INSTRUCTIONAL DESIGN IN THE CONTEXT OF LANGUAGE TEACHING AND LEARNING: A REFLECTIVE EXERCISE TO SUPPORT TEACHER TRAINING

DESIGN INSTRUCIONAL NO CONTEXTO DO ENSINO E APRENDIZAGEM DE LÍNGUAS: UM EXERCÍCIO REFLEXIVO PARA SUBSIDIAR A FORMAÇÃO DE PROFESSORES

DESIGN INSTRUCCIONAL EN EL CONTEXTO DE LA ENSEÑANZA Y DEL APRENDIZAJE DE LENGUAS: UN EJERCICIO REFLEXIVO PARA SUBSIDIAR LA FORMACIÓN DE PROFESORES

Heloisa ALBUQUERQUE-COSTA[1]
e-mail: heloisaalbuqcosta@usp.br

Mônica Ferreira MAYRINK[2]
e-mail: momayrink@usp.br

Editor: Prof. Dr. Rosangela Sanches da Silveira Gileno
Deputy Executive Editor: Prof. Dr. José Anderson Santos Cruz

---

[1] University of São Paulo (USP), São Paulo – SP – Brazil. Professor of French Language and Acquisition and Learning of French as a Foreign Language (Bachelor's degree) in the Department of Modern Languages at the Faculty of Philosophy, Languages, and Human Sciences, at the University of São Paulo - USP. Faculty member of the Graduate Program in Foreign Languages and Translation (LETRA) at the University of São Paulo - USP.

[2] University of São Paulo (USP), São Paulo – SP – Brazil. Professor of Spanish Language in the Department of Modern Languages at the Faculty of Philosophy, Languages, and Human Sciences, at the University of São Paulo - USP. Faculty member of the Graduate Program in Spanish Language and Spanish and Hispanic-American Literatures (LELEHA) at the University of São Paulo - USP.

ABSTRACT: The field of activity of language teachers in online teaching and learning contexts has multiplied in recent years, leading them to the task of designing virtual classrooms within their educational institutions. The creation of these virtual learning environments has been carried out pragmatically, using available resources without, however, allowing the teacher to reflect on the choices made and the methodological steps they imply. The aim of this article to provide, based on the contributions of Instructional Design (FILATRO, 2004, 2008, 2023; KENSKI, 2015), a reflection on a concrete experience of designing a virtual learning environment within the context of the elective course "Technologies and Language Teaching" offered in the Language Studies program at the University of São Paulo (USP) in 2021. The analysis of the creation of the room on the Moodle/USP Platform highlights different elements of the institutional dimension and the didactic-technological dimension that characterize the teaching-learning situation under focus.

KEYWORDS: Instructional design. Online teaching-learning. Teacher training. Technologies.

RESUMO: *O campo de atuação de professores de línguas em contextos on-line de ensino-aprendizagem tem se multiplicado nos últimos anos e colocado para eles a tarefa de concepção de salas virtuais, em suas instituições de ensino. A criação dessas salas tem sido realizada de forma pragmática, pela utilização dos recursos disponíveis sem, no entanto, possibilitar ao professor uma reflexão que problematize suas escolhas e os passos metodológicos que elas implicam. O objetivo deste artigo é trazer, a partir das contribuições do Design instrucional (FILATRO, 2004, 2008, 2023; KENSKI, 2015), uma reflexão sobre uma experiência concreta de design de um ambiente virtual de aprendizagem, no contexto da disciplina optativa "Tecnologias e Ensino de Línguas", oferecida no Curso de Letras da USP, em 2021. A análise da criação da sala na Plataforma Moodle/USP coloca em evidência diferentes elementos da dimensão institucional e da dimensão didático-tecnológica que caracterizam a situação de ensino-aprendizagem em foco.*

PALAVRAS-CHAVE: *Design instrucional. Ensino-aprendizagem online. Formação de professores. Tecnologias.*

RESUMEN: *El campo de actuación de profesores de idiomas en contextos de enseñanza-aprendizaje en línea ha proliferado en los últimos años, lo que los ha llevado a la tarea de diseñar aulas virtuales dentro de sus instituciones educativas. La creación de estas salas virtuales se ha llevado a cabo de manera pragmática, utilizando los recursos disponibles sin permitir, sin embargo, que el profesor reflexione sobre las decisiones tomadas y los pasos metodológicos que implican. El objetivo de este artículo es proporcionar, basándose en las contribuciones del Diseño Instruccional (FILATRO, 2004, 2008, 2023; KENSKI, 2015), una reflexión sobre una experiencia concreta de diseño de un ambiente virtual de aprendizaje en el contexto del curso electivo "Tecnologías y Enseñanza de Idiomas", ofrecido en el programa de Letras de la Universidad de São Paulo (USP) en 2021. El análisis de la creación del aula en la Plataforma Moodle/USP destaca diferentes elementos de la dimensión institucional y la dimensión didáctico-tecnológica que caracterizan la situación de enseñanza-aprendizaje bajo estudio.*

