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Building a Transparent, Recognition-Driven Ecosystem for Educator Development in Ecuador's Higher Education

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Abstract

This conference paper reports on a multi-year higher-education reform in Ecuador that integrates educator capacity building with system-level mechanisms for transparency, professional recognition, and quality assurance. Anchored in a national needs analysis and labor-market foresight, the reform responds to reskilling pressures by coordinating four mutually reinforcing pillars: (1) institutional Capacity Development Centers (CDCs) that provide structured, practice-oriented support services; (2) competency-aligned professional development programs (PDPs), designed and quality-assured against international frameworks and connected to micro-credentialing pathways; (3) a digital backbone—learning management and learning analytics—to enable evidence-informed teaching enhancement and institutional decision-making; and (4) a transparency and open-government framework that embeds integrity, public accountability, and citizen/stakeholder engagement into higher-education governance. Implementation is supported through the projects EENTITLE, ETALENT, and EPROGRES and a geographically distributed university network acting as a national "delivery spine." Early implementation evidence includes the launch of five CDCs, PDP participation across the CDC network, and educator recognition through the ENTER Register via the international professional educator (iPER) awarding pathway. Methodologically, the paper adopts a design/implementation structure combining stakeholder co-design, iterative PDP development and revision, CDC piloting with defined service portfolios (advising, portfolio coaching, micro-credentials), and staged deployment of LMS capabilities with learning analytics embedded into improvement cycles. A governance workstream operationalizes transparency standards and indicators and tests them as a proof-of-concept within educator evaluation and recognition. We propose a triangulated evaluation model spanning institutional (capacity and uptake), instructional (competence and practice change), and governance (transparency and trust) outcomes. The paper contributes (i) a transferable model for educator development at scale in low-resource contexts; (ii) an integrated pathway from PDP participation to professional recognition that increases the social visibility of excellent educators; and (iii) a practical framework for coupling open-government principles with quality assurance to sustain reform beyond project life.

1. Context and problem statement

Across many higher-education systems, educator development has moved from a "nice to have" to a strategic necessity. Three forces are converging. First, the structure of skill demand is shifting under digitalization, demographic change, and evolving sectoral composition, with growing emphasis on adaptable competences (problem solving, collaboration, digital fluency, innovation) across disciplines. Second, public expectations of universities have expanded: citizens demand not only access and completion, but demonstrable learning outcomes, employability relevance, and integrity in institutional decision-making. Third, the credibility of professional recognition—whether for programs, institutions, or individuals—depends increasingly on transparent criteria, evidence-based judgments, and fair due process.

In Ecuador, these dynamics are intensified by a national agenda that explicitly links higher education, knowledge policy, and "talent" development to longer-term social and economic transformation. The national foresight agenda for 2035 signals that the mix of professionals

produced by universities should evolve, with strong growth projected in service-oriented areas and a notable increase in engineering/industry/construction as a share of the professional profile (while some traditional clusters decline in relative share). Although such projections are not deterministic forecasts, they are high-value policy signals: they describe the direction of reskilling pressure and the urgency of modernizing curricula, teaching, and quality systems to avoid lagging behind economic and social needs.

However, "training" alone rarely transforms teaching at scale. Research on professional development repeatedly shows that short, disconnected workshops are unlikely to produce sustained changes in instructional practice or student outcomes unless they are coherent, practice-based, sustained over time, and reinforced by local support and leadership structures. In parallel, a purely internal approach to educator development can struggle to build legitimacy: if professional recognition and promotion decisions are perceived as opaque or inconsistent, even high-quality training may not translate into trust, motivation, and social recognition.

This paper addresses the challenge as a system design problem: how can a higher-education system create an ecosystem that (a) upgrades educator competence for changing skill demands, (b) embeds improvement in institutional structures, (c) uses digital infrastructure for evidence-informed decisions, and (d) makes recognition and governance transparent and trustworthy?

We report on a multi-year reform model implemented through the projects EENTITLE, and ETALENT, in Ecuador and structured around four mutually reinforcing pillars: Capacity Development Centers (CDCs), competency-aligned professional development programs (PDPs), a digital backbone using LMS + learning analytics, and an open-government transparency framework. We also report early implementation evidence (five CDCs launched; PDP participation across CDCs; educator recognition through the ENTER Register with iPER awards) and propose an evaluation model designed to be rigorous yet feasible in low-resource environments.

