

**SPANISH LANGUAGE AND ARTS TEACHER TRAINING IN AN ONLINE
INTERDISCIPLINARY LABORATORY (LION)**

**FORMAÇÃO DE PROFESSORES DE LÍNGUA ESPANHOLA E ARTES EM UM
LABORATÓRIO INTERDISCIPLINAR ONLINE (LION)**

**FORMACIÓN DE PROFESORES DE LENGUA ESPAÑOLA Y ARTES EN UN
LABORATÓRIO INTERDISCIPLINAR EN LÍNEA (LION)**



Isadora Valencise GREGOLIN¹
e-mail: isadora@ufscar.br



Viviane Cristina Garcia STEFANI²
e-mail: vivigarcia@ifsp.edu.br



André Garcia CORRÊA³
e-mail: andregcorrea@ifsp.edu.br

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¹ Federal University of São Carlos (UFSCar), São Carlos – SP – Brazil. Lecturer in the Teaching Methodology Department of the São Carlos-SP campus.

² Federal Institute of São Paulo (IFSP), São Carlos – SP – Brazil. Spanish Language teacher at the IFSP-São Carlos-SP campus.

³ Federal Institute of São Paulo (IFSP), São Carlos – SP – Brazil. Arts teacher at the IFSP-São Carlos-SP campus.

ABSTRACT: The article presents the initial results of research developed in partnership between a public university in the interior of São Paulo and 3 (three) Basic Education schools that analyze the training paths of research teachers. It specifically describes and problematizes the professional development process of Spanish language and art teachers in a collaborative and interdisciplinary context with mediation and interaction through the virtual platform Moodle, which resulted in the configuration of an Online Interdisciplinary Laboratory (LION). As initial results, the proposal for teacher training based on a collaborative methodology and with an emphasis on scientific and technological education has made it possible a more contextualized and interdisciplinary teaching training and contributed to a better understanding of the importance of design in contexts mediated by digital technologies for the development of autonomy, engagement and belonging.

KEYWORDS: Teacher training. Online laboratory. Technologies. Spanish language. Art.

RESUMO: O artigo apresenta resultados de pesquisa desenvolvida em parceria entre uma universidade pública do interior de São Paulo e 3 (três) escolas de Educação Básica que analisa os percursos formativos de professores pesquisadores de língua espanhola e artes. Para tanto, descreve e problematiza, especificamente, o processo de desenvolvimento profissional dos professores em um contexto colaborativo e interdisciplinar com mediação e interação por meio da plataforma virtual Moodle e que resultou na configuração de um Laboratório Interdisciplinar Online (LION). Como resultados e contribuição para a área, a proposta de formação de professores, baseada em uma metodologia colaborativa e com ênfase na educação científica e tecnológica, tem promovido uma formação docente mais contextualizada e interdisciplinar, além de contribuir para uma melhor compreensão sobre a importância do design em contextos mediados por tecnologias digitais, favorecendo o desenvolvimento da autonomia, do engajamento e do senso de pertencimento.

PALAVRAS-CHAVE: Formação de professores. Laboratório online. Tecnologias. Língua espanhola. Artes.

RESUMEN: El artículo presenta los primeros resultados de una investigación desarrollada en colaboración entre una universidad pública del interior de São Paulo y 3 (tres) escuelas de Educación Básica que analiza las trayectorias de formación de docentes investigadores. Describe y problematiza específicamente el proceso de desarrollo profesional de profesores de lengua española y artes en un contexto colaborativo e interdisciplinario con mediación e interacción a través de la plataforma virtual Moodle y que tuvo como resultado la configuración de un Laboratorio Interdisciplinario en Línea (LION). Como resultados iniciales, la propuesta de formación docente basada en una metodología colaborativa y con énfasis en la educación científica y tecnológica favoreció una formación docente más contextualizada e interdisciplinaria y contribuyó a una mejor comprensión de la importancia del diseño en contextos mediados por tecnologías digitales para el desarrollo de la autonomía, el compromiso y la pertenencia.

PALABRAS CLAVE: Formación de profesores. Laboratorio en línea. Tecnologías. Lengua española. Arte.

Introduction

The aim of this article is to present the results of a research project⁴ developed in partnership between a public university in the interior of São Paulo and three primary schools, which proposes a teacher training methodology based on the training paths of experienced teacher-researchers from different areas of knowledge, such as Spanish language and art teaching, with the mediation of digital technologies in a virtual environment.

