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Rethinking Assessment Practices Through AI And Alternative Approaches: A Case From Teacher Education In Colombia

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Abstract

Background: Teacher education programs in the Global South face persistent challenges in implementing fair and context-responsive assessment practices. In southern Colombia, public universities operate within structural constraints including limited funding, heavy workloads, and sociocultural diversity that complicate the adoption of innovative and equity-oriented evaluation models. At the same time, Artificial Intelligence (AI) is reshaping pedagogical decision-making, raising both possibilities and ethical concerns regarding teacher agency, cultural relevance, and data governance.
Aims: This study examines how AI-supported alternative assessment practices can enhance reflective learning, autonomy, and critical awareness among pre-service English teachers in southern Colombia while remaining aligned with decolonial and context-sensitive educational principles.
Methods: Drawing on a qualitative descriptive design, the research analyzes classroom observations, student-produced assessment artifacts, and reflective journals collected during a 16-week university course on formative and process-based evaluation.
Result: Findings indicate that AI-supported assessment expanded students' multimodal design repertoires, strengthened epistemic agency in their interaction with technological tools, and fostered deeper reflection on validity, coherence, and contextual relevance. However, these developments were mediated by structural constraints, including digital access gaps and practicum realities in under-resourced schools.
Conclusion: The study concludes that AI-assisted alternative assessment can foster more equitable and context-responsive learning experiences when integrated dialogically and critically, grounded in decolonial commitments, and attuned to institutional and material realities in the Global South.

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INTRODUCTION

Assessment practices in teacher education in Colombia, and in much of Latin America, have long been shaped by traditions that favor standardization, memorization, and product-oriented forms of evaluation. As Ortiz and Buitrago (2017) note, evaluation in the Colombian educational system has tended to operate less as a formative process and more as a mechanism of social classification. Within this framework, assessment becomes a tool of power, used to select, categorize, and rank students according to institutional and societal expectations of what an "educated person" should look like. This logic is further reinforced by national and international testing regimes that define academic success through measurable outputs tied to quality indicators. What often gets lost in this process are the complex sociocultural dynamics that influence how students learn. As a result, traditional assessment not only restricts opportunities for autonomy and critical thinking, it also reproduces existing inequalities by privileging those who most closely fit dominant educational norms.

Developing teachers' assessment literacy has therefore become a key concern in contemporary research on language education and teacher preparation (Stiggins, 1991; Giraldo, 2018).
At the same time, the rapid emergence of artificial intelligence (AI) introduces new tensions and possibilities for assessment. While AI tools offer opportunities for formative feedback and reflective learning (Black & Wiliam, 1998; Hattie & Timperley, 2007; Carless, 2011), their integration requires pedagogical, ethical, and technological competencies that many teacher education programs are still developing. This challenge is particularly pronounced in Colombia, where educational inequalities intersect with persistent digital divides (Agudelo Ramírez & Zuluaga Cruz, 2022). Although national initiatives have expanded connectivity in recent years, access remains uneven, especially in rural and economically marginalized regions. As a result, teachers often navigate limited infrastructure, unstable internet access, and insufficient digital training, conditions that complicate the meaningful integration of AI into everyday assessment practices.

Beyond technological constraints, teacher readiness in Colombia is also shaped by heavy workloads, limited professional development opportunities, and policy frameworks that rarely prioritize transformative changes in assessment. Although national initiatives such as the Política Nacional de Educación Digital seek to strengthen digital strategies, implementation remains uneven, reflecting the persistent gap between policy aspirations and the everyday realities of teachers and students (Ministerio de Educación Nacional [MEN], 2022).

Integrating AI into assessment, therefore, cannot be understood merely as a technical upgrade. It requires confronting entrenched evaluation traditions, addressing sociopolitical inequalities, and fostering context-responsive and ethically grounded pedagogical practices. Current debates on AI in education highlight both the pedagogical opportunities and the ethical challenges associated with its integration in teaching and assessment (Holmes et al., 2019; Zawacki-Richter et al., 2019). While AI-supported assessment is increasingly discussed at an international level, current scholarship highlights both its pedagogical potential and the ethical challenges associated with its integration in education (Holmes et al., 2019; Zawacki-Richter et al., 2019; Williamson & Eynon, 2020). However, little research has examined how these practices unfold within teacher education programs in the Colombian Global South. Existing national studies remain concentrated in other regions and rarely address foreign language teacher education in southern Colombia, where structural constraints and decolonial commitments intersect in distinctive ways.

