validates the content, but not its effectiveness in physical education and sports. There is a need for future studies after the pilot implementation to evaluate how the expert-supported athletic and motor activities actually work in real sporting environments, generating data on the fidelity of the implementation, the sport-specific contextual adaptations that need to be made, and the performance and team-based outcomes for students. This study does not assess program effectiveness but focuses solely on content validation through expert judgment.

Contextual Specificity. While relevance to Colombian culture and curriculum is an advantage, the results are specific to Medellín and the Colombian education system. Generalizing to other Latin American contexts would require further validation, recognizing the variability in educational policies, available resources, and the diverse socio-emotional characteristics of the populations. This discussion focuses on the implications of expert judgment regarding the content validity of PESCOMSE.

The discussion has been substantially revised to improve conciseness and reduce overinterpretation. Unsupported analyses were removed, and greater focus was placed on the implications of expert judgment, dimensions requiring refinement, and clearly defined study limitations.

Conclusions

This study aimed to evaluate the content validity of the Socio-emotional Competency Stimulation Program (PESCOMSE) using expert judgment and applying a rigorous content validation method in ac-cordance with international standards.

The main findings confirm that both versions of the program (PESCOMSE-N for primary school and PESCOMSE-A for secondary school) achieved strong content validity (CVI = 0.931), demonstrating that the proposed activities accurately reflect the mastery of socio-emotional competencies. At the same time, a critical difference emerged: PESCOMSE-A demonstrated exceptional content validity (0.988), while PESCOMSE-N showed specific variability in competencies of high cognitive complexity (Optimism, Self-efficacy, Empathy), revealing that the operationalization of the socio-emotional program requires an explicit correspondence between conceptual complexity and the cognitive level of the target population.

The contribution of this study extends beyond the validation of a single program. Methodologically, it establishes a replicable model for the granular validation of physical education and sports-based programs in Latin America, differentiated by age, specific evaluation criteria, and integrated qualitative anal-ysis.

Theoretically, it provides empirical evidence on age-related variability in the operationalization of intangible athletic and motor competencies, challenging hegemonic notions that assume a linear scalability of sporting content. Practically, it provides input for contextualized and relevant policies on sports ed-ucation in Colombia.

However, the most valuable contribution of this work is not PESCOMSE itself, but rather its exem-plification of the rigorous modeling of the validation methodology that other programs, contexts, and populations can adopt. If this study succeeds in encouraging teachers, researchers, and administrators to prior-itize well-being in the content validation of educational programs before implementation, to understand cognitive variability across the lifespan at different developmental stages, and to integrate the perspectives of local evaluators, then its potential applicability extends far beyond a specific program and strengthens a culture of rigor and evidence-based practice in education in Latin America.

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References

Almanasreh, E., Moles, R., & Chen, T. (2019). Evaluation of methods used for estimating content validity. Research in Social and Administrative Pharmacy, 15, 214–221. https://doi.org/10.1016/j.sapharm.2018.03.066

Berk, R. (1990). Importance of expert judgment in content-related validity evidence. Western Journal of Nursing Research, 12, 659–671. https://doi.org/10.1177/019394599001200507

Bonhomme, A., & Rojas, M. (2024). Commitment and training: Professionalization narratives in the implementation of social and emotional learning policies in Chilean schools. Frontiers in Education. https://doi.org/10.3389/feduc.2023.1322323

Cerero, J., Batanero, J., & Almenara, J. (2023). Digital teaching competencies and disabilities: Validation of a questionnaire design using the K coefficient to select experts. Heliyon, 9. https://doi.org/10.1016/j.heliyon.2023.e16467

Ciletti, L., Baines, E., & Somerville, M. (2024). Socioemotional instruction in learning supports staff across Italian primary schools: A call for using the "multidimensional, scaffolding framework" in training programs. European Journal of Special Needs Education. https://doi.org/10.1080/08856257.2024.2421107

Collaborative for Academic, Social, and Emotional Learning (CASEL). (2020). SEL: What are the core competence areas and where are they promoted? https://casel.org/sel-framework

Correia, M. (2023). Socioemotional competencies and behavior management at school: An exploratory socio-educational intervention. Pedagogi: Jurnal Ilmu Pendidikan. https://doi.org/10.24036/pedagogi.v23i1.1524

Del Carmen Díez González, M., Marcos-Sánchez, R., Zaragoza-Benzal, A., & Ferrández, D. (2024). So-cial–emotional management to promote quality in education: A training program for teachers. Education Sciences. https://doi.org/10.3390/educsci14030228

Fernández-Gómez, E., Martín-Salvador, A., Luque-Vara, T., Sánchez-Ojeda, M., Navarro-Prado, S., & Enrique-Mirón, C. (2020). Content validation through expert judgment of an instrument on the nutri-tional knowledge, beliefs, and habits of pregnant women. Nutrients, 12. https://doi.org/10.3390/nu12041136

Fernández-Martín, F., Moreno-Guerrero, A., Marín-Marín, J., & Romero-Rodríguez, J. (2022). Adolescents' emotions in Spanish education: Development and validation of the social and emotional learn-ing scale. Sustainability. https://doi.org/10.3390/su14073755

Gandía-Carbonell, N., Mollà-Esparza, C., Lorente, S., Viguer, P., & Losilla, J. (2025). Strategies to assess and promote the socio-emotional competencies of university students in the socio-educational and healthcare fields: A scoping review. PLOS One, 20. https://doi.org/10.1371/journal.pone.0324531