PALABRAS CLAVE: *Design instruccional. Enseñanza-aprendizaje en línea. Formación de profesores. Tecnologías.*

Introduction

In recent years, the use of online platforms in various institutional contexts of social life has been increasingly prevalent in our daily lives. With the advancement of technology, companies and institutions from various fields create virtual environments with diverse objectives, such as establishing channels of information and communication among employees, storing data, recording meetings, or organizing interactive or non-interactive rooms that explore available resources for ongoing planning. The choice of the environment and how it will be configured in terms of images, audio, video, and tools are directly related to the institutional objectives defined by those in charge, who, in many situations, hire specialized professionals to assist in this process of creating and configuring virtual spaces. Nowadays, there are professionals in the market with IT skills who work in this area.

In the educational context, these skills have become part of teachers' reflections, especially during the COVID-19 pandemic, a time when education professionals found themselves in front of screens, in online environments, but not necessarily in environments designed for teaching and learning. Although many of the teaching actions related to the creation and organization of virtual environments for teaching and learning have been carried out intuitively by teachers, they have contributed to the construction of new technological knowledge. However, from a pedagogical perspective, we still perceive a gap to be filled by initial and continuing teacher education programs, which help them align technological advances more effectively with new ways of teaching and learning.

In this context, among other aspects, the preparation of educators for the design of virtual learning environments gains importance, where instructional design (ID) can make contributions that positively impact the teacher's performance. From this idea, the following questions arise: *How can the principles of instructional design be applied to language teaching and learning contexts? What didactic, methodological, and technological references of instructional design can guide teacher education so that they have autonomy and can work in this area?*

The above questions motivate us to develop, in this article, a reflection on instructional design in its relation to language teaching and learning, supported by a theoretical basis, and taking as a starting point the experiences we have accumulated as trainers of future teachers, undergraduate students in Languages at the University of São Paulo.

To achieve this goal, firstly, we will briefly discuss the concept of instructional design and point out some guiding principles that can assist teachers in reflecting on the moment they create their virtual rooms/environments. Based on these theoretical-methodological principles, we will move on to a reflection on the configuration of the virtual room for the Technologies and Language Teaching discipline, which we offered at the University of São Paulo in 2021. Our aim is to establish a relationship between theory and practice, seeking to identify the elements that were considered in the design of the learning environment.

In the final considerations, we will present some initial ideas that may contribute to the implementation of critical-reflective training programs for undergraduate students in Languages, who need to prepare for the conception and organization of classrooms in teaching contexts that make use of virtual environments.

Instructional Design: Contextualization and Implications of the Concept in Education

The theme of instructional design has attracted the attention of researchers in the field of online education (Kenski, 2015; Filatro, 2004; 2008; 2023), due to its importance in the context of transformations brought about by Digital Information and Communication Technologies (DICT), especially in the face of the demand from different actors for the design of virtual environments.

When addressing the topic, experts are concerned with defining the concept of design in general and understanding the procedures to be followed by those tasked with creating and configuring virtual environments.

Initially, the word design might mean the "layout of a page, a slide, or a software screen" (Filatro, 2023, p. 16, our translation). When we associate the word with the term instructional (*instructional design*), the definition helps us understand how this field of knowledge has consolidated and begun to gather specialists in ID, as well as professionals from various other fields, due to the complexity of functions assigned to them, including

> Effectively communicate through visual, oral, or written means; Conduct a needs analysis to recommend appropriate solutions and strategies for the ID; Analyze the characteristics of existing and emerging technologies and their potential use; Design and plan instructional interventions; Organize programs (Filatro, 2023, p. 22-23, our translations).

It is therefore emphasized that the exercise of these functions presupposes a planning of actions that are not restricted to a technical-technological perspective for the design of a

product, but are based on choices that will determine the objectives to be achieved in various formations, in educational contexts or not. According to Filatro (2023, p. 23, our translations),

> These multidisciplinary competencies give us an idea that, to exercise ID, the professional needs to have a background based on different theoretical-practical bases. There is a strong educational foundation, with knowledge of learning theories, curricular organization, methodologies, assessment systems, human mediation, and teaching support, among others. But it is also necessary to have mastery of informational and communicational aspects, including a range of technologies and media used for educational purposes.

Discussions surrounding instructional design have also focused on understanding the emergence of the term. According to Kenski (2015, p. 24), this is not a recent concept, related to the creation of computers and the internet, as one might think, but dates back, probably, to the period of World War II, within the US Armed Forces.

Regarding the use of the concept in the field of Education, Kenski (2015) states that it has received influences and contributions from diverse theoretical-methodological conceptions based on principles proposed by the *theory of operant conditioning* linked to Skinner's behaviorist theory (1954-1956). In this perspective, the elaboration of activities in a virtual environment was organized from

> More rigid learning structures for the masses, with observable results, where teaching should be developed by distributing content in small steps, sequenced from simplest to most complex, with student participation according to their pace of learning and reinforcement for correct responses (Kenski, 2015, p. 25, our translation).