This study addresses this gap by examining how pre-service English teachers in a southern Colombian public university engage with AI-supported alternative assessment practices within a formative and decolonial framework. By analyzing classroom experiences and reflective processes, the article illustrates how AI can function not as a grading mechanism, but as a tool for autonomy, critical inquiry, and pedagogical creativity. At the same time, it highlights the structural conditions that shape innovation in contextually constrained environments. Consequently, this study was guided by the following question: How do pre-service English teachers negotiate AI-supported alternative assessment practices within structurally constrained teacher education contexts?

METHOD

This section outlines the methodological framework guiding the study, including the research design, contextual setting, participants, AI-supported pedagogical practices, data collection instruments, and analytic procedures. Grounded in qualitative inquiry and informed by decolonial pedagogical commitments, the methodology sought to document how pre-service English teachers engaged with AI-supported alternative assessment within a context marked by structural inequality and evolving digital integration.

Research Design

This study employed a qualitative descriptive design to examine how pre-service English teachers engaged with AI-supported alternative assessment practices within a teacher education course in southern Colombia. A qualitative descriptive approach was selected because it allows for a grounded and context-sensitive account of participants' experiences without imposing highly abstract theoretical interpretations (Sandelowski, 2000).

The research was conducted during a 16-week fourth-semester course on formative and process-based evaluation within a Bachelor of Arts in English program at a public university located in a historically marginalized region of the Colombian South. Students in this context often navigate linguistic, economic, and technological inequalities that shape their learning trajectories. These structural conditions resonate with decolonial critiques of epistemic hierarchies in Latin American education (Walsh, 2009; Quijano, 2000).

Drawing on decolonial pedagogical principles (Mignolo & Walsh, 2018), the course framed assessment not merely as a technical procedure but as a situated and ethical practice responsive to local realities. AI tools were introduced as dialogic supports rather than evaluative authorities, aligning with Mignolo's (2011) notion of critical border thinking.

Context and Participants

The study took place in a public university in southern Colombia, a region characterized by persistent social and technological inequalities. Although national initiatives have expanded digital inclusion efforts, access to stable connectivity and technological resources remains uneven, particularly in rural and economically marginalized areas. These conditions directly shape teacher education programs and future teachers' opportunities to experiment with AI-supported pedagogies. Participants included 16 pre-service English teachers between the ages of 18 and 23 enrolled in the course during the semester of implementation. Most came from public secondary schools and reported varied access to digital tools and internet connectivity. Participation in the research component was voluntary, and pseudonyms were used to ensure confidentiality.

AI Integration and Learning Activities

AI use in the course was intentionally limited to reflective and exploratory functions rather than grading purposes. Students interacted with conversational AI tools to support idea generation, rubric refinement, task design, and metacognitive reflection. The tools functioned as dialogic interfaces where participants could test reasoning, compare alternatives, and examine potential ambiguities in their assessment designs.

Learning activities included collaborative rubric construction, peer feedback cycles, reflective journals, and micro-teaching assessment tasks. Students were encouraged to critically interrogate AI-generated suggestions, identify biases, and adapt outputs to local teaching realities. This framing reinforced teacher agency and positioned AI as a companion for inquiry rather than a replacement for pedagogical judgment, while also supporting reflective feedback processes that are central to formative learning environments (Hattie & Timperley, 2007).

Data Collection Instruments

Data were generated through three interrelated sources designed to illuminate not only what students produced, but how they negotiated, appropriated, and critically reframed AI-supported assessment practices within the course. Classroom observations were conducted systematically across the 16-week semester. As both instructor and researcher, I documented dialogic exchanges, collaborative design processes, and moments of experimentation with AI-based tools as they unfolded in real time. Field notes paid particular attention to instances of negotiation, hesitation, revision, and ethical questioning, especially when students articulated assessment criteria, evaluated AI-generated suggestions, or reconsidered pedagogical decisions. These observations captured the relational and situated dynamics of assessment construction.

A second source consisted of student-produced artifacts developed throughout the semester. These materials, including assessment syllabi, exam prototypes, self- and peer-assessment instruments, and project-based evaluation tools, served as material traces of students' evolving assessment literacy. In qualitative educational research, such artifacts provide valuable evidence of participants' developing understandings and practices (Merriam & Tisdell, 2016; Saldaña, 2016) and are particularly relevant for examining the growth of teachers' assessment literacy (Fulcher, 2012; Inbar-Lourie, 2008). Many artifacts incorporated AI-generated elements, such as draft rubrics, visual concept maps, and comic-based instruments, which were subsequently modified, contextualized, or

critically interrogated. Rather than treating these artifacts as static products, they were analyzed as iterative documents reflecting processes of conceptual refinement and localized adaptation.

