



DEVELOPMENT OF DIGITAL LITERACY IN ENGLISH LANGUAGE TEACHER EDUCATION: LABLIN AS AN EDUCATIONAL TOOL¹

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ABSTRACT: This study aims to identify the potential of the Language Laboratory in promoting Digital Literacy among undergraduate students of the Faculty of Foreign Languages (FALEST) of the Federal University of Pará, Bragança Campus. This research is characterized as exploratory, using as its main method for data collection the analysis of reports on activities carried out in the space from 2019 to 2025. Literature Review on articles by researchers related to Digital Literacy, such as Soares (2002); Freitas (2010); Rojo (2012); Paiva (2013); Menezes (2019; Leffa (2020); Coscarelli and Gomes (2022); Negócio (2025), and official documents that guide teacher education in the country, such as the National Curriculum Guidelines (2024). The analysis of the collected data showed that LABLIN, during the period analyzed, has been consolidating itself as an essential tool for promoting pedagogical practices focused on improving language skills and the autonomous and reflective use of digital technologies. Despite these contributions, the study identified challenges related to the maintenance and infrastructure of this space, as well as the integration of LABLIN into the Course Pedagogical Project (2019).

Keywords: Digital Literacy. Teacher Education. Language Laboratory.

RESUMO: Este estudo tem como objetivo identificar as potencialidades do Laboratório de Linguagens na promoção do Letramento Digital entre os estudantes de graduação da Faculdade de Línguas Estrangeiras (FALEST) da Universidade Federal do Pará, Campus Bragança. Esta pesquisa é de caráter exploratório e descritivo, tendo como principal instrumento para a coleta de dados a análise dos relatórios de atividades desenvolvidas no

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espaço no período de 2019 a 2025. A Revisão de Literatura de artigos acerca do Letramento Digital, como Soares (2002); Freitas (2010); Rojo (2012); Paiva (2013); Menezes (2019); Leffa (2020); Coscarelli e Gomes (2022); Negócio (2025), e documentos oficiais que norteiam a formação docente no país, bem como as Diretrizes Curriculares Nacionais (2024) auxiliaram nas reflexões. A análise de dados coletados evidenciou que o LABLIN durante o período analisado vem se consolidando como uma ferramenta essencial para a promoção de práticas pedagógicas centradas no aprimoramento das habilidades linguísticas e no uso autônomo e reflexivo das tecnologias digitais. Apesar das contribuições, o estudo identificou desafios relacionados à manutenção e infraestrutura desse espaço, bem como à integração do LABLIN ao Projeto Pedagógico do Curso (2019).

Palavras-chave: Letramento Digital. Formação de professores. Laboratório de Linguagens.

INTRODUCTION

Technologies have always been present in teaching, 'from books to computers' (Paiva, 2015, p.1). Since the last century, a wide range of technologies has enabled learners and teachers to improve their methods of studying and teaching languages. Consequently, teaching methodologies have kept pace with this continuous process of innovation.

In the current context of technology-mediated teaching, teachers must be proficient in digital tools and understand their role in the teaching and learning of an additional language. Despite the growing use of technological tools in the educational process, whether in the classroom or in specialized environments such as the Language Laboratory³, many teachers face challenges in integrating resources, such as websites, applications, online games, in a pedagogically meaningful way. This debate is fundamental, since developing digital skills for the classroom contributes to an education aligned with contemporary changes.

The concern regarding the technological competencies of teachers is not new. Since the 1990s, following the popularization of computers and the Internet, various studies have focused on this issue (Chapelle, 1990; Pennington, 1996; Lévy, 1997; Warschauer & Healey, 1998 *apud* Marzari & Léffa, 2013, p. 5). Chapelle (1990), for instance, proposed analyzing

³The Language Laboratory (LABLIN) is an academic space linked to the Faculty of Foreign Languages (FALEST) at the Federal University of Pará, Bragança campus. A more detailed description of its objectives and activities will be presented starting from the section in the page 6: Context of the creation of the Language Laboratory.

student interactions with technology based on discourse analysis elements. Seven years later, Lévy (1997) studied the inclusion of digital technologies in teacher education and the implications that this process might generate.