2. National needs analysis: reskilling pressures and system constraints

2.1 Reskilling signals from national foresight

Ecuador's long-term agenda for the knowledge and human talent sector (horizon 2035) provides an explicit policy rationale for reskilling: the economy and labor market are expected to demand a different distribution of professional profiles, implying that higher education must adapt what it teaches and how it teaches. The agenda's message is not simply "produce more graduates" but "produce graduates with relevant competences," which brings educator capability into the center of reform. If educators lack support to redesign learning outcomes, teaching strategies, and assessment for new competence demands, curricular reforms remain cosmetic.

Transversal competences must be systematically developed across disciplines. If the economy's profile shifts, most graduates—regardless of field—will need stronger data literacy, digital competence, communication, teamwork, project work, and ethical judgment. This requires teaching approaches that go beyond content transmission.

Outcome-based education needs educator competence and institutional support. Competence orientation demands clear learning outcomes, aligned assessment, and feedback loops—capabilities that must be developed and sustained through structures, not only individual effort.

Educator development must be connected to recognition and incentives. In many systems, educators face heavy workloads and limited reward for improving teaching. A credible recognition pathway can strengthen motivation, professional identity, and social visibility.

2.2 System constraints that shape feasible reform

National ambition meets institutional reality. In many universities, educator development is fragmented: training opportunities exist but may be voluntary, unevenly distributed, and disconnected from course redesign. Without structured support, educators may complete training but struggle to translate it into practice.

Digital infrastructure can also be underutilized. Learning management systems may function as repositories rather than engines of improvement. Learning analytics—where present—may not be integrated into teaching enhancement cycles, or may raise concerns about surveillance if governance is unclear.

Finally, governance legitimacy matters. Higher-education reforms are unlikely to be sustainable if citizens and stakeholders perceive decisions about quality, performance, or recognition as opaque. Open-government principles—transparency, participation, accountability—are increasingly recognized as central to trust in public institutions. This is especially relevant for educator recognition systems: if criteria and decisions are not explainable, recognition can be dismissed as symbolic or politicized.

Against this backdrop, the reform's design goal is not only to deliver professional development, but to build an integrated ecosystem that addresses capability, structure, evidence, and legitimacy together.

3. Ecosystem model: four mutually reinforcing pillars

The core design hypothesis is simple: educator reskilling at scale requires an ecosystem, not a standalone training program. The ecosystem coordinates four pillars that solve different parts of the system problem and reinforce one another.

Table 1 summarizes the four pillars, their operational logic, and their immediate outputs.

Table 1. Four pillars and their operational mechanisms

Pillar	Core functions	Key mechanisms	Primary outputs
(1) Capacity Development Centers (CDCs)	Institutional engines for educator support	Advising, instructional design clinics, mentoring, portfolio coaching, micro-credential services	Service uptake; course redesign support; educator evidence portfolios

Pillar	Core functions	Key mechanisms	Primary outputs
(2) Professional Development Programs (PDPs)	Competency-aligned educator learning pathways	Practice-based modules, assessment of applied artifacts, peer learning	Competence gains; validated artifacts; stackable micro-credentials
(3) Digital backbone (LMS + analytics)	Evidence-informed teaching and management	Dashboards, monitoring cycles, data-guided coaching	Analytics-informed improvements; monitoring reports
(4) Transparency/open-government	Legitimacy and trust mechanisms	Standards & indicators; public criteria; traceable decisions; participation channels	Transparent recognition; public accountability; sustained trust

3.1 Pillar 1: CDCs as institutional engines for practice change

Capacity Development Centers are designed as local "change capacity" nodes. Their purpose is not merely to offer workshops but to enable practice change by providing ongoing support services. This aligns with what professional development research shows: sustained change requires opportunities for practice, feedback, and coaching, supported by organizational conditions.