The third source comprised weekly reflective journals that foregrounded students' metacognitive engagement with AI. Participants documented specific episodes of AI use, moments of conceptual tension, and shifts in their understanding of fairness, autonomy, and contextual relevance in assessment design. Journal prompts encouraged explicit comparison between AI-generated outputs and participants' own pedagogical reasoning, thereby centering teacher agency over technological authority.

The integration of interactional observations, evolving artifacts, and reflective narratives enabled methodological triangulation and strengthened analytic credibility. Together, these data sources provided a layered account of how AI-mediated assessment practices were interpreted, negotiated, and transformed within a context shaped by structural inequality and decolonial pedagogical commitments.

Data Analysis

Data were analyzed using thematic analysis following (Braun & Clarke, 2008), supported by Saldaña's (2016) two-cycle coding framework. Thematic analysis was selected for its flexibility in accommodating multimodal datasets, including written reflections, AI-assisted artifacts, comics, Miro boards, and classroom observation notes, without imposing a rigid theoretical framework prematurely (Merriam & Tisdell, 2016). Saldaña's model was particularly appropriate given the iterative and layered nature of the artifacts produced throughout the course.

The analytic process unfolded in three interconnected stages. First, familiarization involved repeated reading and viewing of all materials. Both verbal and visual data (e.g., comics and Miro summaries) were treated as meaning-bearing texts, consistent with multimodal qualitative research principles (Kress & Routledge, 2010). Second, coding was conducted using Saldaña's (2016) two-cycle framework. First-cycle coding incorporated descriptive, process, and in vivo codes to capture how students navigated AI tools (e.g., "asked AI for models," "revised criteria," "expanded perspectives"). Second-cycle pattern coding clustered related codes into higher-order categories reflecting emerging conceptual patterns. Third, themes were generated through the identification and refinement of recurrent patterns across datasets, following Braun & Clarke, (2008) guidance on theme construction.

Deductive sensitizing concepts, such as agency, validity, fairness, multimodality, and ethical AI use, were informed by scholarship on assessment literacy and human–AI interaction in education (Ifenthaler et al., 2020; Luckin, 2018). Triangulation across journals, artifacts, and instructor observation reinforced analytic credibility (Denzin, 2012). Throughout the interpretive process, attention remained focused on the contextual and decolonial dimensions shaping knowledge production (Walsh, 2018).

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RESULTS AND DISCUSSION

The analysis identified three interconnected themes that illuminate how pre-service teachers engaged with AI-supported assessment design within a structurally constrained teacher education context in southern Colombia. These themes capture shifts in assessment literacy, evolving epistemic positioning toward AI tools, and the tensions that surfaced as students negotiated local realities alongside global discourses of technological innovation.

Expanding Assessment Repertoires Through Multimodal and AI-Supported Design

Participants demonstrated notable growth in their capacity to design diverse and coherent assessment instruments. Engagement with AI tools facilitated experimentation with multimodal formats, including comics, *Miro*-based summaries, interactive rubrics, and visual conceptual maps, expanding the range of representational resources available for assessment design. This development resonates with Kress & Routledge (2010) argument that multimodal communication broadens meaning-making possibilities and enables more nuanced expressions of understanding.

Rather than functioning as automated generators, AI tools operated as cognitive partners that supported idea reorganization, clarification of criteria, example generation, and iterative refinement.

Students frequently began with preliminary drafts and used AI dialogically to strengthen alignment between objectives, tasks, and rubrics. This iterative process contributed to the consolidation of assessment literacy by strengthening students' ability to articulate criteria, justify alignment decisions, and critically evaluate the coherence of their assessment designs. In this sense, it reflects Luckin's (2018) position that machine-supported thinking can augment, rather than displace, human judgment.

Importantly, the expansion of assessment repertoires signaled a shift away from exclusively paper-based and standardized formats toward more creative and culturally responsive strategies. In a regional context where traditional evaluative models remain dominant, this diversification can be read as a modest but meaningful disruption of entrenched epistemic hierarchies (Walsh, 2018; Quijano, 2000).

From Epistemic Dependence to Epistemic Agency in AI Use

Early in the course, many students relied heavily on AI-generated outputs and expressed uncertainty about whether the tools' suggestions were "correct." Over time, however, their interactions became more deliberate and dialogic. Rather than accepting AI-generated ideas uncritically, students began to question, modify, and adapt them in relation to the *contextual realities* of their practicum settings and research projects.