It is based on the assumption that teachers' professional development (Marcelo, 2009) takes place throughout their careers, at different times, and in other spaces, requiring specific types of knowledge to be mobilized in order to deal with the complexities inherent in the profession.

The training methodology developed by the project seeks to articulate initial and continuing training through a partnership between the university and the schools. This type of perspective was only consolidated as a research topic in the field of education from the end of the 20th century when it began to be incorporated into public policy. Until then, the knowledge produced by teachers in school contexts did not have the same scientific legitimacy as that produced by universities. Foerste (2004, p. 1), when dealing with the partnership between schools and universities, points out that:

Until the 1980s, this integrated work was the result of individual initiatives and efforts, generally centered on the goodwill and commitment of teachers of some subjects in the curriculum of degree courses and some schools. The relationship established rarely followed inter-institutional agreements, with negotiated rules, built on collective reflections on teaching practice (in schools and at university). This partnership was dominated by theoretical and practical assumptions that ended up overlapping academic knowledge with the practical knowledge of basic education professionals (Foerste, 2004, p. 3, our translation).

Nunes (2001) argues that, from the final decades of the 20th century onwards, a new research agenda emerged in the area of teacher training that sought to value the teaching professional as a subject who possessed and produced knowledge for the exercise of their profession. This period also realized that the knowledge required for teaching is partly learned during initial training but that its construction and updating is part of a continuous process of

⁴ The research project will run from 2022 to 2025 and is entitled “*Educação científica e tecnológica no Laboratório Interdisciplinar Online em rede: estudo sobre a colaboração e a interdisciplinaridade no percurso formativo de professores-pesquisadores da Educação Básica*” (Process 404276/2021-0, Universal/CNPq Call for Proposals - Band B - Consolidated Groups).

development involving different types of knowledge and interaction with other teaching professionals throughout the career.

Authors who have looked into the question of the knowledge and/or skills needed to work as a teacher, including Tardif (2012), understand that this knowledge is divided into disciplinary, professional, and pedagogical categories. The notion of tacit knowledge and the importance of reflecting on practice as a way of learning to be a teacher are also important elements in the constitution of teaching identities.

Still, in the final decades of the 20th century, Shulman (2005) developed the notion of a teacher knowledge base (knowledge base), divided into categories: content knowledge and pedagogical knowledge, the intersection between which is classified as pedagogical content knowledge. The latter results from the reflection on practice carried out by the teacher himself when he confronts the reality of his daily professional life with the knowledge acquired in his initial and continuing training.

Based on these notions, Mishra and Koehler (2006) added a third category to the base: technological knowledge. This category also establishes intersections with the others, and the confrontation of these categories with reflection on practice generates technological pedagogical content knowledge. The authors' main argument is that the inclusion of digital technologies in the daily lives of teachers and students, and consequently in teaching-learning approaches, has become a constant presence and an indispensable category of knowledge for teaching.

In addition to the constant questioning of the types of knowledge that make up teaching, it is a consensus in the field of education to recognize the importance of reflection on teaching practice. Schön (1983) was one of the first to defend the notion of the reflective teacher, while Zeichner (2008) expanded the concept, describing this type of teacher as one who makes decisions to improve teaching based on their objectives and the needs of the students. Perrenoud (1999) also argues that teachers need a capacity for methodical reflection and a critical attitude towards contexts inside and outside the school, enabling them to choose strategies to improve their practice.

Objective

Taking into account the different types of knowledge involved and the importance of reflection in teacher training, this article aims to present the methodological proposal for training experienced Spanish language and art teachers in a collaborative and interdisciplinary context, developed with the mediation of digital technologies and interaction through the Moodle virtual platform (*Modular Object-Oriented Dynamic Learning Environment*), resulting in the configuration of an *Online Interdisciplinary Laboratory* (LION).

Methodology

The proposal for an interdisciplinary *online* laboratory for teacher training aims to bring together, in a single virtual space, records and evidence of training processes involved in professional teaching, be they formal, informal, or non-formal. In this sense, the exchange and sharing of reflections, doubts, teaching materials, plans, autobiographical records, and narratives between teachers from different areas and levels of education allow experiences and reflections to be revisited and, in the process of socialization, new understandings to be built about careers, teaching objects and teaching identities.

The choice of Moodle (*Modular Object-Oriented Dynamic Learning Environment*) as the *online* platform for setting up LION is justified by its free and *open-source* nature, which makes it possible to adapt the resources offered according to the training and interactive needs of the team. The accessibility offered by the platform meets the principle of democratizing access, and its interface, allows the incorporation of resources for organizing and making digital files available in different formats, as well as tools for synchronous and asynchronous interactions, allowing all participants to edit, is in line with our assumption of a collaborative partnership.

