Augmented Teaching: How to Integrate Artificial Intelligence Without Losing Critical Thinking in the Classroom

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ABSTRACT:

This article presents the results of a collaborative research developed between teachers from the Popular University of Cesar (UPC) and primary and secondary school teachers. The main objective was to understand and propose an augmented teaching model that allows the integration of generative Artificial Intelligence (AI) in the classroom without weakening critical thinking, intellectual autonomy, and Caribbean cultural identity. Based on a qualitative approach with a participatory action research design (Fals Borda, 2008), we worked with 24 teachers (12 university and 12 elementary school) and 180 students during the first semester of 2025. The results show three main findings: (a) AI is perceived as an opportunity to free up teaching time for deep mediation, but generates fear of cognitive dependence; (b) critical prompt strategies, co-evaluation with AI, and contrast with local vallenato knowledge enhance critical thinking instead of annulling it; (c) the CPA (Understand-Prompt-Criticize-Amplify) model is proposed for the context of the UPC. It is concluded that it is not a question of prohibiting or idolizing AI, but of training augmented teachers, not replacements.

Keywords: augmented teaching, artificial intelligence, critical thinking, Universidad Popular del Cesar, Valledupar, critical digital literacy, ecology of knowledge

1. INTRODUCTION

Valledupar wakes up to the sound of the accordion and the murmur of notifications. In a room at the UPC, Sabanas, a Bachelor's Degree in Literature student asks ChatGPT about the analysis of 'The House in the Air' and receives an impeccable answer in seconds. Three blocks away, at the Alfonso López Pumarejo Educational Institution, a seventh-grade boy delivers an assignment on the Guatapurí River written by an AI that has never felt the cold of the river. These two scenes, everyday as early as 2025, were the starting point for this research.

The advent of Generative Artificial Intelligence (AGI) has burst into classrooms not as a future promise, but as a current presence. According to UNESCO (2023), more than 70% of university students in Latin America have used AGI's tools in the last year. In Colombia, the Ministry of National Education (2024) recognizes the urgent need for guidelines, but there are still no clear policies for their critical pedagogical integration.

The problem that brings us together is not technical, it is pedagogical and profoundly human. As Freire (1970) puts it, all technology can be oppressive or liberating depending on the pedagogical intentionality that accompanies it. At the UPC, a public university that welcomes young people from strata 1, 2 and 3 from all over Cesar, La Guajira and southern Magdalena, the question is not whether to use AI, but how to use it without deepening gaps and without renouncing what makes us teachers: teaching us to think.

We, teachers who have taught classes with chalk boards, then with Video Beam and now with ChatGPT open on the student's cell phone, decided to investigate from the inside. We are a teacher of basic language who loves Gabo, a teacher of Pedagogy at the UPC who researches in rural schools in the township of Atánquez, a teacher of Social Sciences who dances pilonera at the Vallenato Festival and a Computer Science teacher who grew up listening to Diomedes in the Los Fundadores neighborhood.

This article argues a central thesis: augmented teaching is possible when AI is integrated as a third cognitive actor in the classroom, not as a substitute for the teacher or the student, but as an object of permanent criticism. We propose that critical thinking is not lost by using AI, it is lost when we stop asking about the how, why, and for whom of what AI produces (Facione, 2020; Paul & Elder, 2019).

2. JUSTIFICATION

Why research this from Valledupar? The answer is territorial and political. Valledupar is not Bogotá or Medellín. Our connectivity is intermittent, our classrooms have 40 students with a single fan, and many of our elementary school children arrive at the UPC as the first university generation of their family. Importing pedagogical recipes from the global north without cultural translation is a form of digital colonialism (Couldry & Mejias, 2019).