This progression can be interpreted as a movement from epistemic dependence toward epistemic agency. In line with Mignolo's (2011) notion of critical border thinking, students increasingly negotiated knowledge emerging from different epistemic locations (technological, institutional, and local) rather than privileging AI outputs as inherently authoritative. Their reflections reveal growing awareness of potential biases, limitations, and contextual mismatches in AI responses, concerns that resonate with broader critiques of artificial intelligence in education emphasizing the need for critical engagement with algorithmic systems (Williamson & Eynon, 2020). Reflective journals further indicate that students began positioning themselves as evaluators of AI-generated content instead of passive recipients. This evolving stance aligns with Braun & Clarke, (2008) emphasis on analytic reflexivity and supports Luckin's (2018) argument that AI can strengthen human intelligence when integrated critically rather than deferentially.

Navigating Structural Constraints: Digital Gaps, Workload, and Local Realities

Despite the pedagogical advances observed, students faced structural challenges that shaped their engagement. Limited access to reliable Internet, shared devices, and unstable electricity created interruptions in their workflow. These conditions mirror national data on regional digital inequalities and reinforce the need for assessment practices that consider local material constraints. Students' reflections highlighted tensions between innovative design aspirations and the realities of public school classrooms where they conduct their teaching practicum. Many commented that the multimodal assessments they created might not be feasible in the local schools due to technological shortages. This resonates with decolonial critiques that warn against the uncritical adoption of externally driven educational models that overlook local resources and sociopolitical conditions (Walsh, 2018).

At the same time, students emphasized that even when multimodality was not fully implementable, AI-supported planning helped them conceptualize more dynamic, culturally grounded assessments that could be adapted using low-tech alternatives. This pattern suggests the emergence of a flexible and context-responsive approach to assessment design.

Together, these themes illustrate how AI-supported assessment unfolded as a negotiated process shaped simultaneously by pedagogical experimentation and structural constraint. Rather than representing linear technological advancement, students' engagement reflected iterative adaptation within materially and culturally situated conditions.

Implications

The findings suggest that teacher education programs should frame AI not as an automated grading mechanism but as a dialogic scaffold that supports reflective judgment and assessment design. Embedding critical AI literacy within formative assessment training may strengthen future teachers'

ability to interrogate technological outputs and adapt them to local realities. However, meaningful implementation requires institutional support, infrastructural investment, and sensitivity to sociomaterial constraints, particularly in under-resourced contexts of the Global South.

Research Contribution

This study contributes to emerging scholarship on AI-supported assessment by providing empirical evidence from a teacher education program in the Colombian Global South, a context underrepresented in current research. It extends discussions of AI in education beyond efficiency and automation, foregrounding epistemic agency, multimodal design, and decolonial commitments as central dimensions of pedagogical innovation. By documenting how pre-service teachers critically appropriate AI tools within structurally constrained environments, the study advances a situated and context-sensitive model of reflective AI integration in teacher education.

Limitations

This study is contextually grounded in a single cohort within one public university in southern Colombia. Structural inequalities related to digital access, institutional resources, and regional marginalization shaped both the design and outcomes of AI-supported assessment practices. The relatively short duration of the 16-week intervention and reliance on reflective self-reported data also delimit the scope of interpretation. The findings should therefore be understood as context-sensitive insights rather than universally generalizable models.

Suggestions

Future research should explore longitudinal trajectories of AI-supported assessment practices as pre-service teachers transition into professional contexts. Comparative studies across regions may further clarify how structural inequalities mediate AI integration. Additional inquiry could examine student learning outcomes in classrooms where dialogic and critically informed AI-supported assessment models are implemented.

CONCLUSION

This study examined how AI-supported assessment practices were enacted and negotiated within a teacher education program in southern Colombia. The findings show that AI, when positioned as a dialogic and reflective companion rather than an evaluative authority, can expand pre-service teachers' assessment repertoires, support the development of epistemic agency, and strengthen coherence in assessment design.

However, these developments unfolded within a context marked by digital inequalities, institutional constraints, and the sociopolitical realities of public-school practicum settings. The pedagogical value of AI therefore cannot be understood apart from the material conditions that shape its use. Rather than functioning as a universal solution, AI integration in teacher education must remain critically informed, context-responsive, and grounded in teacher judgment.

Overall, the study highlights the importance of approaching AI not as a substitute for pedagogical expertise but as a tool that can scaffold reflective thinking and culturally situated assessment design when embedded within ethical and decolonial commitments.

AUTHOR CONTRIBUTION STATEMENT

Dr. Angélica M. Rojas I. conceptualized the study and designed the research framework. She conducted data collection, performed coding and thematic analysis, and interpreted the findings. She drafted, reviewed, and finalized the manuscript. The author assumes full responsibility for the content of the article as the sole author and corresponding author.

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