The most recent version of MOODLE, used by LION, makes it possible to set up gamified *navigation and interaction paths*, as can be seen in Figure 1, which illustrates the LION home screen:

Figure 1 - LION home screen



Source: Prepared by the authors.

The top right-hand corner of Figure 1 illustrates the participant's "Experience" *gamified* in the laboratory, indicating how many "points" they have already obtained in the planned activities, their "ranking" in relation to the other participants, and what "level" they are at. Although MOODLE was not conceived as a platform for *gamifying* learning experiences, the growing interest and need of the teaching team to understand *online* gamification as a more active teaching strategy led to the use of a *plugin* that enables this experience, with a view to better understanding the participants' engagement in this context.

The perspective of collaborative and interdisciplinary training and action among the teachers involved in LION presupposes the collection and systematization of various digital records to document and share teaching and learning processes among peers for further reflection and action. Thus, through a collaborative partnership (Foerste, 2005) between universities and schools, the laboratory includes data on the processes of planning and implementing teaching, learning, and management actions, to identify and characterize challenges related to the implementation of curricula, the use of technologies and different teaching methodologies.

The practice of documenting and recording teaching actions and conceptions is commonly required in various professional teaching contexts, such as the request for "teaching plans" and "assessments". However, these records are not always subject to informed interpretation and reflection, nor are they compared with the results achieved in the teaching and learning processes. What's more, many essential aspects of educational processes are lost in the dynamics of schools, which, for countless reasons, are unable to look back on them.

In our context, we consider the social role of writing in the process of professional teacher training to be fundamental since it can help organize knowledge, make decisions, and

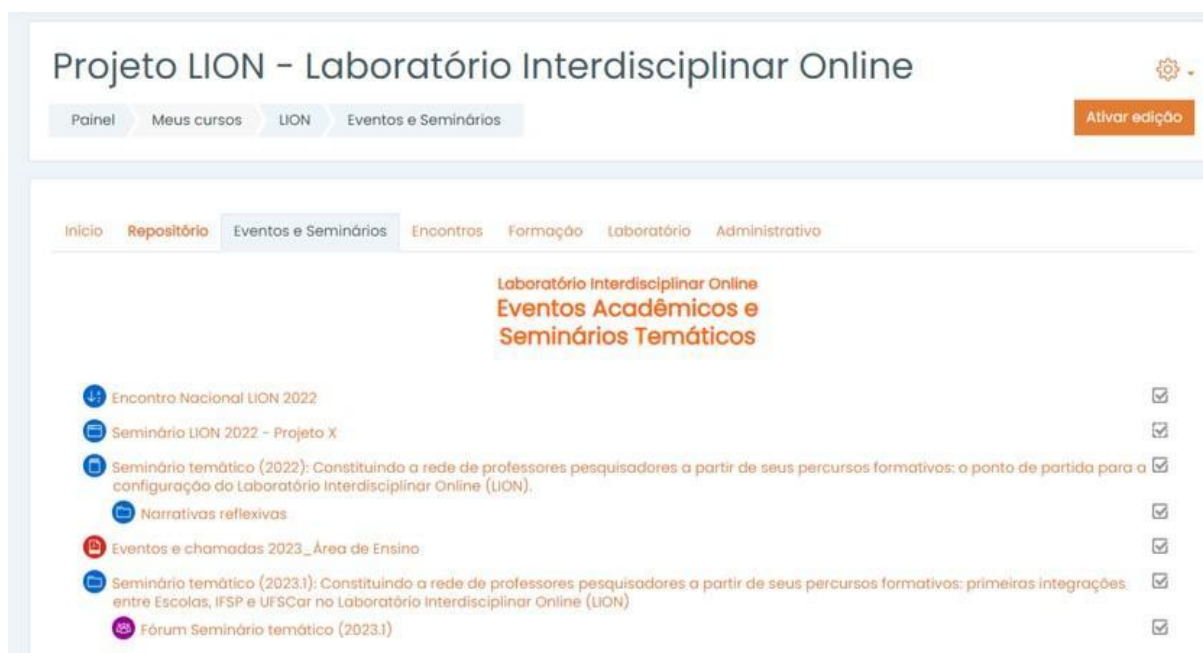
reconstruct and socialize practices. In this way, the teachers taking part in the project are responsible for frequently posting on LION the records related to their training paths that they consider most relevant for sharing in the lab's virtual Forum, Repository, and Videoconferencing spaces.