CDC service logic. CDCs deliver a portfolio that typically includes:

- Instructional design support: course redesign sprints; alignment of outcomes–teaching–assessment; assessment blueprinting.
- Teaching innovation support: active learning, project-based learning, and authentic assessment.
- Mentoring and peer learning: mentoring circles, peer observation protocols, communities of practice around teaching challenges.
- Portfolio and recognition guidance: evidence curation, reflective narratives, and peer-review preparation for recognition systems.
- Micro-credential navigation: advising on PDP pathways and stackable credentials.

Early implementation: Five CDCs have been launched, providing a distributed backbone for scaling educator development and enabling local uptake rather than relying on centralized training alone.

3.2 Pillar 2: Competency-aligned pdps linked to micro-credentials

PDPs are designed as coherent pathways aligned to competency frameworks and recognition criteria, not as isolated sessions. Their central design features are:

- Competency mapping: explicit learning outcomes, aligned with international expectations of good teaching and—where relevant—program outcome frameworks (e.g., outcome-based education in engineering as a flagship).
- Practice-based assignments: educators must produce artifacts (e.g., redesigned assessment tasks, learning outcome maps, rubrics, reflective analyses) that demonstrate competence-in-use.

- Peer review and feedback: structured peer exchange to strengthen quality and build shared standards.
- Iterative improvement: modules are piloted, evaluated, and revised with stakeholder input.

Micro-credentials as a bridge between learning and recognition. The reform uses micro-credentials to make competence gains visible and portable. The European Council Recommendation on micro-credentials provides a widely referenced policy definition and quality expectations that can guide design (clarity of learning outcomes, assessment, transparency of credential information, and portability). While Ecuador's system context differs, the micro-credential concept supports a crucial function: it creates an intermediate recognition layer between training participation and high-stakes professional recognition or promotion decisions.

3.3 Pillar 3: Digital backbone—LMS and learning analytics for evidence-informed improvement

The digital backbone is not treated as an IT implementation but as a pedagogical and governance asset. The LMS provides delivery and resource infrastructure, while learning analytics provides evidence for improvement cycles.

Learning analytics is understood as an emerging discipline that uses educational data to understand and optimize learning and environments. In this model, analytics is embedded into CDC and PDP processes (coaching, reflection, and monitoring) rather than used for surveillance. Key use cases include:

- Course-level improvement: participation and completion patterns; formative assessment engagement; feedback timeliness; identification of bottlenecks.
- Program-level coherence: alignment checks for outcomes and assessments; progression patterns; performance gaps.
- Institutional monitoring: PDP participation and completion; CDC service uptake; correlation of support services with course redesign actions.

Governance safeguards. Because analytics can create legitimate concerns, the model includes data governance principles: clear purpose limitation (improvement), access roles, transparency about what is collected and why, and feedback loops that allow educators to contest or contextualize interpretations. These safeguards align with the broader open-government pillar (see below).

3.4 Pillar 4: Transparency and open-government framework as a legitimacy layer

Open government matters in higher education because universities are public-trust institutions: their legitimacy depends on integrity, accountability, and meaningful stakeholder engagement. OECD work on open government emphasizes transparency, participation, and accountability as core elements for strengthening trust and improving public governance.

In this reform, open-government principles are operationalized through standards, indicators, and tools applied to educator recognition and to governance of capacity development. Examples include:

- Public criteria and standards: clear, accessible criteria for PDP completion, micro-credentials, and educator recognition decisions.
- Decision traceability: documentation that links evidence to decisions (why an educator receives recognition; how criteria were applied).
- Conflict-of-interest management: explicit roles, declarations, and separation of advisory and decision functions in peer review.
- Participation channels: structured stakeholder input into PDP design and CDC service priorities; mechanisms for complaints and appeals.
- Public communication: reporting dashboards and narratives that explain progress, not only outputs.

This pillar addresses a key risk: reforms can fail not because they lack activity, but because they lack credibility.

4. Implementation architecture: projects, network model, and workstreams

Implementation is organized through the projects EENTITLE and ETALENT and anchored in a distributed network of leading universities across Ecuador's regions. The architecture deliberately combines local ownership with common standards: institutions retain autonomy over their internal arrangements, while the network provides shared methods, rubrics, and implementation routines that allow the reform to scale without losing coherence.