The author also establishes an association between instructional design and Bloom's taxonomy of learning objectives (1956), which sparked, in academic circles, "new discussions around issues related to the definition of instructional objectives" (Ferraz; Belhot, 2010, p. 423, our translation). Bloom's taxonomy identifies three specific domains of development: cognitive, affective, and psychomotor. According to Ferraz and Belhot (2010, p. 423, our translation),

> Although all three domains have been widely discussed and disseminated, (...), the cognitive domain is the best known and used. Many educators rely on the theoretical assumptions of this domain to define objectives, strategies, and assessment systems in their educational planning.

From 1960 onwards, according to Kenski (2015), the instructional design model began to be guided by the cognitive theories of Brunner, Gagné, and Ausubel, which led to

overcoming the behaviorist perspective adopted previously. The impact of this new model was seen in the greater emphasis on mental processes and individual differences of learners, as well as "extensive use of pre-tests and formative assessment procedures" (p. 25, our translation).

It was in the 1990s, with the dissemination of digital technologies and distance learning, that the term instructional design began to be linked to professionals responsible for the development of e-learning and Distance Education, again with a behaviorist bias in the elaboration of self-instructional e-learning projects (Kenski, 2015, p. 25).

From that moment to the present day, the importance of instructional design has been growing even more, due to the need to adapt didactic strategies, varied digital media, and resources to more interactive and collaborative teaching models, based on (socio)constructivist principles and other theories that value learner participation and the individual and collective construction of their knowledge (Kenski, 2015; Filatro, 2008; 2023).

In Kenski's view (2015, p. 13, our translation), the area of instructional design involves educational technology and its main objective is "the intention to plan solutions for the implementation of the teaching-learning process according to the context in which it should take place."

Instructional Design Applied to Teaching and Learning: Guiding Principles for Teachers

According to Filatro (2023), the relationship between the guiding principles of instructional design and design for teaching and learning is directly linked to understanding the parameters that define each of these processes, and, most importantly, to the elements that must be activated for the "success of the learning experience" (p. 29, our translation).

From this perspective, the author proposes questions related to the elements of instructional design that can guide the teacher's planning actions. As seen in Table 1, this planning involves describing and problematizing the teaching-learning situation so that the choices regarding the elements of instructional design are coherent:

6

Table 1 - Questions Related to the Elements of Instructional Design

Questões norteadoras	Elementos do DI
1. **Quais são as necessidades de aprendizagem dos alunos, suas experiências anteriores e seus valores relacionados ao que será aprendido?**	Caracterização do público-alvo e dos papéis de aprendizagem e apoio
2. **Que resultados em termos de mudanças de pensamento ou comportamento se espera atingir**	Definição dos objetivos de aprendizagem
3. **Que experiências de aprendizagem possibilitam o alcance desses objetivos?**	Escolha de métodos, estratégias e atividades de aprendizagem
4. **Como organizar essas experiências de modo engajador e eficiente?**	Design de unidades de estudo, sequências didáticas e/ou trilhas de aprendizagem
5. **Como verificar se os resultados foram ou estão sendo alcançados?**	Proposta de avaliação da aprendizagem

Source: Adapted from Filatro (2023, p. 30).

In our understanding, in the teacher's daily routine, each teaching-learning situation (with or without the support of virtual environments) must be mapped and characterized in order to enable the definition of didactic actions consistent with the context and the student's needs. In the field of instructional design, this mapping action of the teaching-learning situation can be understood in two dimensions: the institutional dimension and the didactic-technological dimension.

The **institutional** dimension concerns the description of the set of contextual, organizational, and structural elements that characterize a teaching-learning situation. This description aims to provide the creator/designer of the environment with information related to the teaching-learning context in which they are inserted and in which they will act.

This dimension includes gathering data on the institution's educational pedagogical project, the course(s) offered, the general objectives of teaching and learning, the institution's internet access structure, network speed, equipment, resources and tools, access to the institutional virtual environment, and computer laboratory, among others. Additionally, it is crucial for the teacher to know whether they have technical support staff.

However, the institutional dimension must be understood in relation to the **didactic-technological dimension**, as both provide the basis that helps guide the teacher's work. In our view, this second dimension is articulated with the elements that respond to the guiding questions indicated by Filatro (2023) (see Table 1) and correspond to the specific actions that the teacher needs to implement in order to meet the demands of the teaching-learning context.

In this context, the didactic-technological dimension includes a wide range of information that characterizes the student's learning needs and objectives, their experiences

with ICT, their internet connectivity conditions, and access to computers and other technological devices. Additionally, this dimension encompasses the teachers' actions related to defining the objectives and content of the teaching programs, which in turn should guide the selection of methods, strategies, and learning activities. On a more specific level, the teacher, in their role as an instructional designer, needs to organize and plan the learning sequences and anticipate forms of assessment that align with the initial objectives set.