This research emerged from my interest in subjects related to technology in education and language teaching, an interest that was deepened by my experiences in institutional projects. I have been a volunteer in the Language Laboratory (LABLIN) teaching project for four semesters, a learning environment designed not only to practice the English language but also develop skills in other knowledge fields, specifically language teaching technologies.

From this perspective, this study aims to identify the potential of the Language Laboratory in promoting Digital Literacy among undergraduate students of the Faculty of Foreign Languages (FALEST) of the Federal University of Para, Bragança Campus. The specific objectives of this research are: to describe the possibilities of activities and methodologies that can be developed within the Language Laboratory for the development of Digital Literacy; and to analyze the concepts of Digital Literacy based on scholars in the field and their relevance to the process of English Teacher Education.

As methodological procedures adopted for this research to achieve the proposed objectives, this exploratory research will use the analysis of the Laboratory's activity reports, dated from 2019 to 2025. Reading these documents provided a broad overview of the practices developed within Lablin and the resources and methodologies that assisted in these activities. To analyze the concepts of Digital Literacy, contemporary concepts on the subject were explored, making it possible to identify fundamental elements for the development of Digital Literacy. Both procedures provided support to achieve the objectives proposed in this study.

Thus, this work is structured into sections: the Digital Literacy section, which will present a timeline of Digital Literacy concepts and its relationship with teacher education, guided by the Educational Guidelines; the section on the context of the creation of the Language Laboratory, followed by the objectives of this space related to the Pedagogical Framework; afterward, the section that will provide an overview of the pedagogical activities at LABLIN since the implementation in 2019 to the present. Then, the final considerations about the relevance and impact of the activities run at the laboratory.

DIGITAL LITERACY

First, it is important to highlight the various existing forms of literacy, from the usual to the digital. For Soares (2002), there are different modes of literacy, with a pluralization of the term: there are literacies and not literacy, "different spaces of writing and different mechanisms of production, reproduction and dissemination of writing result in different literacies" (Soares, 2002, p.156, my translation). The pluralization of teaching methodologies in different contexts results in different forms of learning, which adapt to the contemporary educational reality of the world.

From this perspective, the insertion into this growing technological reality has led to the emergence of new forms of learning, consequently giving rise to new forms of Literacy. About that, Moreira (2012) states that

The need for an individual to be digitally literate arose from the idea that a digital source can generate many forms of text information, such as images, sounds, etc. Therefore, a new form of literacy was necessary in order to give meaning to these new forms of presentation. (Moreira, 2012. p.4 my translation)⁴

In more recent studies such as that of Coscarelli and Gomes (2022), the authors rely on the notion of competences and abilities by explaining that, for them, Digital Literacy is the faculty that the individual develops to live with the practices of comprehension and production of texts, of digital origin, websites, social networks, applications, forums, and that can be accessed by tools such as computer, mobile phone, tablet.

As the concept of Digital Literacy has moved beyond mere functional skill acquisition to become a central pillar of social and academic participation, teacher education programs have faced the urgent need to integrate these literacies into their core curricula. This integration, however, must transcend the instrumental 'how-to' approach; it requires a critical understanding of how digital practices reshape language, identity, and power dynamics in the classroom. Consequently, promoting the use of technologies in teacher education is not merely a pedagogical choice but a regulatory requirement. This is evidenced by the Brazilian National Curriculum Guidelines⁵ (DCN), established by Resolution CNE/CP No. 4 of May 29, 2024. Article 7, paragraph VI, advocates for the integration of digital technologies as follows:

⁴A necessidade de um indivíduo ser letrado digitalmente surgiu a partir da ideia de que uma fonte digital pode gerar muitas formas de informações de texto, como imagens, sons, etc. Por isso, uma nova forma de alfabetização era necessária com o intuito de dar sentido a essas novas formas de apresentação. (Moreira, 2012. p.4)

⁵A set of mandatory standards to guide, conduct, and coordinate curricula and procedures in basic and higher education in Brazil, contributes to the organization and development of pedagogical proposals.