4.1 university network as the "delivery spine"

A central scaling decision is to treat the university network as the structural backbone of the reform rather than relying on a single lead institution. In practice, this enables horizontal scaling—CDC staff and educators exchange PDP content, service models, and peer-review practices across institutions—while also enabling vertical scaling, as governance bodies can adopt shared criteria, recognition pathways, and monitoring expectations. Engineering is treated as a flagship use case because its outcome-oriented culture offers a concrete anchor for learning-outcome mapping and aligned assessment that can later diffuse to other disciplines through CDC services and PDP artifacts.

As a concrete engineering-specific example, one flagship PDP module focuses on outcomes-based course redesign: educators map course learning outcomes to program outcomes, build aligned rubrics for a design or laboratory assignment, and document a small continuous-improvement cycle using student evidence. The resulting artifact is reviewed through CDC support and can then be adapted by other disciplines as a general model for alignment and evidence-informed improvement.

4.2 workstreams and sequencing

The reform is implemented through four interlocking workstreams aligned to the ecosystem pillars and sequenced to balance feasibility with ambition. First, CDCs are established and operationalized by defining a minimal viable service portfolio, piloting services with early adopters, and integrating CDC roles into institutional governance; early evidence confirms five CDCs launched. Second, PDPs are designed through iterative co-design, piloting, evaluation, and revision, ensuring that modules are competency-aligned and produce applied artifacts that can be used as evidence for improvement and recognition. Third, the digital backbone is deployed as both technology and practice: LMS adoption is supported through training and coaching, and learning analytics is embedded into improvement routines with explicit governance safeguards. Fourth, the transparency workstream follows a diagnose–design–pilot logic by mapping existing information flows and decision processes, defining

standards and indicators, and piloting tools as proof of concept in educator recognition and quality management.

4.3 design principle: coherence across pillars

A common failure mode in reforms is "component drift," where CDCs become training offices, PDPs become disconnected courses, platforms become repositories, and transparency becomes reporting theater. The ecosystem design mitigates this risk by making the interfaces explicit: CDC services directly support PDP participation and artifact development; PDP artifacts feed educator portfolios and recognition readiness; analytics informs both CDC coaching and QA monitoring; and transparency standards govern recognition decisions, conflict-of-interest management, and public reporting. This coherence aligns with professional development research emphasizing sustained, practice-based learning supported by organizational conditions and collective participation.

5. Recognition strand: ENTER Register, iPER awards, and international alignment

Recognition is positioned as a structural mechanism within the ecosystem rather than as a symbolic add-on. It helps sustain engagement in long-term professional development by making expectations explicit, linking competencies to evidence, and offering portability across institutions. By increasing the social visibility of excellent educators, recognition also supports cultural change: teaching improvement becomes a professional identity project grounded in shared standards. In this model, the ENTER Register and the international professional educator (iPER) awards serve as the external-facing pathway for recognition, complementing CDC support and PDP participation.

To remain credible, recognition must be explainable and fair. The model therefore emphasizes clear criteria linked to competencies and evidence types, portfolio guidance through CDC services, and peer review supported by rubrics and consistency checks. Transparency standards reinforce due process by clarifying roles, documenting how evidence is mapped to decisions, managing conflicts of interest, and providing functioning channels for appeals and complaints. In this way, recognition operates consistently with core quality assurance expectations that judgments must be evidence-based, consistent, and subject to review.

Although the reform targets higher education across disciplines, quality assurance alignment provides a common language and legitimacy. The Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) support student-centered learning, public information, transparency, and continuous improvement, all of which are operationalized through CDC routines, PDP design, and governance safeguards (ENQA et al., 2015). Engineering is treated as a flagship because outcome-based education and accreditation cultures provide a strong reference point for learning-outcome orientation, aligned assessment, and systematic improvement; the EUR-ACE framework standards provide a well-known benchmark that can help normalize these practices and facilitate their transfer to other disciplines within the CDC network (ENAEE, 2015).

6. Evaluation model: triangulating institutional, instructional, and governance outcomes

A key contribution of this paper is an evaluation model designed for complex reforms. Rather than relying on a single outcome metric, the model triangulates evidence across institutional capacity, instructional practice, governance legitimacy, and recognition credibility. This

structure supports learning-oriented monitoring during implementation while also preparing for more rigorous impact assessment as the reform matures.

