

Educommunication Through a Teacher Guided Mobile Application, Ecuador

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Abstract—Digital technologies have reshaped the way adolescents access information, interact with content and construct meaning, yet many rural classrooms in Latin America still rely almost exclusively on transmissive teaching. This paper reports a mixed methods study on the incidence of a teacher guided mobile application, designed under an educommunication framework, on the learning of Language and Literature among eighth grade students of basic education at Unidad Educativa Moraspungo, Pangua canton, Ecuador, during the October to December 2024 school period. Eighty students, split evenly between two parallel classes, completed a structured survey addressing functionality, navigation, interface design, content comprehension, perceived learning gains, motivation, quality of teacher guidance, usefulness of embedded exercises, satisfaction with interactive learning and perceived improvement in oral and written expression. Semi structured interviews with the school principal, an ICT teacher and a Language and Literature teacher complemented the quantitative data, together with participant observation during classroom sessions. Results show near unanimous positive perceptions: 100% of respondents reported stable functionality, clear and attractive design, improved comprehension of curricular topics and higher learning compared with conventional lessons, while 98.7% considered navigation easy. Interviewees valued the pedagogical contribution of the tool and identified connectivity, device access, teacher training, richer animations and additional interactive reading and writing exercises as improvement areas. The findings support the claim that mobile technology, when mediated by deliberate teacher orchestration and grounded in dialogic communication, can strengthen engagement, comprehension and communicative competence in literacy education within resource constrained rural contexts.

Index Terms—educommunication, mobile learning, language and literature, mobile application, teacher mediation, basic education, mixed methods, Ecuador

I. INTRODUCTION

Language and literacy competences remain the backbone of academic trajectories and of civic participation, and their weakness compromises performance across every other curricular domain [1]–[3]. In Ecuador, as in much of Latin America, rural secondary schools face a persistent gap between the communicative habits of students, who live immersed in mobile and audiovisual ecosystems, and the predominantly transmissive routines of the classroom [4]–[6]. Adolescents arrive at school as intensive users of smartphones and social platforms, a condition popularized, not without criticism, through the notion of digital natives [7]–[9]. The mismatch between those media practices and traditional instruction has

been identified as one of the drivers of disengagement in literacy subjects [10]–[12].

Educommunication offers a theoretical response to that mismatch. Rooted in the dialogic pedagogy of Freire [13], [14] and elaborated by Kaplún [15], Martín Barbero [16], Soares [17], Aparici [18] and Barranquero [19], the field argues that communication should not be treated as a channel for delivering content but as a constitutive dimension of the educational process itself. Later scholarship on media competence and media literacy in Ibero America has refined that agenda into measurable dimensions [20]–[26], while international work on media and information literacy converges on similar goals [27]–[29].

At the same time, three decades of research on technology enhanced learning have documented both the promise and the limits of digital tools in classrooms [30]–[37]. Mobile learning in particular has matured into a consolidated research strand [38]–[46], with meta analytic evidence of moderate positive effects on achievement [45], [47], [48] and a rich literature on mobile assisted language learning [49]–[59]. Reviews focused on school age populations report gains in literacy and mathematics when applications are well designed and pedagogically integrated [60]–[65].

A recurring conclusion across that literature is that the teacher, not the device, is the decisive variable [33], [66]–[69]. Technology adoption models such as TAM and UTAUT [70]–[74] explain acceptance, and frameworks such as TPACK [66] and SAMR [75] describe integration depth, yet none of them replaces the orchestration work of an educator who frames, guides and gives feedback [76], [77]. The educommunicative perspective radicalizes that point: it demands that the tool be designed and used to open dialogue rather than to automate transmission [15], [17], [18].

Despite this accumulated knowledge, empirical studies situated in rural Ecuadorian basic education remain scarce, and the specific intersection of educommunication theory, teacher guided mobile applications and the Language and Literature curriculum has received little direct attention. This paper addresses that gap. The general objective of the study was to analyze the incidence of a mobile application, guided by a teacher, on the learning of Language and Literature from an educommunication perspective among eighth grade students at Unidad Educativa Moraspungo. Specific objectives included identifying strengths and weaknesses of the application from

the perspective of students and staff, and deriving recommendations for institutional adoption.