Hachmann, R. (2024). Situated readiness and transformation of learning across situations and settings. Networked Learning Conference. https://doi.org/10.54337/nlc.v12.8660

Jeldres, M., Costa, E., & Nadim, T. (2023). A review of Lawshe's method for calculating content validity in the social sciences. Frontiers in Education. https://doi.org/10.3389/feduc.2023.1271335

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. Review of Educational Research, 79(1), 491–525. https://doi.org/10.3102/0034654308325693

Jiménez-Azpeitia, J. S., Ortega-Andrade, N. A., Valencia-Ortiz, A. I., & Resendiz-Canales, F. A. (2022). Expert validation of an emotional education program for adolescents during the COVID-19 pandem-ic. Education and Health: Scientific Bulletin of the Institute of Health Sciences, 11(21), 30–35. https://doi.org/10.29057/icsa.v11i21.10088

Junge, C., Valkenburg, P., Deković, M., & Branje, S. (2020). The building blocks of social competence: Contributions of the Consortium of Individual Development. Developmental Cognitive Neuroscience, 45. https://doi.org/10.1016/j.dcn.2020.100861

Kipli, M., & Khairani, A. (2020). Content validity index: An application of validating CIPP instrument for program evaluation. International Multidisciplinary Research Journal. https://doi.org/10.54476/iimrj313

Kogler, L., Müller, V., Werminghausen, E., Eickhoff, S., & Derntl, B. (2020). Do I feel or do I know? Neuroimaging meta-analyses on the multiple facets of empathy. Cortex, 129, 341–355. https://doi.org/10.1016/j.cortex.2020.04.031

Lazcano-Franco, M., Fernández-Mojica, L., Berumen-Ruvalcaba, R., & García-Medina, M. (2022). Evolution of socio-emotional skills in higher education. Journal of Educational Sciences. https://doi.org/10.35429/jesc.2022.16.6.31.39

Lozano-Peña, G., Sáez-Delgado, F., López-Angulo, Y., & Mella-Norambuena, J. (2021). Teachers' social–emotional competence: History, concept, models, instruments, and recommendations for educational quality. Sustainability. https://doi.org/10.3390/su132112142

Luque-Vara, T., Linares-Manrique, M., Fernández-Gómez, E., Martín-Salvador, A., Sánchez-Ojeda, M., & Enrique-Mirón, C. (2020). Content validation of an instrument for the assessment of school teachers' levels of knowledge of diabetes through expert judgment. International Journal of Environmental Research and Public Health, 17. https://doi.org/10.3390/ijerph17228605

Mayne, Z. (2019). Validity evidence supporting science achievement assessments in published intervention studies. Proceedings of the 2019 AERA Annual Meeting. https://doi.org/10.3102/1428889

Mikulic, M. I., Crespi, M., & Radusky, P. (2015). Construction and validation of the inventory of so-cio-emotional competencies for adults (ICSE). Interdisciplinaria, 32(2), 307–330.

Mondi, C., Giovanelli, A., & Reynolds, A. (2021). Fostering socio-emotional learning through early childhood intervention. International Journal of Child Care and Education Policy, 15. https://doi.org/10.1186/s40723-021-00084-8

Montero Chicoma, M. del P. G. (2024). Design and validation of a socio-affective skills program for secondary level basic education tutor teachers under an integrative approach (Doctoral dissertation, National University of San Marcos). UNMSM Institutional Repository.

Montoya, N., Almonacid-Fierro, A., Giraldo, D., & González, K. (2022). Design and validation of a questionnaire to assess the pedagogical content knowledge of Colombian physical education students in the practicum. Pedagogy of Physical Culture and Sports. https://doi.org/10.15561/26649837.2022.0504

Murano, D., Sawyer, J., & Lipnevich, A. (2020). A meta-analytic review of preschool social and emotional learning interventions. Review of Educational Research, 90, 227–263. https://doi.org/10.3102/0034654320914743

Olmedo, A., Balderas, E., & García, J. (2024). Models for evaluating socio-emotional competencies in the educational field. Journal of Basic and Applied Psychology Research. https://doi.org/10.29057/jbapr.v11i6.13159

Orrego, T., Müller, N., & Vásquez, P. (2020). Socio-emotional education: Description and evaluation of a teacher training program. Ibero-American Journal of Educational Evaluation. https://doi.org/10.15366/riee2020.13.1.008

Puerta, M., Valerio, A., & Bernal, M. (2016). Taking stock of programs to develop socioemotional skills: A systematic review of program evidence. https://doi.org/10.1596/978-1-4648-0872-2

Román de Vega, M., Mendoza González, B., & Balcázar Nava, P. (2025). Expert judgment for content validation: Adaptation of a socio-emotional skills instrument. Papeles, 17(34), e2154. https://doi.org/10.54104/papeles.v17n34.2154

Sifuentes, M., Cruzata-Martínez, A., Saavedra-López, M., & Hernández, R. (2024). Didactic strategy to develop socioemotional competencies in university students. Journal of Curriculum and Teaching. https://doi.org/10.5430/jct.v13n5p181

Veríssimo, L., Castro, I., Costa, M., Dias, P., & Miranda, F. (2022). Socioemotional skills program with a group of socioeconomically disadvantaged young adolescents: Impacts on self-concept and emotional and behavioral problems. Children, 9. https://doi.org/10.3390/children9050680.

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