The use of Digital Information and Communication Technologies (TDIC), enabling the development of digital teaching skills, for the improvement of pedagogical practice, and the expansion of the cultural training of teachers and students (Brasil, 2024, p. 6 my translation).⁶

While the CNE/CP Resolution No. 4/2024 provides a necessary regulatory framework for the integration of Digital Information and Communication Technologies (DICT), its implementation faces significant socio-pedagogical hurdles. Drawing on Rojo's (2012) work on multiliteracies, it is clear that the DCN's emphasis on 'digital teaching skills' often risks oversimplifying the complexity of contemporary social practices, overlooking the school reality where precarious infrastructure hinders the transformative potential of these literacies. As Soares (2002) argued, literacy also has a social dimension, and the university has a role to play in recognizing digital inclusion not only as a mechanical skill but also as a social right. The shift from a purely instrumental view of technology toward a critical, reflective paradigm is central to contemporary Applied Linguistics. As established, the integration of Digital Information and Communication Technologies (DICT) into teacher education, though mandated by the CNE/CP Resolution No. 4/2024 must be understood through the lens of social practice rather than mere technical proficiency. This critical stance is further supported by Freitas (2010), who argues that defining an individual as digitally literate transcends the mechanical operation of digital tools. According to the author, digital literacy is intrinsically linked to a reflective practice in which production and interaction become sites of meaning-making. As the author notes:

Being digitally literate includes not only functional knowledge about the use of computer-enabled technology, but also critical knowledge about that use. Thus, becoming digitally literate means learning a new type of discourse and, at times, is even similar to learning another language (Freitas, 2010, p. 338, my translation).⁷

This conceptualization of technology as a 'new discourse' poses a direct challenge to the traditional structure of Language Laboratories in Brazilian *Letras* undergraduate programs. Historically, as Leffa (2005) points out, these spaces were often conceived under a behaviorist logic of repetition and phonetic control, serving more as sites for language 'training' than for the development of digital agency. Even as these laboratories evolved into computerized environments, a persistent 'instrumental bias' frequently limits their potential.

⁶ O uso de diferentes espaços de aprendizagem, como salas de aula, laboratórios, bibliotecas, espaços digitais, espaços recreativos e desportivos, ateliês, museus, secretarias entre outros, necessários ao pleno desenvolvimento das atividades escolares. (Brasil, 2024, p. 6).

⁷ Ser alfabetizado digitalmente inclui não apenas o conhecimento funcional sobre o uso da tecnologia computadorizada, mas também o conhecimento crítico sobre esse uso. Assim, tornar-se alfabetizado digitalmente significa aprender um novo tipo de discurso e, às vezes, é até semelhante a aprender outro idioma. (Freitas, 2010, p. 338).

Paiva (2013) emphasizes that technology should act as an affordance for complexity and interaction; however, in many Brazilian universities, the laboratory remains a marginalized space, disconnected from the core curriculum and the socio-critical demands of the 21st-century classroom. Consequently, the following sections analyze how these physical and virtual spaces are being utilized in the English Language Teaching (ELT) programs in the Federal University of Para, in Bragança, questioning whether they foster the "critical knowledge" proposed by Freitas or merely replicate obsolete pedagogical models under a digital veneer.

Context of the creation of the Language Laboratory (LABLIN)

The star of a Laboratory for language teaching and learning was already a requirement for the Pedagogical Course Project (2019) for the English Language course. Eight years after the proposal was drafted, in 2018, the Faculty of Foreign Languages (FALEST) managed to equip the laboratory space with computers and software. LABLIN began operating effectively in 2019, following the submission of a proposal to the “*Pró-Reitoria de Ensino de Graduação da UFPA, do Subprograma de Apoio à Infraestrutura de Laboratórios de Ensino de Graduação e da Educação Básica, Técnica e Tecnológica*” (LABINFRA-PROEG). The laboratory is located at UFPA, Bragança campus. Since the inauguration, it has served the entire academy community on campus.