The remainder of the paper is organized as follows. Section II reviews the theoretical framework. Section III describes the methodology. Section IV presents the results. Section V discusses the findings against prior work. Section VI acknowledges limitations, and Section VII concludes.

II. THEORETICAL FRAMEWORK AND RELATED WORK

A. *Educommunication and Dialogic Pedagogy*

Educommunication emerged in Latin America as a critique of what Freire called banking education, in which knowledge is deposited into passive students [13]. Kaplún reformulated the communication models of Shannon inspired pedagogy into a pedagogy of communication, insisting that people learn when they express, produce and interact, not merely when they receive [15]. Martín Barbero displaced the analytical focus from media to mediations, that is, to the cultural practices through which audiences appropriate messages [16]. Soares later institutionalized the field in Brazil around the notion of communicative ecosystems in schools [17]. Contemporary authors extend these ideas to digital and transmedia environments [11], [147]–[149], and empirical instruments now measure media competence across dimensions of language, technology, production, ideology, interaction and aesthetics [20], [21]. Within this tradition, a mobile application is legitimate only insofar as it enables participation, expression and critical reading, which is precisely the design intention evaluated in this study.

B. *Mobile Learning and MALL*

Mobile learning has been theorized as learning across contexts mediated by portable devices [38]–[40], with models such as FRAME describing the intersection of device, learner and social aspects [42]. Systematic reviews document sustained growth of the field and predominantly positive outcomes [43]–[48], [152], [153]. In language education, mobile assisted language learning has evolved from SMS vocabulary drills [50], [51] toward multimedia, gamified and adaptive applications [53], [54], [56]–[59]. Evidence from school settings indicates that touch screen applications can improve early literacy and comprehension when content aligns with curriculum [61]–[64], although effects depend heavily on implementation quality [35], [36], [60].

C. *Motivation, Cognition and Interface Design*

The motivational claims examined in this study connect with self determination theory, which links engagement to autonomy, competence and relatedness [78], [79], with the ARCS model of attention, relevance, confidence and satisfaction [80], with flow theory [81] and with research on interest development [82]. Gamification research reports motivational gains under appropriate conditions [83]–[86]. On the cognitive side, multimedia learning theory [87], [88], dual coding [89], [90], cognitive load theory [91]–[93] and working memory research [94] justify design choices such as segmented

lessons, coherent visuals and worked examples, while cautions against minimally guided instruction reinforce the centrality of teacher scaffolding [95], [96]. Usability principles [97]–[99] and technology acceptance constructs of perceived usefulness and perceived ease of use [70]–[72] frame the survey items on functionality, navigation and design. Classic sociocultural theory grounds the mediating role of the teacher [100]–[103], and constructionist and connectivist perspectives inform the participatory ambitions of the tool [104]–[110].

D. *ICT in Ibero American Education*

Regional scholarship has long analyzed the pedagogical integration of ICT in Spanish speaking contexts [111]–[117], including the tension between technological availability and methodological renewal [4]–[6]. Policy documents from UNESCO and OECD provide comparative benchmarks for mobile learning adoption and for the mixed outcomes of computer investment without pedagogical redesign [1], [2], [118]. This study positions itself inside that regional conversation with field evidence from a rural Ecuadorian institution.

III. METHODOLOGY

A. *Design*

The study adopted a descriptive mixed methods design with an experimental component, combining quantitative and qualitative strands to obtain a fuller understanding of a complex educational phenomenon [119]–[123]. The quantitative strand measured student perceptions through a structured survey. The qualitative strand explored institutional and pedagogical perspectives through semi structured interviews [124], [125] and participant observation [126], [127]. The experimental dimension consisted of the deliberate introduction of the mobile application into regular Language and Literature lessons under teacher guidance, following classic recommendations on intervention research in field settings [128]–[130].