Another point to be highlighted is that the choice of resources to be used by students in carrying out activities and the decision on how to organize them in the virtual environment necessarily go through the design conception on which the teacher (creator/designer) of the environment relies. This reflective process of the teacher is essential, considering that, so far, there is no specific (in the field of Education) training that prepares them for design work.

In the face of this gap, experts such as Kenski (2015) and Filatro (2004; 2008; 2023) seek to bridge the gap between the field of Education and the professional practice of ID, establishing pathways for the awareness of teachers who take on the role of configuring and organizing virtual learning environments.

Filatro (2023, p. 31) states that an ID project for Education should seek to: "1) identify an educational need; 2) design an educational solution that meets this need; 3) develop the designed solution; 4) implement the developed solution; 5) evaluate the implemented solution." These guidelines from the author refer us back to the guiding questions presented in Table 1, and it is from them that, in the next section, we engage in a reflective exercise aimed at evaluating the design of the virtual environment that hosted a technological training course taught to students of Languages at the University of São Paulo in 2021.

Reflective Exercise on the Design of the Virtual Classroom for the *Technology and Language Teaching Course*

The academic community at the University of São Paulo has extensive access to the Moodle Platform as pedagogical support for undergraduate, graduate, and extension courses. However, we have observed a restricted use of its resources, often confined to its potential as a repository of texts and a communication channel between students and teachers.

In previous works (Mayrink; Albuquerque-Costa, 2015; 2017), we highlighted other ways to explore the platform, focusing primarily on tools (forums, polls, dialogue, glossary,

etc.)[3], that promote collaboration and interaction among all users, both students and teachers. In addition to these well-known possibilities, USP's Moodle also integrates directly with external resources, such as H5P (HTML5 Package), and allows the teacher to bring activities developed with the support of collaborative work tools, such as Padlet and Flip, into their virtual classroom.

It was through the use of this platform that, in 2021, amidst the COVID-19 pandemic, we offered the *Technology and Language Teaching* course in the remote modality, with the support of Google Meet for synchronous classes. In order to reflect on instructional design in the context of language teaching and learning, we will take this course as the object of analysis here.

The elective course included 30 students from various specializations within the Language Program (Spanish, French, English, Italian, Portuguese, and Russian). Designed as a space for constructing knowledge about new ways of teaching and learning mediated by digital technologies, we established the following content in the program[4]:

1. The concept of technologies and their role in language teaching and learning in different contexts.

2. Digital Information and Communication Technologies (DICT) and Virtual Learning Environments: concept and exploration of possibilities.

3. A brief overview of theories and methodologies of language teaching and learning and their relationship with the use of digital tools and virtual learning environments.

4. The concepts of interaction, interactivity, collaboration, and cooperation in the use of technologies in the classroom and in virtual learning environments.

5. DICT in the development of different teaching modalities.

6. Analysis and development of activities using different digital tools in virtual learning environments.

With the aim of ensuring adequate development of the program's content in the Moodle virtual environment, we sought to establish a path that articulated theoretical reflections (related to reading texts addressing key concepts and central themes of the proposed program) and

---

[3] Our joint reflections on the area of language teaching with technologies also extend to collective academic spaces, such as the *Conference on Language Teaching and Learning in Virtual Environments* (JEALAV), an event we organize annually at the University of São Paulo.
[4] Complete program available at https://uspdigital.usp.br/jupiterweb.

practical activities (forum discussions and interactive rooms, collective elaboration of conceptual maps, creation of bulletin boards, games, among others), supported by different tools internal and external to the Moodle platform (discussion forums, surveys, tasks, *Padlet*, H5P, *Google Forms*, *Jamboard*, *Kahoot* and others).

The total workload of 30 hours was distributed over 15 weeks of the course (2 hours per week), and the two responsible professors, authors of this article, alternated in conducting the classes and themes. However, the design and conception of the virtual environment, as well as the selection of texts, digital resources, and the definition of class dynamics, were developed jointly, which contributed to ensuring the internal coherence of the proposed contents and activities.

Study Methodology

For this study, we followed the principles of qualitative research and, specifically, Content Analysis, which, according to Bardin (2016), involves the development of three phases of work: a) pre-analysis, b) material exploration, and c) treatment of results, inference, and interpretation.

In the developed process, the pre-analysis involved a detailed review of the virtual classroom of the discipline "*Technologies and Language Teaching*," to establish an initial dialogue between the configuration of the environment and the guiding principles of Instructional Design (ID) as outlined by Filatro (2023). From the exploration of all available material in the classroom, we analyzed the organizational configurations of the environment, the arrangement of content and activities, the selection of tools, etc., seeking to answer the guiding questions of ID (Table 1). In the final stage, we synthesized the results of our interpretations and developed tables that expand on Filatro's (2023) proposal by adding a new constituent element of ID: the teaching actions that must concretely respond to the guiding questions of the design.

