

Beyond Compliance: A Care Ethics-Informed Assessment Framework for Professionalism and Professional Identity Formation in Competency-Based Critical Care Residency Training

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Abstract

Background

Professionalism is a cornerstone of competency-based medical education (CBME), yet its assessment in postgraduate training remains fragmented, largely summative, and poorly linked to professional identity formation. In critical care medicine – defined by vulnerability, moral complexity, and high-stakes relational practice – existing assessment instruments have limited capacity to capture these dimensions meaningfully. This study aimed to develop and evaluate, using educational action research, a participatory, care ethics-informed assessment framework for professionalism and professional identity formation in a critical care medicine residency.

Methods

A four-year participatory educational action research study (2022–2026) was conducted within a critical care medicine graduate program in Colombia. Four iterative cycles were implemented: (1) diagnostic assessment of professionalism knowledge ($n = 105$) and psychometric analysis of 146 workplace-based assessment records; (2) multi-stakeholder qualitative inquiry (57 participants; 1,206 coded excerpts) using reflexive thematic content analysis; (3) participatory co-design of the assessment innovation, informed by two scoping reviews on professionalism assessment and critical care training methods; and (4) implementation and refinement of five interconnected lines of action. Reporting follows SRQR and SQUIRE-EDU guidelines.

Results

The diagnostic cycle revealed a significant gap between declared and enacted professionalism assessment, marked by ceiling effects (88.1% of maximum scores in the professionalism domain), halo bias (first principal component explained 48.9% of the variance), and absent or generic feedback in over 80% of evaluations. Qualitative analysis identified four interrelated themes – the evaluative silence of being; between grading and learning; professionalism as situated practice; and shared vulnerability and relational becoming as the pedagogical conditions for professional identity formation – with an overarching construct: Learning Through Caring, Caring Through Learning. The co-design and implementation cycles produced the Pedagogy of Critical Attentiveness and five lines of action: an integrative formative assessment strategy, a digital logbook for entrustable professional activity documentation (Praktika), bidirectional rotation evaluation, interprofessional simulation, and comprehensive curricular restructuring.

Conclusions

Professionalism becomes visible, learnable, and assessable when understood as a relational pedagogical practice grounded in care ethics. The Pedagogy of Critical Attentiveness – co-constructed through participatory action research– offers a replicable model for aligning CBME assessment with

professional identity formation, applicable across postgraduate residency programs in diverse global contexts.

Background

The Intensive Care Unit (ICU) is one of the most demanding educational environments in postgraduate medical training: a setting where high-stakes clinical decisions, technological complexity, moral uncertainty, and relational intensity converge [1, 2]. In this context, developing physicians who integrate technical excellence with ethical and relational care is essential for patient safety and professional responsibility.

Competency-based medical education (CBME) has become the dominant paradigm in postgraduate medical training worldwide. Major frameworks — including the Accreditation Council for Graduate Medical Education (ACGME) [3], the Canadian Medical Education Directives for Specialists (CanMEDS) [4], and the Competency-Based Training in Intensive Care Medicine in Europe (CoBaTrICE) [5] — identify professionalism as a core competency. The Physician Charter defines professionalism as the physician's commitment to patient welfare, autonomy, and social justice, along with responsibilities for competence, honesty, and continuous improvement [6].

Despite its centrality, professionalism remains one of the most challenging competencies to assess in postgraduate medical education [7, 8]. Unlike procedural domains, it unfolds through relationships, moral judgment, and contextual responsiveness — dimensions that existing instruments inadequately capture, leaving it embedded in the hidden curriculum [9] and transmitted primarily through role modeling and professional socialization [10]. In critical care, although assessment has shifted toward workplace-based models [11–13], professionalism remains underassessed: tools exhibit inter-rater variability, give limited attention to non-technical competencies, and poorly align with clinical realities [13].

Contemporary critiques of CBME warn that competency frameworks may become reductionist when implemented without attention to context, relationships, and learner participation — a tendency particularly pronounced in professionalism [14, 15]. Participatory educational action research offers a productive response by positioning residents, faculty, patients, and educators as active co-constructors of assessment innovation [16]. Despite its relevance, evidence on how such approaches can inform professionalism assessment systems in postgraduate medical education remains scarce [7, 13].

Professionalism in clinical training lies at the intersection of competence, identity, and care — elements that no single theoretical framework fully captures. Crucially, it cannot be reduced to a behavioral checklist: professionalism is the visible expression of an evolving professional identity, shaped by institutional culture, role modeling, and the moral texture of clinical practice [10, 17]. Meaningful assessment therefore requires frameworks that address not only what residents do but also who they are becoming [18]. Drawing on four complementary traditions — CBME and programmatic assessment [11, 19, 20]; professional identity formation [10, 17, 21]; care ethics [22–25]; and participatory educational action research [16] — this study aimed to develop and evaluate a participatory, care ethics-informed

programmatic assessment system for professionalism and professional identity formation in a critical care medicine residency program, using educational action research with residents, faculty, patients, nursing and allied health professionals, and university educators.

Methods

Study Design

This study employed a participatory educational action research design, conceived as dialectical and emergent [16,26]: each cycle generated new understandings that reoriented subsequent action in a spiral of progressive transformation. The study unfolded from 2022 to 2026 across four interconnected cycles, collectively oriented toward co-constructing, implementing, and refining a care ethics-informed assessment framework for professionalism and the formation of professional identity (Figure 1).

The study combined a qualitative transformative core with quantitative diagnostic components and applied data crystallization [27] by integrating multiple participant groups, documentary sources, and methodological lenses. Reporting follows the Standards for Reporting Qualitative Research (SRQR) [28] for the qualitative components and the Standards for Quality Improvement Reporting Excellence in Education (SQUIRE-EDU) [29] for the iterative action phase. Completed checklists are provided as Additional Files 1 and 2.

Setting

The study was conducted within the Critical Care Medicine graduate program at Universidad de La Sabana, in partnership with Fundación Clínica Shaio, a high-complexity university hospital in Bogotá, Colombia. Unlike systems that require prior board certification in internal medicine or anesthesiology, Colombia's model admits residents directly after medical school to a four-year primary specialty program (R1-R4)— a distinctive trajectory in which residents progressively assume the full responsibilities of intensivists, making residency a particularly significant period for professional identity formation.

Participants and Stakeholder Involvement

Participants were recruited using purposive, snowball, and theoretical sampling strategies [30], which were iteratively refined to achieve conceptual saturation across the axes of professionalism assessment, care ethics, and professional identity formation. Stakeholder groups included residents, clinical faculty, nurses, paramedical staff, patients, and representatives from the School of Medicine and Education. Stakeholder participation was constitutive rather than consultative throughout the process [16,26].

Educational Action Research Process

Cycle 1: Diagnosing the State of Professionalism Assessment

The first cycle aimed to establish an empirical baseline for professionalism knowledge and assessment practices within the program through two complementary diagnostic studies.

Study 1a. Professionalism Knowledge Survey

A cross-sectional observational study was conducted in the first semester of 2023 to characterize knowledge of professionalism across levels of medical training. The previously used and validated 26-item *Cuestionario sobre el Conocimiento de Profesionalismo Médico*, developed and validated by Martínez-Téllez et al. [31], was administered digitally via Google Forms to 105 participants across five training levels: undergraduate students (n=13), interns (n=26), general practitioners (n=34), residents (n=18), and specialists in internal medicine, cardiology, and critical care (n=14). The instrument evaluates four dimensions grounded in the American Board of Internal Medicine (ABIM) framework [6]: concepts, principles, characteristics, and professional responsibilities. It demonstrates satisfactory internal consistency (Cronbach's $\alpha = 0.82$) [31]. Sample size was calculated using Cochran's formula for infinite populations [32], yielding a minimum of 96 participants at a 95% confidence level, 10% precision, and an expected prevalence of satisfactory knowledge of 50%. Statistical analyses were conducted in SPSS version 25.0, using the Kolmogorov–Smirnov test to assess normality; non-normally distributed variables were summarized using medians and interquartile ranges.