Lablin consists of a 20m² space with glass windows, thirty computer desks (for students) and one for the teacher. It has a permanent internet connection, which enables the development of research, teaching, and extension activities. Each student has a complete computer, headphones, a webcam, and a SANAKO control panel, which allows students to work interactively on aspects such as phonological study, verbal interaction, and oral production. The teacher's desk has two computers that manage all activities in progress at the student's desk, a webcam, and two SANAKO CPUs, Lablin also has STUDIO 500, software that assists in reading and writing activities, both software programs allow learners to become more proficient in language learning, enabling them to communicate with other students and develop their own autonomy in the learning process.

The software available enables various activities that promote the exercise of the four language skills: Reading, Listening, Speaking, and Writing, such as group conversations, pair conversations, recording responses, and an audio panel for each user, giving students autonomy to record, play back, and re-record audio produced by the learners themselves. The

thirty computers with unlimited internet access help students with research related to college subjects.

Students or teachers can request an appointment in the Laboratory using online forms on Google Forms, available on Lablin's website⁸ and social media pages. On the form, it is possible to schedule the day and time according to the space's availability, the software that the student or teacher will likely use for study/class, and the skills that the student will work on with the help of the available resources.

LABLIN Objectives and Pedagogical Framework

According to the Strategic Planning of Laboratory activities for 2024, the main objective of the Language Laboratory of the Language Laboratory (LABLIN), in alignment with the Faculty of Foreign Languages (FALEST) guidelines, is to cultivate both communicative competence and digital proficiency among undergraduate students in the English and Portuguese Language programs, as well as students across various disciplines. Furthermore, the laboratory extends its infrastructure to graduate researchers within the *Linguagens e Saberes da Amazônia* Master's program, positioning itself as a strategic site for advanced linguistic study at the Bragança Campus.

Specifically, LABLIN is designed to:

- a) Foster listening comprehension and oral production through the integration of emerging technologies;
- b) Cultivate learner autonomy within the process of English language acquisition;
- c) Support development and curation of digital instructional materials for ELT (English Language Teaching);
- d) Facilitate cross-institutional network to promote authentic linguistic interaction;
- e) Equip pre-service teachers with digital literacies and pedagogical fluency in educational technologies;
- f) Curate a digital repository of multimodal activities addressing the four primary language skills;
- g) Consolidate a praxis-oriented space that integrates teaching, research, and community extension;

⁸ [LABLIN's Site](#)

- h) Establish a research network focused on Self-Access Centers (SACs), investigating the intersection of motivation, autonomy, interculturality and educational technology.

These objectives resonate with the perspectives of Menezes (2019), who posits that language laboratories should provide learners with "affordances" for interaction in quasi-authentic language use contexts, thereby expanding the horizons of second language acquisition (SLA). Consequently, the laboratory transcends its role as a mere computer room, emerging as a hub where technological competence converges with autonomous pedagogical practice. To operationalize these goals, particularly regarding social impact, LABLIN promotes workshops and short courses for the broader academic community. These initiatives are designed to deepen linguistic practice through technological mediation, effectively bridging the gap between theoretical teacher education and practical community engagement.

Distancing itself from the rigid, audio-lingual laboratories of the late 20th century, contemporary spaces like LABLIN are conceptualized to empower learners through self-management and agency. By providing a diverse array of digital resources, the laboratory seeks to maximize exposure to the target language, offering a learning experience that is simultaneously engaging, innovative and aligned with the complexities of the digital age.