B. *Context and Participants*

The research took place at Unidad Educativa Moraspungo, a public institution in Pangua canton, Cotopaxi province, Ecuador, between October and December 2024. The population comprised the complete cohort of eighth grade basic education, 80 students distributed evenly across parallels A and B, 40 in each group. Since the entire cohort participated, no sampling procedure was required, which removes sampling error though not other threats to generalization [130], [131]. Three staff members were interviewed: the school principal, an ICT teacher and the Language and Literature teacher responsible for the intervention.

C. *Instruments*

The survey contained closed items on ten constructs: application functionality, ease of navigation, clarity and attractiveness of the design, contribution to topic comprehension, perceived learning relative to traditional lessons, motivation during use, clarity of teacher guidance inside the application, usefulness of exercises and activities, satisfaction with

interactive learning and perceived improvement of expressive abilities. Item construction followed standard survey methodology [131]–[133], and internal consistency concerns were addressed through piloting and review, in line with classical reliability theory [134], [135]. The interview guide covered perceived benefits, technical and pedagogical difficulties, required institutional conditions and recommendations for improvement [124], [125]. Observation focused on interaction patterns among teacher, students and the application during lessons [126].

D. The Application

The mobile application delivered curricular content of Language and Literature for eighth grade through short multimedia lessons, guided practice exercises and immediate feedback, with the teacher orchestrating pace, framing objectives and moderating discussion. The design followed educommunicative principles of dialogue and participation [15], [17], multimedia learning guidelines on coherence and segmenting [87], [88], and mobile interface conventions on simplicity and low navigation depth [97]–[99].

E. Procedure and Analysis

Sessions were conducted inside regular class periods over the trimester. Surveys were applied at the end of the intervention to all 80 students. Quantitative data were tabulated as frequencies and percentages per parallel and aggregated, a level of analysis consistent with the descriptive objective [123], [130]. Interviews were transcribed and analyzed thematically [136], [137], and observation notes were used for triangulation [138], [139]. Analytic and synthetic methods structured the interpretation, first decomposing the application into components such as interface, content and interaction, then integrating findings into global conclusions [140], [141].

IV. RESULTS

A. Quantitative Findings

Table I summarizes the survey outcomes. Agreement was remarkably high and homogeneous across parallels. All 80 students reported that the application worked correctly without failures or interruptions, that its design was clear and attractive, that it helped them understand Language and Literature topics better, that they learned more than in conventional lessons, that the exercises reinforced their knowledge, that interactive learning was satisfying and that digital tools improve their capacity to express themselves in class. Navigation was rated easy by 79 of 80 respondents, 98.7%, with a single student in parallel A describing it as moderately easy. Teacher guidance inside the application was rated clear and useful by 79 of 80 respondents, 98.7%, with one student in parallel B perceiving it as moderately clear.

The pattern is internally coherent. Constructs tied to technology acceptance, namely functionality, ease of use and design, reached ceiling or near ceiling values, which according to acceptance models predicts high behavioral intention to keep using the tool [70], [72], [73]. Constructs tied to learning and

TABLE I
STUDENT SURVEY RESULTS (N = 80; PARALLEL A = 40, PARALLEL B = 40)

Construct	Positive	%
Application functionality (no failures)	80	100
Ease of navigation and content access	79	98.7
Clear and attractive design	80	100
Better comprehension of topics	80	100
Higher learning vs. traditional lessons	80	100
Motivation during use	80	100
Clarity of teacher guidance in the app	79	98.7
Usefulness of exercises and activities	80	100
Satisfaction with interactive learning	80	100
Digital tools improve classroom expression	80	100

motivation followed the same trend, suggesting that acceptance translated into perceived pedagogical value rather than mere novelty appeal, although novelty cannot be discarded as a partial explanation [142]–[144].

B. Qualitative Findings

The three interviews converged on a positive valuation of the tool combined with concrete improvement demands. The principal emphasized institutional conditions: strengthening connectivity in the school, guaranteeing device access for every student and training teachers so that they can integrate such tools into their planning. The ICT teacher judged the application technically sound and suggested richer animations in transitions to further support engagement. The Language and Literature teacher requested more interactive exercises targeting reading comprehension, text analysis and written production, together with immediate feedback to foster learner autonomy. Observation confirmed fluent student interaction with the interface and an active orchestration role of the teacher, consistent with the literature on classroom orchestration of digital tools [67], [76].