Study 1b. Psychometric Analysis of the Institutional Workplace-Based Assessment Tool

A retrospective analysis of 156 workplace-based assessment (WBA) records from 34 critical care medicine residents across 35 clinical rotations was conducted between January 2023 and January 2024. Of these, 146 records (93.6%), completed in the standardized institutional format, were included in the quantitative analysis to ensure homogeneity; the remaining 10 were examined descriptively. The institutional instrument uses a 1–5 Likert scale across four competency domains: patient care, professional practice, communication, and professionalism, and includes an open qualitative feedback field. Analyses included frequency distributions of global and domain-specific scores; principal component analysis to examine factor structure and discriminative capacity; inter-rater variability profiling using assessor permissiveness categories, defined by faculty mean scores (very permissive ≥ 4.9 , flexible 4.7–4.89, intermediate 4.5–4.69, demanding < 4.5); and qualitative content analysis of written feedback comments. Cronbach's alpha was calculated to estimate internal consistency. Findings from both studies were integrated to identify convergent diagnostic priorities and inform the design of Cycle 2.

Cycle 2: Stakeholder Experiences of professionalism, Assessment, and Professional Identity Formation

The second cycle examined how professionalism, its assessment, and professional identity formation were experienced by diverse stakeholders in the clinical learning environment, using three complementary analytical approaches: a systematization of institutional historical memory, a thematic content analysis of stakeholder narratives, and an interpretive phenomenological inquiry into lived experiences.

Participants. A total of 57 participants were recruited from six stakeholder groups: 13 residents across all four training levels (R1–R4); 21 clinical faculty members; 7 nurses; 4 paramedical and allied health staff members; 5 patients with direct experience of resident-delivered care; and 7 representatives from the School of Medicine and the School of Education.

Data collection. Data were collected between 2024 and 2025 using multiple complementary methods. Forty in-depth, semi-structured interviews were conducted individually (40–50 minutes each) with participants across stakeholder groups, using study-specific interview guides adapted to the experiential context of each participant group. The guides were developed specifically for this study and were used flexibly as orienting frameworks, allowing the interviewer to follow participants' narratives, probe relevant issues in greater depth, and adapt the sequence of questions to the flow of each conversation (Additional File 3). Two focus groups were held with residents and faculty to foster discursive interaction and collective meaning-making around assessment and professional formation practices. The principal investigator conducted participant observation in clinical and academic settings, recording observations in a reflective field journal. After preliminary analysis of interview data, the study team administered a study-specific open-ended questionnaire by email to residents, faculty, paramedical and allied health staff, and patients to further explore care and professional identity formation—dimensions that emerged as conceptually rich yet warranted further elaboration. Two versions of the questionnaire were used, adapted to the experiential context of the participant groups (Additional File 3). Documentary analysis of program curricula, evaluation formats, and accreditation documents was conducted and compared with international CBME frameworks, including CanMEDS [4], CoBaTrICE [5], and ACGME [3] standards.

The systematization of experiences [33], a Latin American participatory research tradition that reconstructs the critical memory of educational processes to generate knowledge from lived practice, was used to recover the program's historical memory. Data sources included narrative interviews with founding faculty members and a comprehensive review of institutional documents, curricular records, and accreditation files covering six decades.

Analysis. A total of 1,206 quotations were coded inductively in Atlas.ti 2025, yielding 31 distinct codes organized thematically. Analysis followed a two-stage process. In the first stage, reflexive thematic content analysis [34,35] guided the identification of patterns of meaning across stakeholder narratives, yielding three analytical axes: assessment of the gap between the formative ideal and lived exposure; professionalism as a situated relational practice; and medical education between clinical experience and the need for pedagogical structure. In the second stage, Van Manen's interpretive framework [36,37] — using the four lifeworld existentials (lived space, lived body, lived time, and lived relation) as sensitizing concepts — oriented the inquiry into professional identity formation through the lens of care ethics, interpreted through its constitutive elements: attentiveness, recognition, relational responsibility, and responsiveness to vulnerability. Rigor was enhanced through data crystallization [27], phenomenological assent (member checking) [36], inter-coder review, and systematic reflexive memo-writing until conceptual saturation was achieved, consistent with established criteria for qualitative quality [37].

Cycle 3: Co-Constructing the Assessment Innovation

The third cycle translated diagnostic and qualitative findings into collaborative educational action through a deliberate, participatory co-construction process, in which stakeholders became active co-designers of the assessment innovation.

Co-design process. Findings from the previous phases were systematically shared with all stakeholder groups through formal and informal reflective spaces. Formal mechanisms included biweekly technical working sessions convened with the program coordinator, clinical faculty, and university academic authorities — specifically the Curriculum Directorate and the Postgraduate Coordination of the School of Medicine. These sessions followed a structured deliberative format: presentation of cycle findings, collaborative identification of priority areas for change, proposal of interventions, and negotiation of the feasibility of implementation within institutional and curricular constraints. Informal mechanisms included ongoing dialogues with residents after clinical sessions, post-rotation feedback conversations, and reflective exchanges with nursing and paramedical staff during participant observation.

As part of this evidence-informed co-design process, two scoping reviews were conducted to ensure that intervention decisions were grounded in the best available evidence: one mapping professionalism assessment in medical education [7] and another examining assessment methods in critical care graduate training [13]. The findings from both reviews were systematically integrated into the deliberative sessions, linking stakeholder experiential knowledge with the international literature on CBME and programmatic assessment.

Outputs. The co-design process produced two foundational outputs described in the results section: a care ethics-informed assessment framework and a set of educational interventions implemented in Cycle 4.

Cycle 4: Implementing and Refining the Assessment Innovation

The fourth cycle implemented, observed, and progressively refined the assessment innovation co-designed in Cycle 3. Interventions were organized around five interconnected lines of action.

Line 1. Transformation of semestral assessment practices. The *Rally de Competencias Críticas* was designed as an integrative formative assessment strategy comprising a differentiated written examination by training level, four interactive clinical scenarios resolved by mixed-level resident groups, structured peer feedback, self-assessment and co-evaluation, and individualized improvement plans.

Line 2. Resident-led rotation evaluation system. A structured digital evaluation instrument was implemented via Google Forms at the end of each clinical rotation, allowing residents to evaluate faculty pedagogical practices, feedback quality, clarity of learning objectives, and the safety and relational quality of the learning environment.

Line 3. Praktika — a digital, EPA-based formative assessment platform. Praktika was developed as a digital logbook application for iOS and Android that enables real-time documentation of Entrustable Professional Activities (EPAs) [38], supervisor feedback, and tracking of progressive performance aligned with CBME entrustment standards [39]. In its initial implementation, the tool covers airway management, vascular access procedures, and bedside ultrasound, and includes real-time supervisor evaluation, the ability to attach photographic evidence, and progressive performance tracking.

Line 4. Interprofessional simulation workshops and an emotional intelligence curriculum. Interprofessional simulation workshops were held on the university campus in collaboration with the clinical pharmacology and palliative care residency programs. Complementing this, an emotional intelligence and vulnerability curriculum was delivered by an external expert and grounded in evidence that emotional competencies are central to professional identity formation [40].

Line 5. Curricular restructuring and program accreditation renewal. A comprehensive curricular restructuring was undertaken as part of the program's accreditation renewal with the Colombian Ministry of Education. The rotation order was redesigned to provide transversal competency development from the outset and to transition progressively to high-complexity subspecialty rotations, explicitly integrating EPAs, milestone-based progression criteria, and longitudinal mentorship structures.

Observation and refinement. Throughout Cycle 4, implementation was accompanied by systematic field observation, field journal documentation, reflective debriefing sessions with the research team, and ongoing stakeholder dialogue. Implementation was understood not as the delivery of a fixed protocol but as a continuing spiral of participatory improvement [16,26], in which the distinction between action, observation, and reflection remained intentionally permeable. As the action cycles progressed, it became clear that strengthening professionalism assessment required addressing the program's broader competency architecture, prompting interventions that extended beyond professionalism as *an isolated domain*.

Evaluation measures. The impact of the intervention was assessed using multiple complementary measures: resident-completed end-of-rotation questionnaires assessing faculty practices, feedback quality, and learning environment safety; a comparative analysis of WBA records before and after the instrument redesign; usage data from Praktika documenting EPA completion rates and supervisor feedback frequency; and ongoing reflective debriefing sessions with stakeholders to evaluate the relevance, feasibility, and educational impact of each intervention component.

Reflexivity

The principal investigator (CJV) and co-investigator (CMP) held insider positions [30] within the program under study — CJV as a faculty member, clinician, and researcher, and CMP as program coordinator. These roles provided privileged access to institutional culture, daily educational practices, and the tacit norms governing the assessment of professionalism, while also requiring explicit strategies to address potential power asymmetries and interpretive bias.