In the next section, we present the results of our analysis, referencing the theoretical discussion initially presented.

Analyzing the design of the Technology and Language Teaching course

In our experience as teachers of French and Spanish in the Language courses at USP, we have used the Moodle platform as a space for building virtual learning classrooms, in which students are encouraged to mobilize the resources available to them for the development of different language practices, while also reflecting on the choices made for their configuration and organization.

The goal of promoting this critical look towards the virtual learning environment acquired a broader and deeper dimension in the context of the *Technology and Language Teaching* course, given the specificity of its proposal as a locus for the training of undergraduate students in Languages so that they can act, in the future, as teachers in different contexts of ICT use.

As mentioned, in order to observe the results of our performance as instructional designers, we revisited the guiding questions presented by Filatro (2023) in Table 1 and analyzed the design and organization of the virtual classroom for the course "*Technology and Language Teaching*".

The first guiding question presented by the author (*What are the learning needs of the students, their previous experiences, and their values related to what will be learned?*) is especially pertinent, as characterizing the target audience of a teaching-learning action is a determinant for establishing its objectives and contents.

In the context of the social isolation resulting from the COVID-19 pandemic, faced with the urgent need to transition from face-to-face to remote teaching, most language teachers began to adopt Moodle and/or Google Classroom platforms (for class organization), as well as Google Meet and/or Zoom (for synchronous classes and/or recording classes). However, the adaptation of teachers and students to the new dynamics of classes required time and, as discussed by Mayrink, Albuquerque-Costa, and Ferraz (2021), also demanded the search for complementary digital resources for classes and a reflective exercise on the new reality of conducting a teaching process entirely dependent on digital technologies. Similarly, students faced the challenge of learning and studying in a new (remote) mode, which alerted the institution to the need to offer them pedagogical and technical support.

Given this scenario, and drawing from our previous experience as teachers and researchers in the field of teaching and technologies, we understood, at that moment, the urgency of meeting a need of language students: to offer them a space for reflection on the

process of language teaching and learning mediated by technologies. In this way, we could link their learning experience (learning with technologies) with a reflection on their future teaching practice (teaching with technologies). From this perspective, we designed the program for the elective course "*Technology and Language Teaching*," thinking of a broad target audience: any student of Languages at USP.

Regarding the knowledge of the specific learning needs of this audience, their experiences, and knowledge already built on the subject of the course, we defined it as an activity to be developed in the first class, a group discussion around the questions: *What is technology? Technology and language teaching: what are the possible relationships?* After reflecting on these questions, the groups shared their answers with the whole class, publishing them on a mural elaborated with the Padlet[5] tool. Thus, we were able to validate the initial objectives proposed in the syllabus and course program.

Next, we revisit Table 1 and add to it a new column, in order to record our teaching action, in response to the first guiding question of instructional design proposed by Filatro (2023):

Table 2 - Teaching actions for mapping the teaching-learning situation

Questão norteadora	Elementos do DI	Ações das professoras na Disciplina *Tecnologia e Ensino de Línguas*
1. Quais são as necessidades de aprendizagem dos alunos, suas experiências anteriores e seus valores relacionados ao que será aprendido?	Caracterização do público-alvo e dos papéis de aprendizagem e apoio	1. Avaliação das demandas de formação em Letras no contexto da aprendizagem na modalidade remota. 2. Identificação do perfil do público-alvo. 3. Identificação dos pré-conhecimentos e experiências dos estudantes, em sua relação com as TDIC.

Source: Own elaboration; adapted from Filatro (2023, p. 30).

The second guiding question indicated by Filatro (2023) (*What results in terms of changes in thinking or behavior are expected to be achieved?*) is linked to the first, as it points to the goals expected to be achieved with the implementation of instructional design. In the case of the "Technology and Language Teaching" course, we can already identify some elements of ID in its syllabus, regarding the learning objectives:

---

[5] Available at: https://padlet.com/. Accessed on: 15 Jul. 2023.

> The course starts with the fundamental concepts of technology and virtual learning environments to establish relationships with theories, methodologies, and teaching modalities, as well as explore different possibilities of language teaching with the support of Digital Information and Communication Technologies (DICT).

In addition, the course program details the learning objectives, which can be understood as the expected actions of the teacher in order to develop a training experience focused on the critical use of technologies in language teaching and learning. The objectives of the course were as follows:

1. Reflect on the concept of technologies and their role in language teaching and learning in different contexts.

2. Discuss the concept of Digital Information and Communication Technologies (DICT) and Virtual Learning Environments (AVA).

3. Reflect on the theories and methodologies that guide the creation and use of virtual learning environments.

4. Discuss the concepts of interaction, interactivity, collaboration, and cooperation in the use of technologies in the classroom and virtual learning environments.

5. Discuss teaching modalities and promote the development of activities using different digital tools in virtual learning environments.