The UPC has a mission that says: to train integral professionals, with a sense of belonging, who transform the environment. We cannot transform the environment if we train professionals who delegate their capacity for analysis to the algorithm.

a) Pedagogical reason: Previous studies show that the uncritical use of AI reduces long-term retention and argumentation capacity (Bastani et al., 2024). Litwin (2005) already warned that technology can impoverish didactics if there is no intentionality.

b) Ethical reason: Generative AI reproduces biases. When we ask an AI to draw a farmer from Cesar, it often whitewashes or stereotypes them. Teaching how to detect this bias is teaching critical thinking (Pangrazio & Selwyn, 2019). Crawford (2021) shows that AI is made of data that is political.

c) Institutional reason: The UPC, in its 2022-2026 Development Plan, is committed to digital transformation. But transformation is not buying tablets. It is, as Maggio (2018) states, reinventing didactics.

3. THEORETICAL FRAMEWORK

3.1 From Educational Technology to Augmented Teaching. Following Holmes et al. (2022), we

understand augmented teaching as one where the teacher uses AI to amplify human capacities - memory, personalization, feedback - but keeping pedagogical judgment at the center. Cope and Kalantzis (2023) call this eclectic e-learning: the machine does the mechanical, the human does the meaningful.

3.2 Generative Artificial Intelligence in Education. AGI is defined as systems capable of generating text, image, or audio from prompts (Crawford, 2021). In education, it has generated two positions: Mollick and Mollick (2023) celebrate the Socratic tutor, Selwyn (2024) warns about datafication. We are located in a third critical path in Latin America. As Williamson and Eynon (2020) point out, all AI is political.

3.3 Critical thinking. Critical thinking has been understood as a set of cognitive skills: analyzing, evaluating, inferring (Facione, 2020). However, since Freire (1970), it is also an ethical disposition. We adopted the model of Ennis (2018) and crossed it with Paul and Elder (2019) on intellectual standards.

3.4 Territory as a Curriculum. Valledupar is text. Boaventura de Sousa Santos (2018) talks about the ecology of knowledge. Our proposal forces AI to dialogue with the territory: Cañaguate accordionist, Guatapurí River, Kankuamo people.

3.5 Critical digital literacy. Pangrazio and Selwyn (2019) propose that digital literacy is not knowing how to use apps, but understanding their implications. UNESCO (2023) proposes four dimensions: understanding, using, evaluating, and ethics.

4. METHODOLOGY

We adopted a qualitative approach with a Participatory Action Research (PAR) design (Fals Borda, 2008). 24 teachers (12 university and 12 elementary school) and 180 students from the UPC and three institutions participated: Alfonso López Pumarejo, Casd Simón Bolívar and Técnico Upar.

Phases: 1) January 2025 diagnosis: focus groups on fears. 2) February-March co-design: 16-hour workshops where we co-designed 8 sequences. 3) April-May implementation: each teacher implemented 2 sequences with field diaries. 4) June systematization: collective analysis at Rafael Carrillo Lúquez Library with ATLAS.ti.

Techniques: focus groups (4), interviews (24), field diaries (48), analysis of 180 papers. Critical thinking rubric adapted from Facione (2020) and Paul and Elder (2019): clarity, evidence, counter-argument, bias and self-voice.

Ethical considerations: endorsement by the UPC Ethics Committee, informed consent, anonymization with vallenato pseudonyms, non-use of data to train AI.

5. RESULTS

Category 1: AI as a mirror of insecurities. 83% expressed fear of becoming obsolete. After the model, the discourse changed: "I am more of a teacher, not less". Augmented teaching does not reduce the burden, it transforms it (Holmes et al., 2022).

Category 2: Three strategies that promote critical thinking (from 2.8 to 4.2 out of 5).

Strategy A - Inverted Critical Prompt: design the most demanding prompt and then critique the response. Ex: "Ask the AI to argue why vallenato is not literature and dismantle it with 3 vallenato authors" (Ennis, 2018).

Strategy B - Co-assessment with AI: the student submits an essay, asks the AI to evaluate it with the rubric, and writes a letter where they accept or refute the assessment (Mollick & Mollick, 2023).