Conrad and Openo (2018, p. 190-191) state that "creating and maintaining a sense of community in online learning has been widely recognized as critical to students' sense of well-being and affective satisfaction, which are the two main factors in favoring learning processes". In this sense, the phenomenon of collaborative interaction between teachers can be explained by Activity Theory (AT) (Garcia-Stefani, 2015, p. 26). This theory of praxis, first formulated in the 1920s by Leontiev (1981), Vygotsky (2001), Luria (1985) and later expanded by Engeström (1999, 2002), studies human development through the action of men and women in the world, aiming to transform relations of social inequality and oppression.

In this context, Activity Theory emphasizes the importance of interaction in a mediation process, with the obligatory use of a certain instrument, which, in the case of our project, is LION itself.

The laboratory was conceived not just as a repository space, but as an environment of interaction and collaboration for critical reflection on teaching. Figure 2 illustrates the LION screen, containing the online events that took place in the first few years:

Figure 2 - LION events screen



Source: Prepared by the authors.

Based on Activity Theory, Magalhães (2012) develops the concept of Critical Collaborative Research (PCCol), according to which the organization, conduction and evaluation of projects should be guided by discussions, understanding and transformation of ways of acting in school contexts, based on issues of justice, empowerment and critical citizenship.

It's interesting to note that the themes and formats of LION events are proposed by the group of teachers, depending on the demands of their contexts. In this sense, in line with Engeström (2022, p. 189, apud Garcia-Stefani, p. 36), we considered the importance of enabling interventionist and collaborative research that allows for: 1) the full participation of those involved in carrying out the tasks; 2) horizontal interaction between the participants, mediated by problem situations and solutions; and 3) making the technologies and structures of the community of practice available to everyone.

With these assumptions in mind, the project began with the challenge of planning the subject *Língua, Cultura e Artes Hispânicas* (LCAH), the aim of which was to promote Spanish language learning from an interdisciplinary perspective, using art as a teaching, learning, and assessment tool.

Considering that this article presents initial data on the project, since it is still in the implementation phase, it deals specifically with LION's contribution to the continuing education of the participating teachers involved in the planning and implementation of an interdisciplinary subject, entitled *Língua, Cultura e Artes hispânicas* (LCAH), taught on a compulsory basis in the first year of secondary school in a Federal Public School.

The initial interactions in the laboratory took place in 2021, with the mediation of digital technologies, and included at least three phases: 1) planning, 2) implementation, and 3) post-implementation.

Phase 1 (planning) provided for sharing reports on the training of all the teachers involved, including not only initial training⁵, but also practical experiences in teaching and non-teaching. Phase 1 also included socializing the planning of the interdisciplinary subject, which was to be implemented in an innovative way in one of the teaching contexts.

Phase 2 (implementation) involved monitoring the classes being taught, through weekly meetings between the two teachers responsible for the subject - together with trainees from the partner university's Languages course, under the guidance of a university lecturer, who also took part in the classes. In addition, virtual general sharing meetings and focus groups were held, involving all the teachers from the three schools involved in the project, including the research coordinators⁶.

Phase 3 (post-implementation) provided for the systematization of the results by means of reflections, analyses, and theorizations on the actions that took place during the project, specifically with regard to the extent to which these actions contributed to the continuing education of the teacher-researchers involved.

⁵ The research project considers that non-teaching training and experiences also contribute - often significantly - to teaching performance, for example, a math teacher with a degree in music, who reports that the experiences she has had through music contribute to her performance in the area of mathematics.

⁶ It is worth noting that in this project, all the teachers involved act as researchers, since they are instructed to observe, analyze, reflect on and report on the processes and their results, in the professional, academic and scientific spheres.

Results and discussion

The start of the research project coincided with the school's curriculum reformulation process, which made it possible to propose an interdisciplinary subject⁷. The concept of interdisciplinarity necessarily implies the concept of discipline, as there is an interrelationship between the sciences (Fazenda, 2008). In the school context, the notions, aims, skills, and techniques worked on in an interdisciplinary way are aimed above all at promoting the learning process, respecting the student's knowledge and their integration.

The current trend to encourage more interdisciplinary teaching seeks to overcome the model of teaching compartmentalized into disciplines that often don't talk to each other. However, interdisciplinarity is still not addressed in most initial and continuing teacher training courses, which was one of our greatest challenges.