To enhance reflexivity, the research team held regular peer-debriefing sessions to critically examine assumptions, emerging interpretations, and analytic decisions. Data crystallization [27], which involved multiple participant groups and data sources, was used to counterbalance the influence of any single interpretive perspective, and its implications for interpretation were made explicit throughout the results and discussion.

Ethical Considerations

This study was conducted in full accordance with the Declaration of Helsinki [41] and applicable international guidelines for research involving human participants. Under Colombian health research regulations [42], the study was classified as minimal-risk research, limited to collecting perceptions and experiences through qualitative and quantitative methods, without direct biological, physiological, psychological, or social intervention. The study also complied with Colombian data protection [43] and medical ethics legislation [44].

The research protocol received formal ethical approval from two independent institutional review boards: the Ethics Committee of the School of Medicine and the Research Committee of the School of Education at Universidad de La Sabana (protocol MEDPHD-14-2025), and the Ethics Committee in Research of Fundación Clínica Shaio (protocol DIB-24-02). Both committees verified compliance with the principles of respect for persons, beneficence, and justice prior to data collection. Written informed consent was obtained from all participants, including patients, and data were stored in password-protected digital repositories accessible only to the research team.

Results

The four action research cycles produced an integrated body of findings that document the diagnostic baseline, stakeholders' lived experiences of professionalism and its assessment, the co-construction of a shared framework for educational transformation, and its iterative implementation within the program's CBME architecture. Findings are presented cycle by cycle, with the qualitative themes from Cycle 2 anchoring the study's interpretive architecture. Throughout all cycles, data collection, analysis, and intervention were understood as inseparable dimensions of a single participatory spiral – each cycle informing and reorienting the next (Table 1).

Cycle 1. Recognizing the Limitations of Existing Professionalism Assessment in CBME

The first cycle established an empirical baseline for professionalism knowledge and assessment practices through two complementary diagnostic studies, revealing a significant gap between the program's declared commitment to professionalism as a central CBME competency and the assessment infrastructure that operationalized that commitment.

A Persistent Knowing–Doing Gap in Professionalism Knowledge

The diagnostic survey included 105 participants across five levels of medical training. The global mean score was 14.4/26 (55.3%), indicating intermediate overall knowledge of professionalism. Performance varied by dimension: concepts (4.15/7; 59.3%) and characteristics (3.95/7; 56.5%) yielded the highest scores, whereas professional responsibilities – the dimension most directly connected to ethical decision-making and clinical application – recorded the lowest performance (3.49/7; 49.8%). This pattern reveals a persistent gap between conceptual knowledge of professionalism and its application in complex clinical scenarios.

Table 1. Evolution of Semestral Assessment Through Four Action Research Cycles

Assessment moment	Description	Strengths identified	Improvement priorities for next cycle
Cycle 1: Unstructured oral examination	Led by R4 residents without faculty supervision. No explicit rubrics, no professionalism criteria, no differentiation by training level. Results disclosed publicly.	Recognized need for periodic evaluation. Promoted senior resident participation in academic processes.	Introduce explicit criteria and rubrics. Ensure faculty supervision. Eliminate public disclosure. Transition from punitive to formative assessment.
Cycle 2: Structured faculty-supervised assessment	Cases prepared by senior residents and reviewed by faculty. Explicit rubrics introduced, differentiated by training level. Immediate structured feedback provided.	Greater transparency and evaluative legitimacy. Faculty presence as pedagogical guarantor. Reduced implicit judgment.	Diversify strategies for different learning styles. Integrate reflective and conceptual components. Reduce assessment-related anxiety. Improve time sustainability.
Cycle 3: Competency-based simulation with 360° evaluation	Differentiated by training level (R1–R4). Simulation-based, competency-specific rubrics. Interprofessional participation (nursing, physiotherapy). Immediate feedback.	High clinical authenticity. Explicit visibility of professionalism in practice. Greater coherence between evaluation and ICU reality.	Simplify rubrics for real-time use. Reduce logistical complexity. Complement simulation with more sustainable strategies.
Cycle 4: Rally de Competencias Críticas (integrative formative assessment)	Differentiated written exam by training level. Four interactive clinical scenarios in mixed-level groups. Structured peer feedback, self-assessment, co-evaluation, individualized improvement plans. Senior residents as academic facilitators.	Transformation of assessment toward learning and accompaniment. Reduced evaluative anxiety. Strengthened peer learning and explicit professionalism as relational practice. Emergence of residents as educational leaders.	Systematize strategy for sustainability. Adjust timing and debriefing structure. Integrate thematic clinical crisis scenarios. Consolidate as continuous longitudinal process.

Note. EPA = entrustable professional activity; R1–R4 = residency years 1–4. The Rally de Competencias Críticas (Cycle 4) represents the most mature iteration of the assessment transformation and serves as the model for the ongoing implementation of programmatic assessment.

Note: Each evaluation moment constituted one action research cycle of planning–action–observation–reflection. Improvement priorities, identified through systematic observation and stakeholder reflection, informed the design of the subsequent cycle.

Evaluation

A non-linear developmental trajectory emerged across training levels. Residents achieved the highest mean scores (16.7/26), while specialists showed a slight decline (15.0/26). Communication was consistently identified as the most important dimension of professional practice: 85 participants (81.7%) highlighted assertive communication as the key element for building effective physician-patient relationships, and 95 (90.4%) identified establishing a good physician-patient relationship as the most important element of professionalism in the first clinical encounter.

Assessment Without Discrimination: Psychometric Evidence

Complementing these findings, analysis of 146 WBA records from 34 critical care medicine residents across 35 clinical rotations revealed systematic structural limitations in the program's evaluation instruments. Global scores clustered at the upper end of the scale, with a median of 4.8 (IQR 4.5–5.0), indicating pronounced ceiling effects and limited discriminative capacity. Principal component analysis identified a predominantly unidimensional factor structure, with the first component explaining 48.9% of the total variance — consistent with a halo effect in which global impressions drove scores uniformly across all domains rather than independent, domain-specific judgments. Internal consistency was high (Cronbach's $\alpha = 0.88$), but the unidimensional structure suggests that assessors were not meaningfully differentiating among the technical, communicative, and professionalism domains.

Inter-rater variability was substantial. Of 41 identified assessors, 12 were classified as very permissive (mean scores ≥ 4.9), 8 as flexible (4.7–4.89), 13 as intermediate (4.5–4.69), and 8 as demanding (mean scores < 4.5). One faculty member captured this systemic problem:

"I could fill in the forms myself because I already know what grade everyone will get. There are services where the grade is the same for all residents, always. That completely loses its objectivity." (Faculty, E11-P)

Qualitative feedback analysis found that 40.4% of evaluations contained no written comments, and an equal proportion included only generic, non-actionable statements. Residents consistently reported receiving grades without substantive guidance:

"There are very few who actually take the time to say something... you hope you've done the work well, and in the end the grading form arrives... but really, very few take the trouble to say: look, we could work on this." (Resident, E2.2-R)

The professionalism domain yielded the highest scores and the lowest variability — with 88.1% of evaluations receiving the maximum score — making it functionally invisible as a formative target. Collectively, these findings established the diagnostic rationale for the participatory co-design process launched in Cycles 3 and 4.

Cycle 2. Professionalism and Assessment as Lived Experience: A Multi-layered Qualitative Analysis

Drawing on a systematization of institutional historical memory, a thematic content analysis of 40 in-depth interviews and 2 focus groups (1,206 coded excerpts; 31 codes), and an interpretive inquiry into lived experiences, four interrelated themes and one overarching theme emerged (Table 2).

Cycle 2 qualitative analysis yielded four interrelated themes and one overarching theme through systematization of institutional historical memory, reflexive thematic content analysis, and hermeneutic phenomenological inquiry.

Theme 1. The Evaluative Silence of Being: How Administrative Compliance Displaced Professionalism Assessment

The systematization of more than six decades of institutional history revealed that current limitations in assessing professionalism are not recent technical failures but the accumulated product of structural tensions embedded in the program’s formative culture since its origins. During the founding period (1963–1981), training occurred without formal structure or assessment instruments. As one founding physician recalled: *“We learned along the way; assessment... that didn’t exist; here training was work – basically, we lived here at the clinic.”* (Founding physician, 1).