Strategy C - Territorial Contrast: all AI responses must be contrasted with a living source of the territory. Concept of algorithmic silences (Crawford, 2021). 10th grade student: "The AI said that not much happened in Valledupar in the conflict, but my uncle told me about when they had to leave Mariangola. The AI doesn't know what they didn't tell it."

Category 3: CPA Model - Understand, Prompt, Criticize, Amplify. C-Understand the problem from the territory. P-Prompt with critical

intention. C-Criticize with standards from Paul and Elder (2019). A-Amplify the human: feel the Guatapurí, sing parranda, embrace.

Quantitative results: Own voice 2.5 to 4.0, local evidence 2.1 to 3.9, bias detection 1.8 to 4.1, counter-argumentation 2.9 to 4.2. Attendance +15% (Maggio, 2018).

6. DISCUSSION

Unlike Bastani et al. (2024) who see AI as the end of the task, we show that it can be the beginning of a deeper task if the design demands it. Augmented teaching distances itself from the replaceable teacher. In Valledupar, the teacher is a community referent. We agree with Selwyn (2024) in not romanticizing, but also with Mollick and Mollick (2023) that prohibiting it denies basic literacy. Our contribution is territorial and decolonial anchoring: ecology of knowledge (de Sousa Santos, 2018) and data colonialism (Couldry & Mejias, 2019). Limitations: only urban, rural lack of Pueblo Bello and Atánquez, short time of 2 months.

7. DIDACTIC SEQUENCES

SEQUENCE 1 - 9° LANGUAGE: What is vallenato? Objective: critical thinking about hegemonic definitions. 2 sessions 90 min. Session 1: listen to La gota fría, ask IA "Define vallenato and argue why it is not literature", then "Define like Consuelo Araujonoguera that it is oral literature". Family interview task. Session 2: contrast AI vs interview with rubric Paul and Elder, write an opinion column 300 words citing AI, familiar and García Márquez. Evaluation of one's own voice (Facione, 2020).

SEQUENCE 2 - 10° SOCIAL: The conflict in Cesar, what the AI does not tell. 3 sessions. Session 1: AI summarizes the conflict Cesar 1990-2010, analyze what it omits. Session 2: Invite leader or audio Truth Commission, contrast. Session 3: Map of silences on Cesar map, letter "Dear AI, you failed to tell that...". Evaluation, detection, bias and justice.

SEQUENCE 3 - UNIVERSITY DEGREE: Augmented planning. 4 hours. Step 1: Understand real difficulty without AI. Step 2: Prompt planning 60 min with AI. Step 3: Criticize with UPC rubric: useful green colors, generic yellow, decontextualized red. Step 4: Amplify rewrite by adding Guatapurí territory. Deliver original AI and human version + reflection on what part of the role AI does not do.

SEQUENCE 4 - WORKSHOP 45 MIN ALL: Auditing AI, who benefits? News AI "Valledupar will be Silicon Valley", groups answer who wins, who loses, what is missing, what interests, using Crawford (2021) and Selwyn (2024).

8. CONCLUSIONS

1. Augmented teaching is an ethical stance rather than a technical one: using AI to be more human (Holmes et al., 2022; Freire, 1970).

2. Critical thinking is not lost by using AI, it is lost by using it without mediation. Our three strategies strengthen questioning (Ennis, 2018; Facione, 2020).

3. Territory matters: asking what the AI of Diomedes, Badillo River, Arhuaco people knows is epistemic sovereignty (de Sousa Santos, 2018).

4. Students don't want to cheat, they want meaning. When auditing AI, engagement increases (Freire, 1970).

5. The UPC can lead from the Caribbean model CPA vallenato, situated, public and critical.

Recommendations: start with a subject, design a rubric, make the cell phone an ally, create a bank of local knowledge, form teaching collectives.

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