It is essential to highlight that throughout the semester, the content related to these objectives was validated and adapted according to the specific interests and needs presented by the students. Thus, the course was collaboratively built and negotiated with the group, which allowed us to fulfill the objective of contributing to the development of a critical-reflexive perspective among students regarding the use of ICTs in their learning process and their future roles as language teachers. The table below outlines the actions implemented by the instructors to achieve the desired outcomes in terms of student development.

13

Table 3 - Teacher Actions for Defining Learning Objectives

Questão norteadora	Elementos do DI	Ações das professoras na Disciplina *Tecnologia e Ensino de Línguas*
2. Que resultados em termos de mudanças de pensamento ou comportamento se espera atingir?	Definição dos objetivos de aprendizagem	1. Desenvolvimento de uma reflexão crítica sobre o conceito de tecnologias e seu papel no ensino e aprendizagem de línguas. 2. Promoção de discussões sobre conceitos da área (TDIC, AVA, interação, interatividade, colaboração e cooperação) e sobre teorias e metodologias que orientam a criação e o uso dos ambientes virtuais de aprendizagem. 3. Apresentação e discussão das modalidades de ensino e desenvolvimento de atividades com o uso de diferentes ferramentas digitais em AVA.

Source: Author's elaboration; adapted from Filatro (2023, p. 30).

Following the identification of students' profiles and the definition of learning objectives, it is necessary to establish the theoretical and methodological guidelines for the teaching and learning process under construction (Guiding Question 3: What learning experiences enable the achievement of these objectives? (Filatro, 2023). Therefore, it is about designing learning strategies and activities to promote students' formation.

For the subject *Technologies and Language Teaching*, it was necessary to define a guiding thread that aligned theories and practical procedures in a coherent way, in order to enable students to have an experience that would trigger a critical stance in relation to the use of technologies as language learners and also as future teachers who will be able to work in different contexts (in-person, distance or hybrid).

Thus, we decided to adopt the perspective of flipped classroom teaching, an active learning methodology in which tasks that traditionally occurred inside the classroom now take place outside it, and vice versa. As Mattar (2017) explains, in this teaching modality, students access the contents before coming to class, and when there, together with the teacher and peers, they ask questions and engage in practical activities. Following this dynamic, we guided the students to read theoretical texts before classes and proposed some tasks for them to explore in the next meeting. The figure below illustrates this way of working:

Figure 1 - Example of activity in the flipped classroom perspective

Para fazer antes da aula

Leitura dos textos abaixo

1) LEFFA, Vilson J.; DUARTE, G. B.; ALDA, L. S. A sala de aula invertida: o que é e como se faz. In: JORDÃO, Clarissa Menezes. (Org.) A linguística aplicada no brasil: rumos e passagens. 1ed.Campinas: Pontes Editores, 2016, v. 1, p. 365-386.

2) VALENTE, José. Armando. Blended learning e as mudanças no ensino superior: a proposta da sala de aula invertida. Educar em Revista, Curitiba, Brasil, Edição Especial n. 4/2014, p. 79-97. Editora UFPR. (pdf abaixo)

A partir das aulas sobre metodologias ativas e da leitura dos textos acima, em grupos de 3 alunos, vocês devem apresentar um ppt com:

1- Aspectos teóricos sobre o que são metodologias ativas

2- Do ponto de vista de vocês, quais os princípios que devem orientar as ações do professor - podem dar um exemplo e formular questões problematizando a modalidade em relação aos diferentes contextos

Source: Author's teaching material[6].

As indicated in the previous image, reading the texts was recommended to the students as support for preparing a presentation on the concept of active methodologies, accompanied by a problematization of their implementation in different contexts. This working strategy promoted the development of authentic learning experiences for the construction of students' knowledge, as they discussed the theory while applying it in practice.

Regarding the choice of learning activities, we prioritized those that could stimulate reflective thinking and collaborative work. This was based on a socio-interactionist view of teaching and learning, grounded in the joint construction of knowledge (Vygotsky, 1930/1998; 1934/1999).

The proposed tasks always relied on the support of some digital tool or resource, which was made possible by the course being offered in remote mode. Furthermore, as we mentioned, the proposed activities aimed to mirror teaching practices that students may develop in the future, which constituted a perspective of work based on inverted symmetry, a concept recovered by Barros and Brighenti (2004) to refer to the critical relationship between theory and practice established in the development of actions experienced during a teacher's training and what is expected of them as professionals. As the authors state, "the teacher should experience, throughout their entire training process, attitudes, didactic models, modes of organization that may interfere in their future pedagogical practice" (Barros; Brighenti, 2004, p. 136, our translation).

An example of this action corresponds to a task in which students should: 1) select an application/tool that could facilitate interaction in foreign language classes; 2) think about the

---

[6] Available at https://edisciplinas.usp.br/course.

types of activities that can be proposed with this application/tool and the criteria used for their selection; 3) record the selection criteria in a collective Google document, sharing it with all participants.