With formal accreditation in 2005, assessment was institutionalized; yet professionalism items were treated as assumed rather than cultivated: “The ‘being’ was the most important thing, but the one area where the program could least influence... because it came from home” (Founding coordinator, RB). Five structural tensions emerged – between administrative compliance and professional being; between *techne* and *phronesis*; between innate and constructed professionalism; between procedural counting and identity formation; and between physiological knowledge and the ethics of vulnerability. Together, these tensions constitute what the systematization called the evaluative silence of being—a program that recognized professionalism as its highest aspiration but lacked the pedagogical structures to assess it meaningfully within the CBME architecture.

Table 2. Summary of Thematic Findings for Professionalism Assessment and Professional Identity Formation in Critical Care Medicine. **eme**

Theme	Description
1. The Evaluative Silence of Being: How Administrative Compliance Displaced Professionalism Assessment	Documents six decades of institutional history revealing how administrative formalization of assessment progressively silenced professionalism as a formative educational target. Five structural tensions are identified – between administrative compliance and professional being; between techne and phronesis; between innate and constructed professionalism; between procedural counting and identity formation; and between physiological knowledge and the ethics of vulnerability – that configure what the systematization named the evaluative silence of being.
2. Between Grading and Learning: Assessment as Compliance vs. Formative Practice in CBME	Documents the structural gap between a shared ideal of formative, continuous, and developmentally oriented assessment and the reality of assessment as an episodic, compliance-oriented, and emotionally exposing experience across all stakeholder groups. The invisibility of professionalism as an evaluable competency and the absence of meaningful formative feedback are identified as central systemic limitations.
3. Professionalism as Situated Practice: Role Modeling, Hidden Curriculum, and Competency in the ICU	Examines how professionalism was understood and enacted through relationships, ethical responsiveness, and contextual judgment. Faculty role modeling is identified as the most influential mechanism of professional socialization. Highlights how the hidden curriculum transmits professional values independently of formal CBME structures, and how inconsistent role modeling can fragment residents' developing professional identity.
4. Shared Vulnerability and Relational Becoming: The Pedagogical Conditions for Professional Identity Formation	Explores three interconnected phenomenological dimensions: (a) shared vulnerability – experienced simultaneously by patients, residents, and faculty – as a constitutive pedagogical space rather than a deficit to overcome; (b) recognition as the relational mechanism activating or eroding professional identity within CBME trajectories; and (c) belonging and becoming as a negotiated process requiring deliberate relational accompaniment and mentorship.
Overarching Theme: Learning Through Caring, Caring Through Learning	Care emerged simultaneously as the mode through which residents learned professionalism and as the professional ideal they sought to embody. Vulnerability, recognition, relational responsibility, and ethical attentiveness constitute the integrative construct linking CBME assessment, professional identity formation, and care ethics across all four themes.

Note. CBME = competency-based medical education; ICU = intensive care unit.

Theme 2. Between Grading and Learning: Assessment as Compliance vs. Formative Practice in CBME

Content analysis of 40 in-depth interviews revealed a structural gap between assessment as understood in theory and as experienced. All stakeholder groups articulated a shared ideal of continuous, formative assessment – yet in practice, residents described a sharp distinction between grading and genuine educational engagement: *“Assessment should be something dynamic, something constant – I am constantly evaluating and growing; assessment allows me to grow. Grading is static... a small grade cannot capture who you are as a professional, as a person.”* (Resident, E3.1-R)

The structural invisibility of professionalism as an evaluable CBME competency was explicitly named – “I don’t feel like they assess it... professionalism” (Resident, E1.1-R) – alongside the emotional stakes of evaluation as a process of exposure rather than learning: *“The first evaluation I had was public... it was more like making you feel bad in front of everyone... they never said ‘hey, you have this gap, let’s work on it.’”* (Resident, E4.1-R)

Nursing and paramedical staff noted that their daily observations of professional conduct – communication with families, ethical decision-making, responsiveness to teams – constituted an ongoing informal assessment that was never formally integrated into the institutional system. Patients articulated professionalism through relational quality: “Being a patient is more than a body, more than a collection of organs; it is a being with beliefs and feelings” (Patient, Pte-1). The convergent finding was that this tension between the formative ideal and lived experience was not primarily a technical problem but a pedagogical and cultural one.

Theme 3. Professionalism as Situated Practice: Role Modeling, Hidden Curriculum, and Competency in the ICU

Across stakeholder narratives, professionalism emerged as a practice grounded in relationships, ethical responsiveness, and contextual judgment rather than a fixed individual attribute. Faculty role modeling was the most consistently identified mechanism of professional socialization: *“Many of us learn by watching how the faculty behave.”* (Resident, E1.4-R). *“Being curious, staying attentive to my patient, caring about my patient – that is the core of professionalism, because it will lead you to study the topic more.”* (Resident, E3.1-R)

However, this mechanism also revealed risks: when role modeling was inconsistent or hierarchically coercive, residents internalized these practices as norms. *“What I see right now is that residents, unfortunately, are learning not to be colleagues. They are seeing it in their leaders, their role models... and that fragments the concept of professionalism within an ICU”* (Faculty, E9-D). The implication for assessment design was clear: making professionalism visible within CBME requires not only new instruments but also a deliberate transformation of the relational and cultural conditions through which professional identity is transmitted.

Theme 4. Shared Vulnerability and Relational Becoming: The Pedagogical Conditions for Professional Identity Formation

Interpretive analysis of lived experiences revealed three interconnected dimensions through which professional identity developed in the ICU.

Vulnerability as a shared pedagogical space. Vulnerability emerged as a constitutive feature of the ICU’s formative environment, experienced simultaneously by patients, residents, and faculty – a relational ground for trust and pedagogical bonds rather than a deficit to be eliminated. Systemic conditions could compound it into moral fatigue: *“There are several I know firsthand who have had depressive symptoms,*

anxiety, but the dynamics of the program leave no space for attending to those psychological needs" (Resident, E1.2-R).

Recognition and the hidden curriculum of assessment. The presence or absence of recognition shaped professional identity trajectories in ways no institutional instrument could capture. One resident described the transformative impact of being genuinely seen: *"During my internship I came across people who were enormously warm, who made the initial training process very easy, who made me want to be there a few years later."* (Resident, E2.1-R). Conversely, assessment grounded in judgment without accompaniment led to disconnection and identity fragmentation.

Negotiating belonging and becoming. Residents described identity formation as a demanding negotiation between competence and self-doubt: *"I believe residency has two happy days: the day they tell you that you passed, and the day they tell you that you finished. The rest is... resistance"* (Resident, E2.2-R). Yet relational anchors sustained that resistance: *"With time and with the people you meet, you definitely know why you are there"* (Resident, E4.2-R). Faculty recognized that this required deliberate scaffolding: *"Mentorship means shoulder-to-shoulder accompaniment. Working deeply on the being and complementing it with knowing and doing"* (Faculty, 12-D).

Overarching Theme: Learning Through Caring, Caring Through Learning

Across all stakeholder groups and across all four themes, a single integrative pattern emerged: professionalism in the ICU cannot be reduced to a list of observable behaviors to be assessed, nor to a competency measured in isolation. Rather, it emerged as a relational process through which learning and caring became inseparable – simultaneously the means by which residents learned what it meant to be a physician and the professional ideal they sought to embody. Care was not peripheral to competence; it was its condition. Residents who experienced attentiveness, recognition, and relational accompaniment developed professional identity not despite the demands of critical care training but through them.

Cycle 3. Co-Constructing a Shared Vision of Professionalism Assessment

As findings from the diagnostic cycles were systematically shared with stakeholders, a process of collective interpretation and priority-setting emerged. Residents, faculty, nurses, paramedical and allied staff, patients, and university educators consistently challenged the prevailing view of assessment as a grading exercise and articulated a more developmental understanding. Four priority areas emerged from the biweekly technical working sessions and informal reflective spaces, each linked to specific diagnostic findings.

The first priority was to make professionalism visible in assessment processes. As one resident articulated: *"The academic part is evaluated – but how I interact with my patient, how I speak with them – that is not assessed."* (Resident, E4.1).