6.1 Methods and data sources to date

This study is presented as a design-based implementation paper. At the current stage, the evidence base includes a five-CDC implementation network; co-design inputs from institutional leaders, CDC staff, and participating educators; PDP module specifications and participant artifacts; CDC service logs and portfolio-review records; and early perception data from short surveys, interviews, and focus groups where available. Quantitative evidence is used descriptively (counts, uptake, completion, service-use patterns, and LMS activity traces), while qualitative evidence is analyzed through structured thematic review focused on implementation fidelity, perceived usefulness, and early practice change. Because implementation is still ongoing, the present manuscript reports feasibility and early implementation evidence rather than causal impact estimates.

At the institutional level, evaluation focuses on CDC establishment and operational maturity, including staffing, service portfolio definition, and integration into institutional governance. Uptake is assessed through service-use patterns, breadth of participation across faculties, and evidence that institutional policies are being updated to embed CDC responsibilities. At the instructional level, evaluation examines PDP participation and completion, competence development demonstrated through practice-based artifacts and portfolios, and course redesign outcomes such as improved alignment between learning outcomes and assessment, increased use of active learning, and strengthened feedback processes. At the governance level, evaluation tracks whether criteria and standards are publicly available, whether decisions are traceable from evidence to judgment, and whether conflict-of-interest controls and participation channels function effectively; the existence and timeliness of appeals and complaints mechanisms also become indicators of legitimacy. For the recognition strand, monitoring includes the volume of applications and awards, review consistency checks, user perceptions of fairness and clarity, and the outcomes of appeals.

Recognition outcomes (ENTER/iPER).

- number of recognition applications and awards
- inter-rater reliability or consistency checks in peer review
- user satisfaction with fairness and clarity
- appeals volume and outcomes

Table 2 summarizes the evaluation layers, indicators, principal data sources, and intended uses.

Table 2. Evaluation framework and data sources

Outcome layer	Indicators	Data sources	Use
Institutional (CDCs)	CDCs operational; service uptake; staffing & procedures; policy integration	CDC logs; policy docs; interviews	scaling readiness; institutionalization
Instructional (PDPs)	completion; competence artifacts; course redesign evidence; student feedback	PDP assessments; portfolios; surveys; LMS logs	practice change and learning-outcome alignment

Outcome layer	Indicators	Data sources	Use
Governance (transparency)	public criteria; traceability; participation; COI compliance; appeals	audits; minutes; public portals; appeals logs	legitimacy, accountability, trust
Recognition (ENTER/iPER)	applications; awards; review consistency; appeal resolution	register data; rubrics; panels	credibility and fairness
System alignment	QA alignment; risk register; external peer feedback	QA reports; risk dashboard; peer review	sustainability and improvement

The evaluation approach fits the design/implementation nature of the reform. Co-design with national and institutional stakeholders strengthens contextual fit and ownership, while iterative PDP pilots enable rapid feedback and continuous improvement. Mixed evidence - combining quantitative monitoring (uptake, completion, platform logs) with qualitative insight (interviews, focus groups, portfolio reviews) - helps explain both what changes occur and why they occur, consistent with professional development research that calls for stronger conceptualization and measurement of PD impact (Desimone, 2009).

Two risks require explicit governance. First, there is a risk of activity without impact, where CDCs and PDPs generate participation but do not translate into improved teaching practice. The model mitigates this by requiring practice-based artifacts, embedding coaching and peer review, and monitoring course redesign outputs rather than attendance alone. Second, learning analytics can be misinterpreted or used for surveillance rather than improvement. Mitigation is built into the data governance principles: clear purpose limitation to teaching enhancement, role-based access, transparency about what is collected and why, and mechanisms that allow educators to contextualize or contest interpretations. Equity risks are addressed through flexible delivery modes, local support via CDCs, and monitoring participation patterns to identify barriers across regions or groups.

7. Early outcomes and emerging lessons (implementation evidence)

This paper reports early implementation evidence rather than final impact evaluation. The early outcomes are important because they demonstrate that the ecosystem's delivery mechanisms are functioning and that value creation is occurring during implementation, not only at the end of the reform cycle.