Na sequência, como trabalho de avaliação final, tiveram, ainda, que criar uma atividade para o ensino ou prática de algum componente linguístico, ou cultural com o uso de uma ferramenta digital. O quadro a seguir sintetiza as ações que desenvolvemos no processo de definição da metodologia de ensino e tipos de atividades a serem propostas ao longo do curso:

Table 4 - Teacher Actions for Defining Teaching Methods and Learning Activities

Questão norteadora	Elementos do DI	Ações das professoras na Disciplina *Tecnologia e Ensino de Línguas*
3. Que experiências de aprendizagem possibilitam o alcance desses objetivos?	Escolha de métodos, estratégias e atividades de aprendizagem	1. Aplicação de procedimentos da sala de aula invertida. 2. Aplicação do princípio da simetria invertida. 3. Desenvolvimento de atividades que favorecessem a reflexão, colaboração e construção conjunta de conhecimentos. 4. Desenvolvimento de atividades com o uso de recursos digitais.

Source: Author's elaboration; adapted from Filatro (2023, p. 30).

Moving on to the fourth guiding question proposed by Filatro (2023) (*How to organize these experiences in an engaging and efficient way?*), we take another step towards understanding how the design of the virtual classroom was conceived, from the perspective of its organization. For illustrative purposes, we start with the following figure to analyze how we programmed the arrangement of content in the virtual classroom.

Figure 2 - Space of Lesson 1 in the virtual environment of the course
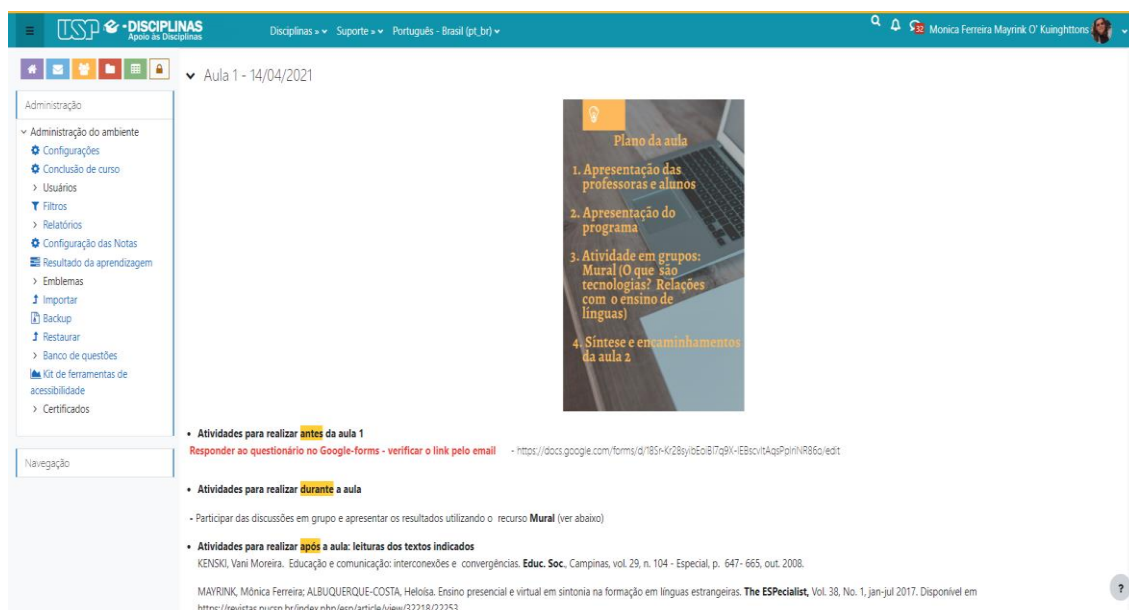
Source: Author's teaching material[7].

The first aspect of commenting on concerns the decision to configure the Moodle room into weeks[8], with the identification of the lesson number and the date it would be delivered. In this way, we aimed to outline, for the students, a path that highlighted the learning journey they were undertaking. With this mode of organization, the student always has in front of them the content already covered and the activities previously completed, as well as what is proposed for the lesson of the week[9], allowing them to take a retrospective look at the process and prepare for the new learning experience ahead.

Also, from this perspective, we chose not to make the content and activities planned for future weeks available. This strategy was chosen to ensure: a) flexibility regarding the organization and arrangement of the content for subsequent lessons, considering the need to adapt them based on the interests and demands of the group; b) greater clarity in guiding the workflow, thus avoiding any confusion regarding the objectives of the weekly schedule; c) an element of surprise in the schedule, so that activities and content were always motivating instruments for new discussions.

Another aspect to comment on, from the previous image, corresponds to our decision to always indicate, in a concise manner, the planned path for the lesson, with the presentation of

---

[7] Available at https://edisciplinas.usp.br/course.

[8] The Moodle platform offers different configuration possibilities: in weeks, tabs, blocks, topics and others.

[9] In addition, we made a file available to students with a recording of the week's class.

a clear and objective work plan. Along with this information, we detailed the tasks to be performed before, during, and after the lesson.