The second was to transform feedback from episodic judgment into longitudinal accompaniment. One faculty member described what this might look like in practice: *"One of my last questions in every*

assessment is: 'Express how you felt during the evaluation process.' The most frequent response I receive is that they feel evaluated fairly and equitably – and if a resident tells me that, it means the formation process has been transparent. For me, that matters.” (Faculty, 2-P-E)

The third priority was to individualize assessment structures to honor diverse learning trajectories: *“Individualizing – that I believe is the main thing... I learn differently... and that does not make me a worse physician. I simply learn differently.” (Resident, E4.3-R)*

The fourth was creating relational and care ethics-oriented pedagogical structures to support residents' emotional well-being and professional formation simultaneously – responding directly to evidence that institutional dynamics left little room to attend to psychological needs: "They should be concerned about how one feels day to day... no one ever asks: Are you okay? Are you tired today?... No one has asked me that in residency." (Resident, E-4.1R).

These priorities informed two foundational conceptual outputs. The first was a care ethics-informed framework that integrates assessment principles, EPA-based entrustment structures aligned with CBME milestones, and the constitutive elements of care ethics – attentiveness, recognition, relational responsibility, and responsiveness to vulnerability. The second was the Pedagogy of Critical Attentiveness (*Pedagogía de la Atención Crítica*), which positions assessment as a pedagogical act of care that develops clinical competence, professional identity, and ethical responsiveness within a CBME framework. Ten collaborative principles—the Ten-Principle Assessment Charter (*Decálogo de la Evaluación*)—were developed with faculty and residents as an explicit articulation of the professional values, relational commitments, and ethical responsibilities that constitute the critical care medicine identity (Figure 2).

Cycle 4. Transforming Assessment Through Care-Informed Practices

The fourth cycle implemented, observed, and progressively refined the assessment innovation through five interconnected lines of action, each tailored to specific diagnostic findings. As the cycles progressed, it became clear that strengthening professionalism assessment within a CBME framework required addressing the program's broader competency architecture – leading to interventions that extended beyond professionalism as an isolated domain.

Line 1. From Punitive Event to Formative Practice: “Rally de Competencias Críticas”

In response to findings of a punitive assessment culture and the absence of formative feedback, the semestral assessment underwent four iterative transformations, culminating in the *Rally de Competencias Críticas* (Rally of Critical Skills)— an integrative formative strategy comprising a differentiated written examination by training level (R1–R4), four interactive clinical scenarios resolved by mixed-level resident groups, structured peer feedback, self-assessment, co-evaluation, and individualized improvement plans.

Participants reported a qualitative shift in their assessment experience: *“For the first time, I left an assessment feeling that I had learned something, not that I had been judged.”* (Resident, field journal). *“Assessment should be something dynamic... assessment allows me to grow. Grading cannot capture who you are as a professional, as a person.”* (Resident, E4.1-R). Observed outcomes included reduced assessment-related anxiety, increased peer learning, explicit engagement with professionalism in interprofessional clinical scenarios, and a resident-reported sense of formative accompaniment.

Line 2. Bidirectional Accountability: Resident-Led Rotation Evaluation

To address the unidirectional nature of existing assessment practices, a structured digital evaluation instrument was implemented via Google Forms at the end of each clinical rotation. Residents systematically evaluated faculty pedagogical practices, feedback quality, clarity of learning objectives, and the safety of the learning environment. One resident described the significance of this mechanism:

“Feedback from each rotation – what I felt about my month, whether I met my objectives, whether I liked the rotation – that seems very important to me.” (Resident, MAZ-R-E)

This bidirectional mechanism repositioned residents as active agents in program quality improvement, generating continuous data that informed subsequent action cycles.

Line 3. Praktika: A Digital EPA-Based Platform for Competency Documentation and Longitudinal Tracking

Addressing the structural invisibility of professionalism in existing WBA instruments and the lack of a longitudinal documentation infrastructure, Praktika was developed as a digital logbook application (iOS and Android) that enables real-time, EPA-based documentation, supervisor feedback, and progressive milestone tracking aligned with CBME progression standards. Initial implementation covered airway management, vascular access procedures, and bedside ultrasound, with real-time supervisor evaluation and photographic evidence attachment. Residents reported that Praktika transformed documentation from an administrative burden into a reflective practice:

“Seeing my own learning curve made the improvement visible. It stopped being about the grade and started being about where I am going.” (Resident, end-of-rotation questionnaire)

Line 4. Interprofessional Simulation and Emotional Intelligence Curriculum

In response to findings of shared vulnerability, limited psychological safety, and burnout risk identified in Cycle 2, interprofessional simulation workshops were conducted jointly with the clinical pharmacology and palliative care residency programs at the Universidad de La Sabana campus – creating a deliberate third educational space, distinct from the high-pressure ICU environment. One resident described the quality of this learning space:

“The workshops are a space very much not about judging who knows or doesn’t know, but truly about transmitting knowledge.” (Resident, AO-R-E)

Complementarily, an emotional intelligence and vulnerability curriculum equipped residents with tools for self-awareness, recognizing communication styles, and building psychological resilience. Residents proposed sustained mechanisms for interpersonal recognition – “morning academic sessions, campus workshops, celebration of personal milestones” – reflecting an emerging orientation toward collective professional formation and shared accountability.

Line 5. Curricular Restructuring and Program Accreditation Renewal

In response to the systemic finding that the program lacked an explicit pedagogical architecture aligning assessment with professional identity formation, a comprehensive curricular restructuring was undertaken as part of the program’s accreditation renewal before the Colombian Ministry of Education. Guided by the principle of immersive entry into the full complexity of critical care from the outset – positioning early rotations as experiences of the whole rather than as fragmented technical sequences – the rotation order was redesigned to provide transversal competency development, with a progressive transition to high-complexity subspecialty rotations, explicitly integrating EPAs, milestone-based progression criteria, and longitudinal mentorship structures.

Observed Outcomes and Unexpected Findings

Over successive cycles, assessment shifted from an episodic, summative, and often punitive event to a continuous, dialogic, and relational practice. This transformation was not attributable to any single tool or intervention but emerged from the gradual development of a shared assessment culture in which feedback was understood as accompaniment, assessment as an act of pedagogical care, and professional growth as a collective educational responsibility.

An unexpected finding was the extent to which residents themselves became active agents of cultural change: once repositioned as co-designers of assessment, they proposed initiatives that extended beyond the formal curriculum – including interpersonal recognition practices, mental health support structures, and community-building activities. One resident’s observation captures this emergent agency: *“A mentor, a mentor because... when you see them practice or do it... you say: it can be done, it can be done.”* (Resident, E3.3-R). This suggests that participatory assessment design fosters a sense of educational agency and belonging that CBME frameworks rarely address explicitly – and that transforming assessment culture may, above all, require giving residents a meaningful voice in shaping it.

Discussion

This study shows that assessing professionalism in critical care residency training is not primarily a technical or psychometric challenge but rather a pedagogical, cultural, and relational one. Four interconnected action research cycles revealed a persistent gap between the declared centrality of professionalism in CBME and the assessment structures that operationalized it – a gap rooted in six decades of institutional history and perpetuated by compliance-oriented evaluative cultures, halo effects,

and the systematic absence of formative feedback. Stakeholder narratives converged on a shared finding: professionalism becomes visible, learnable, and assessable only when assessment itself is understood as a relational pedagogical practice grounded in care ethics. The participatory co-design process translated this understanding into a care ethics-informed assessment framework – the Pedagogy of Critical Attentiveness – operationalized through five interconnected lines of action that collectively transformed the program’s evaluative culture.

The Evaluative Silence of Being: Diagnosing Assessment Failure in CBME

The psychometric and historical findings of this study resonate with and extend a well-established body of critique in the CBME literature. Lingard [14] characterized “competence” as a “god term” in health professions education – a rhetorical trump card that may render invisible the relational, ethical, and identity-forming dimensions of professional practice that resist easy observation [14]. Hodges warned against the “i-Doc” model, in which medical education borrows the logic of manufacturing and students become products to be optimized through measurable outputs [15] – a logic that, as this study documents, produces high scores without educational meaning. The professionalism domain, which received maximum scores in 88.1% of records – while residents reported never feeling assessed in their interpersonal and ethical conduct – is a precise empirical illustration of this dynamic.

The halo and ceiling effects identified in the WBA psychometrics are consistent with findings from Govaerts et al. [45] and Gingerich et al. [46], who described workplace-based assessments as social judgments shaped by cognitive bias. The historical systematization adds an original dimension: the evaluative silence of professionalism was not due to individual assessor failure but to structural tensions inscribed in the program’s institutional culture over six decades – tensions between administrative compliance and professional being, between techne and phronesis, and between the belief that professionalism is biographically inherited and the evidence that it must be pedagogically constructed. Beyond documenting these limitations, this study aligns with Holmboe’s reconceptualization of WBA as a mechanism for co-producing professional competence between supervisors and trainees [47] – a vision operationalized through the bidirectional rotation evaluation system and the iterative refinement of assessment practices across cycles.