As of February 2026, the implementation snapshot is modest but concrete: five CDCs are operational, PDP activity is documented across all five CDC sites, and the recognition pathway is active with iPER awards already issued.

Indicator (as of Feb. 2026)	Status
Operational CDCs	5
CDC sites with documented PDP activity	5 of 5
Recognition pathway	Active; iPER awards issued

Five CDCs have been launched, establishing the institutional layer needed for sustained educator development. This milestone shifts capacity building from ad hoc training to a service model that can provide ongoing coaching, instructional design support, and portfolio guidance close to where educators work.

PDP participation is reported across the CDC network, indicating engagement beyond isolated pilot sites. This suggests that the distributed delivery spine is working: educators can access learning pathways and support locally while operating under shared standards and common module designs that facilitate comparability and mutual learning across institutions.

Educator recognition has been operationalized through the ENTER Register, with iPER awards granted. This is strategically significant because recognition is not postponed to a later project phase; instead, it serves as an early incentive and a visible signal that teaching excellence can be evaluated through evidence and peer review, strengthening professional identity and public visibility.

Three lessons are already emerging from implementation. First, CDCs reduce the "activation energy" for change: even motivated educators often struggle to redesign courses without practical support, and CDC clinics, coaching, and portfolio guidance help translate PDP learning into applied outcomes. Second, recognition strengthens coherence and motivation by clarifying expectations and making the pathway from PDP participation to professional standing visible and credible. Third, transparency functions as an operational tool rather than decoration: publishing criteria, documenting decisions, and providing appeal channels improves perceived fairness, helps manage disagreements, and reduces resistance during implementation.

8. Discussion: transferability and contribution to global engineering education

Although framed as system reform across disciplines, the model contributes directly to global engineering education in three ways.

Engineering education often has strong external quality signals (accreditation expectations, outcome-based frameworks) that can catalyze teaching improvement. The reform uses this as a diffusion engine: educator competencies needed for outcomes-based engineering programs (learning outcome alignment, assessment design, continuous improvement) are developed through PDPs and supported by CDCs, and then adapted and transferred to other disciplines. This emphasis on diffusion and institution-level change is also consistent with prior engineering education change literature (Borrego et al., 2010; Henderson et al., 2011; Graham, 2018).

The coupling of educator development with QA (internal monitoring + external peer logic) addresses a common gap: systems often evaluate programs but underinvest in educator capability to meet quality expectations. ESG principles provide a widely adopted reference for QA culture and public information, while the ecosystem provides the capacity and evidence mechanisms to operationalize them.

Sustainability is often the weakest link in externally funded reforms. Embedding open-government principles into governance, recognition, and public reporting strengthens legitimacy and makes it harder for reforms to disappear quietly when projects end. OECD work positions open government as an approach to improve governance quality and trust—both prerequisites for sustaining reform.

The model is transferable if three conditions hold:

1. A distributed institutional support structure exists or can be created (CDCs or equivalent).
2. Professional development is designed as competency pathways with evidence, not attendance.
3. Recognition and governance are transparent, with criteria, traceability, and due process.

In low-resource contexts, these conditions can be met incrementally: CDC service portfolios can start small; micro-credentials can be limited to a few high-impact modules; analytics can begin with basic LMS indicators; transparency tools can start with publication of criteria and decision traceability.

9. Conclusion

This paper presented a transparent, recognition-driven ecosystem for educator development in Ecuador that integrates four pillars: CDCs, competency-aligned PDPs with micro-credentials, a digital backbone (LMS + learning analytics), and an open-government transparency framework. The reform addresses educator reskilling as a system problem—capability, structure, evidence, and legitimacy—rather than a training problem alone. Early implementation evidence indicates that five CDCs are operational, PDP participation occurs across the CDC network, and educator recognition through the ENTER Register with iPER awards has been achieved.

The model's core contribution is the integration of professional learning with credible recognition and transparent governance, supported by quality assurance principles and evidence-informed improvement cycles. For global higher education—and engineering education in particular—the approach offers a practical pathway to scale educator professionalism while strengthening public accountability and sustaining reform beyond project life.

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