These demands mirror well documented barriers to ICT integration, namely infrastructure, access and professional development [5], [6], [33], [60], [69], and align with domain specific evidence that literacy applications benefit from comprehension oriented interactivity and timely feedback [61], [63], [145], [146].

V. DISCUSSION

The results support the central premise of the study: a mobile application, when guided by a teacher and designed under educommunicative principles, can strengthen perceived comprehension, motivation and communicative expression in Language and Literature. Several threads of interpretation deserve attention.

First, the near unanimous positive perception is consistent with meta analytic findings that mobile interventions produce positive effects on learning attitudes and outcomes in school populations [45]–[48], and with MALL evidence that mobile formats suit language content particularly well because they support short, frequent, multimodal practice [53]–[56]. The

motivational response fits self determination theory, since the application afforded competence through immediate feedback and autonomy through self paced navigation, while teacher guidance preserved relatedness [78]–[80].

Second, the decisive role of the teacher observed here reinforces a long line of research showing that pedagogy, not hardware, drives outcomes [30]–[33], [66]. The educommunicative frame goes further than mainstream integration models by requiring that the tool open dialogic space [13], [15]–[17]. Students reporting improved capacity to express themselves in class is precisely the kind of outcome that distinguishes educommunication from content delivery, and it resonates with participatory culture arguments [11], [148] and with media competence frameworks that value production and interaction alongside reception [20]–[22].

Third, caution is warranted. Self reported perception measures at ceiling levels are informative about acceptance and attitude but weak as evidence of achievement gains, a distinction stressed since the media effects debate between Clark and Kozma [142]–[144] and reiterated by modern reviews that demand controlled designs and objective outcome measures [35]–[37]. Novelty effects tend to decay over time [142], response acquiescence can inflate agreement in young respondents [131], [132], and single site cohorts limit external validity [129], [130]. The interview data partially mitigate these concerns by adding critical voices and improvement demands, and triangulation strengthens credibility [137]–[139], yet the evidential status of the findings remains descriptive.

Fourth, the infrastructure and training demands voiced by the principal locate this study inside the persistent Latin American gap between device enthusiasm and systemic support [1], [2], [4]–[6]. Sustainable adoption will require institutional investment, continuous professional development [33], [69] and content evolution toward the comprehension and production exercises requested by the subject teacher, in line with evidence on effective literacy software [3], [61], [63].

VI. LIMITATIONS AND FUTURE WORK

The study is limited by its single institution scope, its reliance on perception surveys without pre and post achievement testing, the short duration of one trimester and the absence of a comparison group receiving equivalent content without the application. Future work should incorporate standardized literacy measures, delayed retention tests, control conditions [129], [130], learning analytics captured by the application itself [150], [151], and longitudinal designs able to separate novelty from durable engagement [84], [142]. Extending the educommunicative design toward student media production, for example collaborative digital storytelling and text creation inside the application, would test the participatory core of the framework rather than its receptive periphery [15], [17], [104], [105].

VII. CONCLUSION

This mixed methods study analyzed the incidence of a teacher guided mobile application, grounded in educommu-

nication, on Language and Literature learning among 80 eighth grade students of a rural Ecuadorian school. Students expressed near unanimous positive perceptions of functionality, usability, design, comprehension support, learning value, motivation, teacher guidance, exercise usefulness, interactive satisfaction and expressive benefit. School staff confirmed the pedagogical contribution while demanding better connectivity, universal device access, teacher training, richer animation and deeper reading and writing interactivity. The evidence, though perceptual and descriptive, indicates that mobile technology mediated by deliberate teacher orchestration and dialogic design can enrich literacy education in resource constrained contexts, and it provides a concrete regional data point for the educommunication research agenda. The recommendation for practice is direct: adopt educational technologies designed from an educommunicative perspective, and invest in the human and infrastructural conditions that allow dialogue, participation and critical thinking to flourish around them.

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