Care Ethics as a Design Principle for Professionalism Assessment

The most distinctive theoretical contribution of this study is integrating care ethics – as articulated by Noddings [23], Tronto [24], and Camps [25] – into the architecture of CBME assessment design. Rather than treating care as an aspirational dimension of clinical practice assessed separately from technical competence, this framework proposes attentiveness, recognition, relational responsibility, and responsiveness to vulnerability as constitutive principles of the assessment process. This position aligns with Doukas et al. [48], whose scoping review found that virtue and care ethics frameworks remain underutilized in medical education despite robust evidence of their relevance.

A particularly significant finding is that shared vulnerability — experienced simultaneously by patients, residents, and faculty — functions as a pedagogical space rather than a deficit to be eliminated. Camps' [25] argument that vulnerability is a constitutive feature of human existence was empirically confirmed: residents who experienced their fragility as acknowledged and pedagogically held reported greater ethical attentiveness to patient vulnerability. The hidden curriculum of professionalism — documented by Hafferty [9] as the most powerful source of professional socialization — emerged in this study as the central site of both assessment failure and transformation. Making professionalism assessable within CBME therefore requires, as Puig Rovira [21] argued, transforming the moral character of the educational institution itself. The Ten-Principle Assessment Charter — developed collaboratively with faculty and residents — operationalizes this framework by explicitly articulating the professional values, relational commitments, and ethical responsibilities constitutive of critical care medicine identity.

However, the relational and participatory architecture of this framework — including biweekly co-design sessions and longitudinal mentorship structures — may be difficult to sustain at scale in larger programs or resource-constrained contexts, a limitation that future implementation research should address [20]. While the relational turn in assessment proposed here addresses the limitations of standardized instruments, it also raises legitimate concerns about new forms of bias — including proximity effects and power asymmetries — that may arise when assessment becomes embedded in mentorship relationships [46]. The reflexivity strategies implemented in this study offer a partial response but cannot fully eliminate these risks.

Critical Pedagogy, PAR, and the Latin American Contribution

The methodological and epistemological grounding of this study connects to a tradition of critical educational inquiry that is explicitly Latin American in its origins and commitments. Freire's pedagogy of the oppressed established the foundational principle that learners are not passive recipients of expert knowledge but co-constructors of educational reality [49] — a principle operationalized through participatory co-design cycles that positioned residents, faculty, nurses, patients, and university educators as active agents in transforming assessment. The dialogue between assessors and assessed, which emerged as the central cultural transformation in Cycle 4, is a direct expression of Freirean dialogical education. Jara's systematization of experiences provided the methodological bridge between this critical pedagogical tradition and the institutional context of critical care residency training [33], enabling the recovery of living institutional knowledge as the foundation for educational transformation. Carr and Kemmis [16] provided the action research architecture that converted this recovered knowledge into iterative educational action.

This Latin American grounding is not merely contextual but a substantive contribution to the global CBME literature, which has been predominantly shaped by North American and European frameworks. Colombia's model of critical care medicine as a primary postgraduate specialty creates a distinctive trajectory in which residents progressively assume the full responsibilities of intensivists throughout training — making the relational, ethical, and identity-forming dimensions of professionalism particularly

consequential from the earliest stages of residency. Assessment systems designed for this context cannot be directly imported; they must be co-constructed within it [50] (Table 3).

Beyond Professionalism: Integrating Competencies Through a Pedagogy of the Whole

An unexpected and theoretically significant finding was that strengthening professionalism assessment required addressing the program's broader competency architecture. Consistent with Perkins' argument for "making learning whole" [51], attempts to assess professionalism in isolation reproduced the reductionist logic the study sought to overcome. The curricular restructuring of Cycle 4 positioned early rotations as immersive encounters with the full demands of intensive care, allowing professional identity to develop in relation to the whole of practice rather than its fragmented components. Monrouxe's characterization of professional identity formation as a becoming that is fundamentally relational and narratively structured [18] reinforces this finding: identity requires engagement with the whole of professional practice — its technical, relational, ethical, and institutional dimensions simultaneously. This integrated approach also resonated with Cruess, Cruess, and Steinert's framework [10], which positions professional identity formation not as an add-on competency but as the organizing purpose of medical education.

The Pedagogy of Critical Attentiveness is more than a local assessment innovation: it is a theoretical proposition for the field. Unlike frameworks that treat professionalism as a single competency among many or that treat assessment as a measurement event separate from the educational relationship, the Pedagogy of Critical Attentiveness holds that assessment is itself a pedagogical act of care — one that develops clinical competence, professional identity, and ethical responsiveness. In this sense, it extends Van der Vleuten's programmatic assessment principles [11] beyond their psychometric foundations, grounding them in the relational and ethical conditions that make formative assessment educationally meaningful rather than merely technically sound.

Table 3. Theoretical, methodological, empirical, practical, and contextual contributions of the study to Competency-Based Medical Education Literature

Type of contribution	What this study shows	Implication for CBME
Theoretical	Integrates care ethics (Noddings, Tronto, Camps) with CBME assessment design, proposing attentiveness, recognition, relational responsibility, and responsiveness to vulnerability as constitutive principles of assessment – not merely aspirational values. Produces the Pedagogy of Critical Attentiveness as an original theoretical construct.	Extends programmatic assessment theory beyond its psychometric foundations, grounding it in the relational and ethical conditions that make formative assessment educationally meaningful. Offers a theoretically coherent response to Lingard's and Hodges' critiques of reductionist competency frameworks.
Methodological	Demonstrates the feasibility of participatory educational action research in postgraduate medical training, integrating systematization of experiences (Jara Holliday), reflexive thematic content analysis (Braun & Clarke), and interpretive inquiry into lived experiences (Van Manen) within a single four-cycle research design.	Provides a replicable PAR model for assessment co-design in Latin American and LMIC contexts, demonstrating that educational transformation can be grounded in the recovery of institutional historical memory as a methodological resource.
Empirical	Provides multi-source evidence of the knowing–doing gap in professionalism knowledge (n=105), psychometric limitations of WBA instruments (n=146 records, 41 assessors), and the mechanisms through which professionalism becomes evaluatively invisible in CBME – including halo effects, ceiling effects, and the systematic absence of formative feedback.	Documents a specific pattern of assessment failure from a LMIC critical care context, contributing empirical evidence for WBA instrument reform in competency-based residency programs. Identifies shared vulnerability and recognition as underexplored mechanisms of professional identity formation.
Practical	Produces five interconnected lines of educational action – the Rally de Competencias Críticas, bidirectional rotation evaluation, Praktika (EPA-based digital logbook), interprofessional simulation and emotional intelligence curriculum, and curricular restructuring – as replicable innovations grounded in co-design evidence.	Demonstrates that participatory assessment design activates resident educational agency beyond the formal curriculum, generating community-building and mental health support proposals that CBME frameworks rarely address. The Ten-Principle Assessment Charter operationalizes care ethics as a practical professional commitment.
Contextual	Situates CBME assessment reform within a Latin American critical pedagogy tradition (Freire, Jara Holliday, Carr & Kemmis), offering an epistemological perspective that challenges the predominantly North American and European orientation of the CBME literature (Frambach et al., 2012).	Demonstrates that globally relevant CBME innovations can emerge from Southern contexts and that the participatory co-design of assessment systems may be particularly consequential in settings where hierarchical educational cultures have historically silenced resident and patient voice.

CBME = competency-based medical education; EPA = entrustable professional activity; LMIC = low- and middle-income country; PAR = participatory action research; WBA = workplace-based assessment.

Note: The Pedagogy of Critical Attentiveness and the Ten-Principle Assessment Charter are original contributions of this study, co-constructed with residents, faculty, patients, and interprofessional team members through four iterative action research cycles (2022–2026).

Limitations

Several limitations should be acknowledged. The study was conducted within a single institutional context — one critical care residency program at a university hospital in Colombia — limiting direct generalizability. The participatory design, while methodologically rigorous, placed the principal investigator and co-investigator in insider roles that required explicit reflexivity throughout. The Praktika digital platform was in an early stage of implementation at the time of this report, and its longitudinal impact on assessment culture and EPA-based progression remains to be documented. The psychometric analysis was conducted on a limited sample from a single program; findings should be interpreted as diagnostic rather than generalizable. Assessment culture transformation is a slow process; the changes documented here represent the first iterations of a continuing improvement spiral rather than a stable endpoint.