However, the realization of these ambitious objectives is not without significant challenges. While the LABLIN is conceptually designed as a transformative hub for autonomy and digital literacy, the transition from institutional guidelines to sustained pedagogical practice often encounters systemic hurdles. The maintenance of such a space requires not only consistent financial investment in hardware and software but also, and more crucially, a continuous program of teacher development that prevents the laboratory from reverting to a mere site of instrumental consumption. There is a persistent risk that, without a robust integration into the core curriculum of the *Letras* program, the laboratory may function as an 'isolated island' of technology, failing to bridge the gap between the university's high-level research and the stark, under-resourced reality of public schools in the Amazon region. Therefore, maintaining the LABLIN's goals requires a constant critical vigil to ensure that its "self-access" and "autonomy" frameworks do not inadvertently translate into student isolation, but rather into a socially grounded, technologically mediated form of agency that prepares future teachers for the complexities of the 21st century landscape.

Pedagogical Praxis and Digital Agency: An Overview of LABLIN's Activities (2019-Present)

This section delineates the core pedagogical initiatives undertaken by LABLIN since its inauguration, grounded in a comprehensive analysis of institutional activity reports spanning from May 2019 to the present. Far from being a mere repository of technical exercises, the activities developed at the Laboratory reflect a commitment to integrating digital literacies within the *Letras - Língua Inglesa* curriculum, while simultaneously fostering community engagement through workshops and extension programs.

Since its formal establishment in 2019, the Laboratory has functioned as a vital space for the academic community at the Bragança Campus. Its operational framework is intrinsically linked to the Pedagogical Course Project (PCP), as mandated by Resolution No. 5221 of September 24, 2019. This resolution not only institutionalizes LABLIN as a cornerstone of pedagogical activities but also ensures its systemic integration into the curricular structure. By aligning its initiatives with these regulatory guidelines, LABLIN seeks to transform the theoretical mandates of teacher education into tangible practices, addressing the multifaceted demands of language learning and technological mediation in the contemporary Amazonian context.

In its initial stages, LABLIN's usage by English language undergraduates was primarily characterized by individual tasks focusing on oral comprehension and production. In agreement with the laboratory's first-year activity report, while the available software architecture supports the integrated development of all four linguistic skills, reading and writing were initially less emphasized. However, this dynamic has evolved significantly. Today, the laboratory systematically supports an expanding range of curricular subjects, including English Language (II, III, VII), Literatures in English (I, II, III), English Phonetics and Phonology, and Written Comprehension and Production Practices. This increasing demand reflects a growing recognition among both faculty and students of the laboratory as an 'affordance-rich' environment that facilitates authentic and interactive language practices. As the academic community gains fluency in the laboratory's digital ecosystem, the space has transitioned from a novel technological resource to a successful site of pedagogical innovation.

Beyond its strictly curricular function, LABLIN serves as a catalyst for Digital Literacy through diverse extension initiatives that bridge the gap between technological tools and innovative methodologies. This trajectory began in 2019 with the "Academic Writing" course and gained momentum in 2023 through a strategic partnership with the *Teacher Plus*

project. The "Digital Literacy" workshop was a milestone in this regard, engaging pre-service teachers with essential academic platforms such as Google Drive, Google Docs, Canva, and Notion. That same year, the "Reading Strategies in English" mini-course further diversified the laboratory's offerings. In 2024, the space's institutional relevance was reinforced by hosting English courses for the *Pró-Reitoria de Relações Internacionais* (PROINTER/UFPA). Most recently, in 2025, scholarship holders and volunteers led the "Exploring Google Tools" workshop, specifically designed to initiate incoming undergraduates into the digital academic culture of the campus as we can illustrate in the table below:

Table 1 - Quantitative and Qualitative Overview of LABLIN Activities (2019–2025)

Year	Initiative / Project	Primary Target Audience	Key Tools & Literacies Addressed	Impact & Institutional Role
2019	Academic Writing Course	Letras Undergraduates	Formal registers, text structure.	Initial integration of LABLIN into the PCP.
2023	Digital Literacy Workshop (Teacher Plus Research Project)	Pre-service English Teachers	Google Drive, Docs, Canva, Notion.	Focus on cloud-based collaboration & design.
2023	Reading Strategies in English	Academic Community	Digital reading & cognitive strategies.	Promotion of autonomy in language acquisition.
2024	PROINTER Language Courses	UFPA Community	Multi-level English proficiency.	Internationalization of the Bragança Campus.