In public schools where Spanish and art teachers work, it is possible for two teachers to share the same curricular component, which can happen in different ways. One of them is for each teacher to teach their part of the content, dividing the course into two stages, one teaching the initial lessons and the other the final ones. Another possibility would be to work every other day or week. In the case of the LCAH subject, we opted for total sharing, in which the two teachers teach classes together, carry out the weekly planning together, make the necessary adaptations to the Teaching Plan, prepare the activities and evaluative actions throughout the two months and evaluate the results obtained, with an emphasis on the impact on their continuing education.

Working together in the classroom has allowed for mutual learning between Spanish and the arts, especially in terms of teaching practice, by uniting these two components into one. Sharing lessons with another teacher expands the possibilities for evaluating teaching practice in its various aspects, such as the selection of content, the way it is approached in the classroom, the methods of evaluating students and the teaching practice itself, as well as ways of involving students in their learning self-assessment processes.

In this sense, the participation of two trainees, students studying for a degree in Languages, who accompanied the initial phase of implementing the curricular component, was

⁷ Something that was highly recommended by the CEIC (Commission for the Elaboration and Implementation of Pedagogical Projects for Basic Education Courses) of the course in which the two teacher-researchers (Spanish language and arts) work. According to the members of the CEIC, only with an interdisciplinary proposal would it be possible to make Spanish a compulsory subject, since up until now Spanish has been offered as an optional subject for high school students. The timing, therefore, was very favorable for the implementation of a subject that, in addition to being interdisciplinary, would contribute to strengthening Spanish in the public school system.

very significant. They were involved in planning and adapting activities, as well as in the evaluation and self-evaluation processes of the course, the students, and the teaching practice of the teachers responsible.

Theorizing teaching practices in this articulation between initial and continuing training, although still under development in our project, has taken place through a shared and collaborative process between the university and the schools involved. Several questions have been asked about the challenges faced by experienced language and arts teachers, which are quite different from those faced at the start of their careers. One of the challenges refers to the development of strategic knowledge, "when the teacher confronts certain situations or problems, whether theoretical, practical or moral, in which principles conflict, and there is no possible solution" (Shulman, 2005, p. 220, our translation)⁸.

Sharing the training journeys of experienced teachers participating in LION, through written narratives and videos, has been fundamental to understanding how much our experiences and conceptions of the world are reflected in our teaching performance.

In the specific case of the language and art teachers taking part in the project, the importance of recovering childhood games that simulated school and teacher-student relationships, as well as their dedication to after-school classes as children, was very evident in their autobiographical accounts. These experiences highlight the importance and centrality attributed to knowledge of specific content (languages and arts) and make teachers reflect on various conceptions that underpin teaching and learning, such as the need to look outside the schools for "more in-depth" teaching, the myth of the "gift and vocation" for a particular trade, among others.

The interaction with teachers from other areas, made possible by LION, was also responsible for the realization that many of our actions and conceptions as teachers (of language and the arts) are influenced by our previous experiences as students. This perhaps shows that the effect of theories on our practices is not as strong as our own experiences as students.

There was also a consensus on the weight of bureaucracy in the current teaching workload, highlighting one of the most visible effects of neoliberal educational policies. There have also been reflections on what takes place in the few moments set aside for training in schools.

⁸ Free translation of: "*opera cuando el profesor confronta determinadas situaciones o problemas, sean teóricos, prácticos o morales, en los que entran en conflicto principios y no hay solución posible*" (Shulman, 2005, p. 220).

Final considerations

As a significant contribution, the experience reported with LION has allowed the teachers involved to find greater functionality in the records produced. Participation in the University-School partnership project inspired other teachers at the school to work in an interdisciplinary way, culminating in other projects involving various curricular components, such as the Community Vegetable Garden and the Environment project, the latter of which consists of the dissolution of subjects and the participation of various teachers in thematic classes on environmental issues.

As an initial result, the proposal for teacher training based on a collaborative methodology has enabled more contextualized and interdisciplinary teacher training, which will certainly contribute to meeting the challenges imposed on Basic Education in the current context of curriculum reforms.

It has been possible to understand that it is possible to learn to be a language and art teacher in multiple ways, in different physical and digital spaces, and in an interdisciplinary way. The training experiences in the virtual space of the LION lab have contributed to a better understanding of the importance of design in contexts mediated by digital technologies for the development of autonomy, engagement, and belonging. They also lead participants to question new forms of design for an increasingly hybrid, connected, and unequal world, which demands more personalized and participatory teaching and learning proposals.

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