Future Directions

Future research should evaluate the longitudinal effects of the Praktika digital platform on EPA-based assessment decisions and milestone progression. Comparative studies across critical care programs would assess the transferability of the participatory co-design approach. Collaborative validation of the Pedagogy of Critical Attentiveness across postgraduate specialties and healthcare contexts would strengthen its generalizability as a contribution to competency-based assessment theory. Patient-reported outcomes as measures of professionalism development — introduced in this study through patient participation in the qualitative cycle — represent a particularly promising avenue for future CBME research.

Conclusions

This study shows that assessing professionalism in critical care residency training is not primarily a technical problem but a pedagogical, cultural, and relational one. The gap between the declared centrality of professionalism in CBME and the assessment structures that operationalize it was not caused by instrument failure alone but by structural tensions accumulated over six decades of institutional history — between administrative compliance and professional being, between grading and learning, and between the belief that professionalism is innate and the evidence that it must be deliberately cultivated.

Addressing this gap requires not better tools but a transformation of the conditions under which professionalism is understood, taught, assessed, and lived. The Pedagogy of Critical Attentiveness — co-constructed with residents, faculty, patients, interprofessional team members, and university educators

through four iterative action-research cycles — offers a care-ethics-informed response to this challenge. By repositioning assessment as a pedagogical act of care, it integrates attentiveness, recognition, relational responsibility, and responsiveness to vulnerability into the architecture of CBME. The five interconnected lines of action developed in this study — from the *Rally de Competencias Críticas* to *Praktika*, interprofessional simulation, and curricular restructuring — demonstrate that a meaningful transformation of assessment culture is achievable when it is participatory, iterative, and ethically grounded.

Beyond its local context, this study contributes to the international CBME literature by showing that globally relevant assessment innovations can emerge from Latin American educational traditions — traditions that center dialogue, critical reflection, and the recovery of lived institutional knowledge for educational transformation. The findings suggest that residency programs worldwide may benefit from reexamining not only what they assess but also how, with whom, and the kind of professional identity they seek to cultivate (Fig. 3).

Abbreviations

ABIM: American Board of Internal Medicine; ACGME: Accreditation Council for Graduate Medical Education; CanMEDS: Canadian Medical Education Directives for Specialists; CBME: Competency-Based Medical Education; CoBaTrICE: Competency-Based Training in Intensive Care Medicine in Europe; EPA: Entrustable Professional Activities; ICU: Intensive Care Unit; IQR: Interquartile Range; LMIC: Low- and Middle-Income Countries; PAR: Participatory Action Research; PCA: Principal Component Analysis; PIF: Professional Identity Formation; SRQR: Standards for Reporting Qualitative Research; SQUIRE-EDU: Standards for Quality Improvement Reporting Excellence in Education; WBA: Workplace-Based Assessment.

Declarations

Ethics approval and consent to participate: This study was classified as minimal-risk research under Colombian health research regulations (Ministerio de Salud, Resolución 8430, 1993). Ethical approval was granted by the Ethics Committee of the School of Medicine and the Research Committee of the School of Education at Universidad de La Sabana (protocol MEDPHD-14-2025), and by the Ethics Committee of Fundación Clínica Shaio (CEIFS; protocol DIB-24-02). All participants provided written informed consent. The study adhered to the Declaration of Helsinki (World Medical Association, 2025).

Consent for publication: Written informed consent for publication of anonymized quotations and data was obtained from all participants as part of the informed consent process prior to data collection.

Availability of data and materials: The doctoral thesis from which this study derives is publicly available in the Open Science Framework (OSF) repository at <https://osf.io/rbwud/overview?>

view_only=176600a91dcd45b88acaafe20031240f.

Qualitative data (interview transcripts, focus group recordings, and field journal entries) are not publicly available due to ethical restrictions protecting participant confidentiality, in accordance with the informed consent agreements signed by all participants. Requests for de-identified data may be directed to the corresponding author.

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Authors' contributions CJV conceptualized the study, designed and executed all research phases, collected and analyzed data, and drafted the manuscript. CMP contributed to the action phase design and implementation, participated in data collection and co-design sessions, and critically revised the manuscript. LFB contributed to the philosophical and theoretical framing of the study – including the integration of care ethics, phenomenological methodology, and critical pedagogy – and critically revised the manuscript for intellectual content. EHH contributed to the theoretical framing, supervised the doctoral research process, and critically revised the manuscript. All authors read and approved the final version.

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Figures

Participatory educational action research — 2022–2026

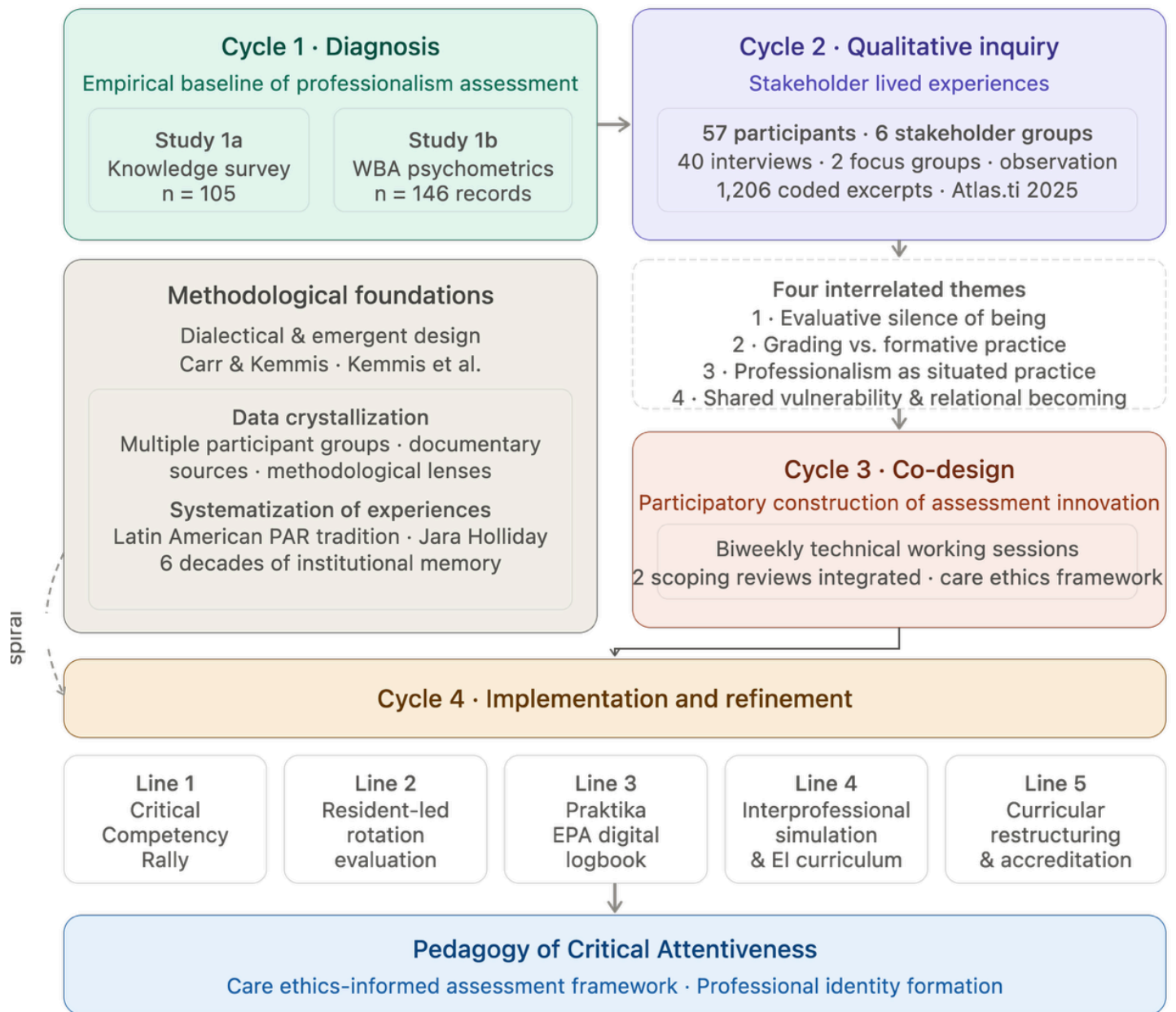


Figure 1

Co-Constructing a Care Ethics-Informed Assessment Framework for Professionalism and Professional Identity Formation Through Participatory Educational Action Research (2022–2026).