2025	Exploring Google Tools Workshop	Incoming Undergraduates	Academic digital ecosystem (G-Suite).	Digital onboarding and academic literacy.
Annual	Curricular Support (Res. 5221)	40 Students per Year	Phonetics software, VLEs, Multimedia.	Direct alignment with the English Arts PCP.

Source: By the author.

The data presented in the table above illustrates a clear trajectory from functional training to critical digital agency. While the 2019 initiatives were largely focused on traditional academic skills, the shift observed from 2023 onwards particularly through partnerships like the *Teacher Plus* project, demonstrates an alignment with the "new discourses" proposed by Freitas (2010).

Quantitatively, the laboratory's ability to support the annual intake of 40 students while simultaneously hosting extension programs for PROINTER and incoming freshmen indicates a high level of institutional permeability. However, from a critical perspective, this increasing demand poses a challenge: the "pedagogical fluency" mentioned in previous sections requires not just access to tools like Canva or Notion, but a continuous reflection on how these tools reshape the identity of the English teacher in the Amazonian context. The transition from a 'Language Lab' to a 'Digital Literacy Hub' is evident, yet it demands sustained institutional support to ensure that the 2025 onboarding efforts translate into long-term academic success and critical professional practice.

In conclusion, the trajectory of LABLIN from 2019 to 2025 reveals a significant paradigm shift in the Faculty of Foreign Languages (FALEST) at the Bragança Campus. The transition from isolated activities focused on phonetic repetition to a robust agenda of multiliteracies and community outreach demonstrates that the laboratory has transcended its initial role as a remedial tool. It has emerged as a cornerstone of praxis, where the legal requirements of Resolution No. 5221/2019 meet the 'real-world' demands of contemporary education.

However, as the quantitative data suggests, the increasing reliance on this space for both curricular and extracurricular initiatives highlights a critical necessity: the continuous negotiation between technological affordances and pedagogical intentionality. For the future

teachers of the Letras - Inglês program, LABLIN represents more than a site for language practice; it is a space for the construction of a professional identity that is digitally fluent, autonomous, and critically aware of its socio-historical context. Ultimately, the success of these initiatives ranging from the *Teacher Plus* partnership to the internationalization efforts via PROINTER underscores the laboratory's potential to bridge the gap between university research and the diverse classrooms of the Amazonian region, ensuring that digital literacy is treated not as an administrative mandate, but also as a fundamental social practice.

FINAL CONSIDERATIONS

The research proposal for this article aimed to analyze the process of developing Digital Literacy in language teacher education and how the Language Laboratory, as an educational tool, can support this process. Based on exploratory research, grounded in the analysis of LABLIN activity reports dating from its implementation until 2025, and on concepts of Digital Literacy, it was possible to analyze and reflect on the role and achievements of this environment in connecting digital practices, teacher education and critical thinking.

The results of this research show that LABLIN has, over the years, established itself as a space for the development of innovative pedagogical practices. The actions developed in this environment seek alignment with practices and the critical use of digital technologies, beyond their merely instrumental use.

Although, challenges to the implementation and proper operation of LABLIN must be considered, such as the need for continuous investment in infrastructure, the inclusion of the Laboratory in the course's PCP, so that it can be a continuous space for teacher development, and the use of tools is not limited to instrumental and decontextualized use.

The analysis of the reports allowed us to visualize the practices developed in the laboratory and how they contribute to the development of critical thinking about the pedagogical use of digital tools, in addition to improving skills.

In conclusion, the Language Laboratory is an essential educational tool for promoting Digital Literacy in teacher education, and is characterized as a strategic space with great potential for critical studies related to the topic and reflective learning of new technologies. It is hoped that this work will contribute to future discussions on Digital Literacy and the recognition of educational spaces such as LABLIN as spaces for educational integration.

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