
BRIDGING REINTEGRATION AND EQUITY THROUGH LOGIC AND AI: TEACHING FORMER COMBATANTS IN COLOMBIA

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ABSTRACT

This presentation explores the use of mathematical logic and computational thinking as educational tools to support the reintegration of former combatants from the Colombian armed conflict. Building on earlier work in digital literacy (Torres et al., 2014), it addresses the social and economic challenges this population faces, including stigmatization and limited job opportunities (Zapata et al., 2021). The proposed educational model integrates digitalization and Artificial Intelligence (AI) to enhance logical reasoning and problem-solving skills (Behnamnia et al., 2025), using pedagogical prototypes and mathematics labs (Torres & Martínez, 2015).

A study involving over 30 ex-combatants and 260 professionals from the Agency for Reintegration and Normalization (ARN) revealed a digital divide not of access, but of usage. Although most participants owned smartphones and had internet access, few used these tools for entrepreneurship or education. The intervention included tablets, multimedia content, and a learning platform, achieving measurable improvements in digital competence.

The approach promotes logical and computational thinking as essential 21st-century skills (More Valencia et al., 2022; Soufan et al., 2023), offering personalized and gamified learning supported by AI (Jadhav et al., 2025). This not only benefits cognitive development but also fosters confidence and employability. Mathematics education is framed within inclusive and flexible strategies, requiring a transformation in teacher training. This includes Pedagogical Content Knowledge (Martín et al., 2023) and the application of Didactic Suitability (Barboza & Castro, 2023) to design relevant and equitable instruction.

By fostering logical reasoning and computational literacy, this initiative equips former combatants with tools to navigate an increasingly digital world, enabling them to access education, employment, and civic participation. More than a technical training program, it represents a transformative educational pathway that acknowledges their past, leverages their discipline and resilience, and repositions them as active and capable members of society. The integration of digital and AI-based pedagogies not only bridges knowledge gaps but also supports a broader agenda of peacebuilding and social justice in post-conflict Colombia.

Keywords ex-combatants, mathematical logic, digital literacy, artificial intelligence, reintegration, educational equity

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