CBME = competency-based medical education; EI = emotional intelligence; EPA = entrustable professional activity; PAR = participatory action research; SRQR = Standards for Reporting Qualitative Research; SQUIRE-EDU = Standards for Quality Improvement Reporting Excellence in Education; WBA = workplace-based assessment.

Aligning Pedagogy and Assessment with Professional Identity Formation

in Competency-Based Medical Education (CBME)

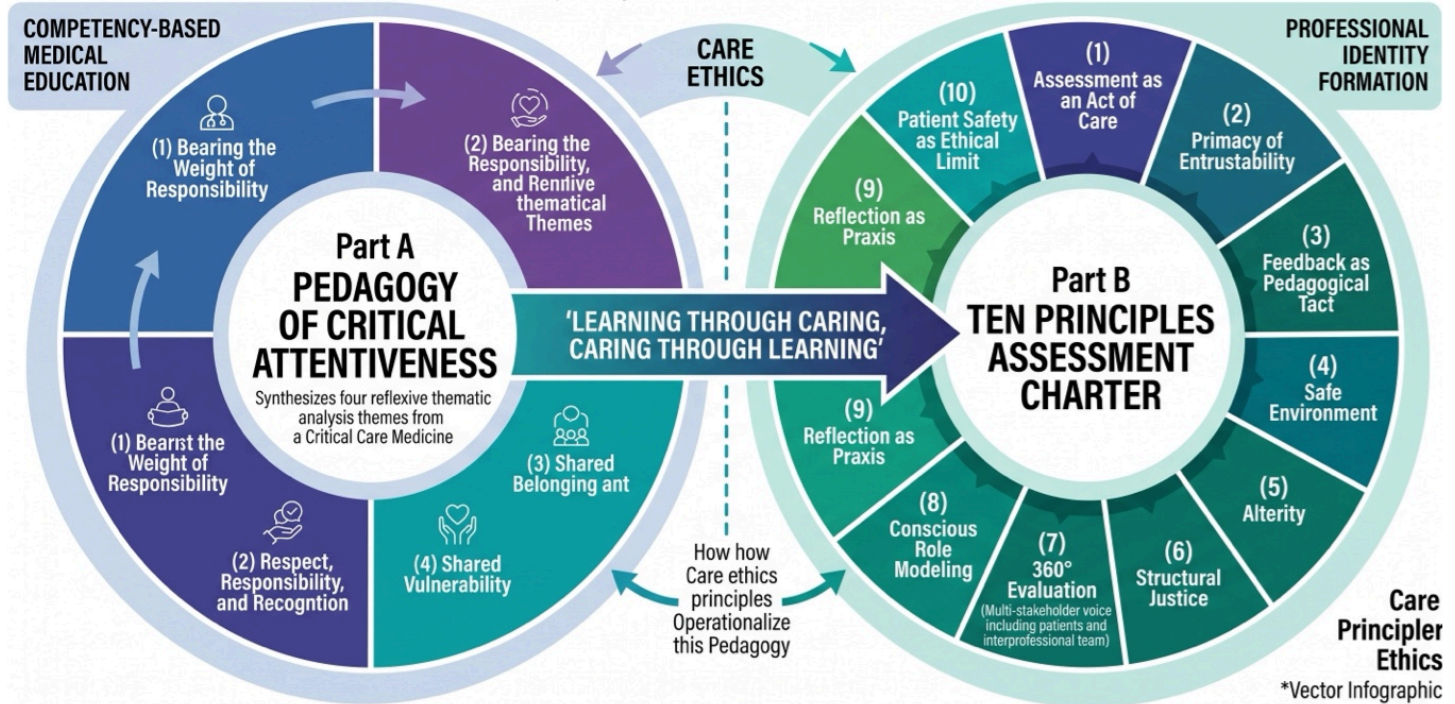


Figure 2

The Pedagogy of Critical Attentiveness and the Ten-Principle Assessment Charter: A Care Ethics-Informed Framework for Professionalism and Professional Identity Formation in Competency-Based Medical Education.

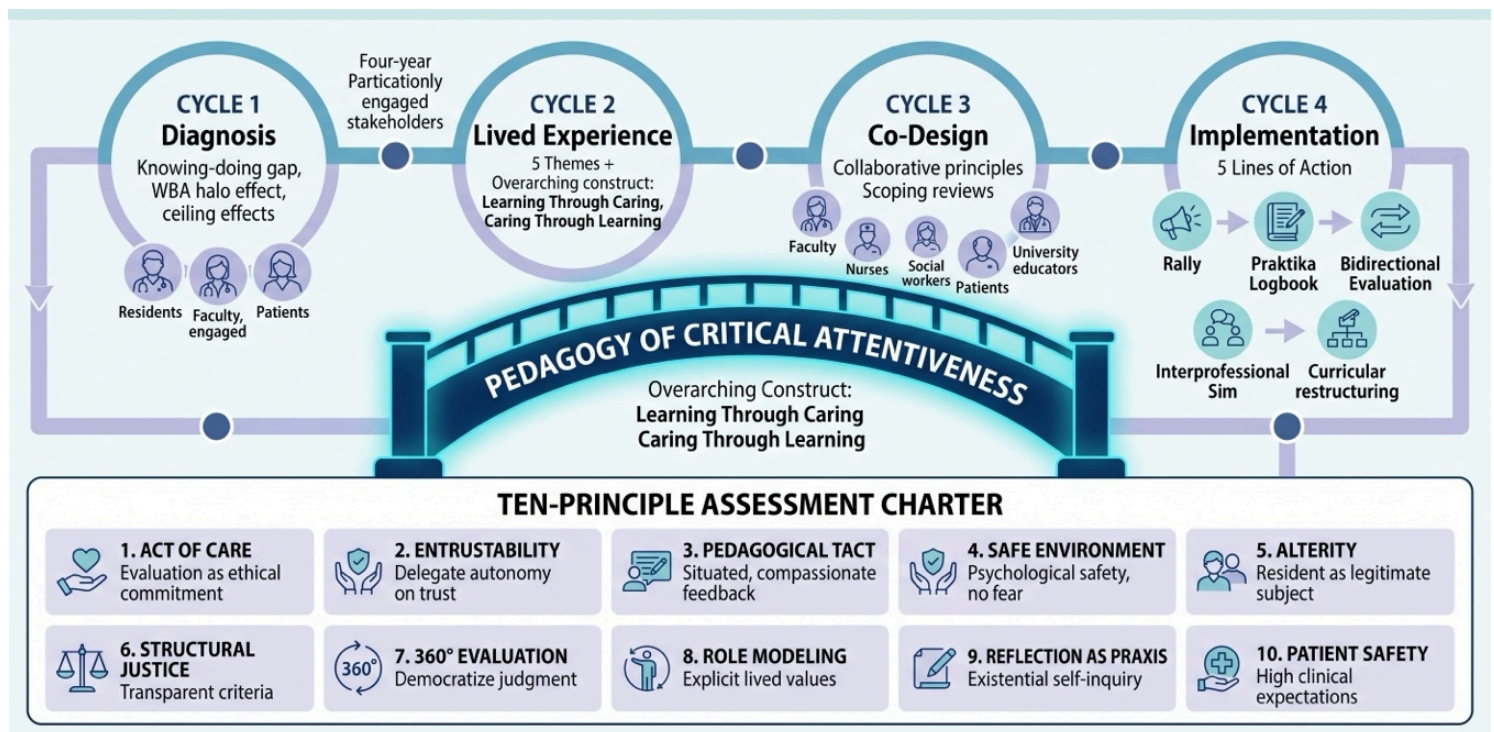


Figure 3

Participatory Educational Action Research Framework for Programmatic Assessment of Professionalism and Professional Identity Formation in Critical Care Medicine.

Note: This graphical summary details the four-year participatory educational action research (PAR) process (2022–2026) conducted to address structural limitations in competency-based medical education (CBME) assessment

Supplementary Files

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- [AdditionalFile1SRQRChecklist.docx](#)
- [AdditionalFile2SQUIREEDUChecklist.docx](#)
- [AdditionalFile3InterviewGuidesFINALv2.docx](#)
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