All of these procedures were crucial for constructing a learning path, thanks to the platform's good integration with the dynamics developed in the synchronous classes via Google Meet. In these meetings, the group revisited the readings done individually and the asynchronous interactive activities made possible by Moodle tools or others incorporated into the platform (discussion forums, joint preparation of texts in Google documents, posting of group discussions on Padlet boards, among others).

Returning to the previous analysis, we can then summarize the actions developed by the teachers within the design defined for the virtual classroom:

Table 5 - Teacher Actions for Organizing the Virtual Learning Environment

Questão norteadora	Elementos do DI	Ações das professoras na Disciplina *Tecnologia e Ensino de Línguas*
4. Como organizar essas experiências de modo engajador e eficiente?	Design de unidades de estudo, sequências didáticas e/ou trilhas de aprendizagem	1. Organização do AVA em semanas/dias de aulas. 2. Disponibilização do plano da aula. 3. Definição da metodologia Sala de aula invertida; indicação de tarefas para antes, durante e após a aula. 4. Disponibilização de textos teóricos.

Source: Author's elaboration; adapted from Filatro (2023, p.30).

The fifth guiding question pointed out by Filatro (2023) (*How to verify if the results have been or are being achieved?*) is centered on the decisions to be made for the evaluation of the learning process. Regarding the Technology and Language Teaching discipline, from a design perspective, we sought to ensure that the activities carried out by the students throughout the semester were recorded on the Moodle platform. This allowed us to work from a formative assessment perspective (André, 1996), as we were able to monitor the student's learning process throughout the course by observing their participation, engagement in delivering tasks, and the quality of the activities carried out.

Additionally, we developed a proposal for a specific assessment to be carried out in pairs or small groups at the end of the course. Our intention was for the students to revisit the

content covered and maintain coherence with our socio-interactionist teaching-learning vision based on the joint construction of knowledge (Vygotsky, 1930/1998; 1934/1999) to perform a collaborative task that would give meaning to the reflections promoted throughout the semester. The following image presents the assessment proposal developed:

Figure 3 - Guidelines for the Final Work of the Discipline

Proposta de trabalho final: elaborar uma atividade utilizando uma ferramenta digital/aplicativo de sua escolha (veja a lista com algumas sugestões).

Modalidade de trabalho: individual ou em duplas.

Importante: Ao final da tarefa, enviar às professoras o seguinte quadro com o registro de seu processo de elaboração da atividade

---

Ficha de registro da elaboração da atividade

Identificação inicial:

Membros do grupo: _____
Aplicativo/ferramenta escolhida: _____
Link de acesso à atividade (se houver): _____
Motivo da escolha do aplicativo/ferramenta: _____
Descrição do objetivo da atividade elaborada: _____
Conteúdo a ser trabalhado: _____
Perfil do aluno ao qual se destina: _____
Detalhamento das diferentes etapas da atividade: _____
Modalidade de participação proposta (individual, coletiva, colaborativa): _____
Papel do professor na execução da atividade: _____
Papel do aluno na execução da atividade: _____

Observações sobre o aplicativo/ferramenta (perspectiva do elaborador)

Facilidade/dificuldade na elaboração da atividade:
_____
Adequação aos objetivos propostos para a atividade:
_____
Vantagens no seu uso:
_____
Limitações encontradas:
_____
Potencial inovador do aplicativo/ferramenta:
_____

Source: Own educational material.

The proposed learning assessment, of an eminently practical nature, required students to develop an activity for teaching or practicing some linguistic or cultural component using a digital tool, while also reflecting on this process. To make this possible, it was necessary to revisit the theoretical discussions presented in classes and the readings. In this process, students access to the entire set of activities conducted throughout the semester via the Moodle virtual classroom was fundamental.

Another critical component of the assessment process pertains to the student's responses to a final course evaluation questionnaire, which allowed us to understand the student's perspectives regarding how the entire process was conducted. In Table 6, we revisit this last guiding question from Filatro (2023) and summarize our actions regarding the students' assessment process.

Table 6 - Teacher Actions for Designing Evaluation Proposals

Questão norteadora	Elementos do DI	Ações das professoras na Disciplina *Tecnologia e Ensino de Línguas*
5. Como verificar se os resultados foram ou estão sendo alcançados?	Proposta de avaliação da aprendizagem	1. Elaboração de atividades semanais individuais e coletivas, com o uso de diferentes recursos digitais. 2. Preparação de atividade final em duplas ou grupos. 3. Elaboração de questionário avaliativo da disciplina.

Source: Own elaboration; adapted from Filatro (2023, p. 30).

Finally, we emphasize that the reflective exercise conducted here is essential for the teacher to become aware of the various phases that make up the ID, and to evaluate the consistency of their decisions regarding the institutional dimension and the didactic-technological dimension that characterize their teaching-learning context.

Final considerations

In this article, we aim to reflect on *instructional design* in its relation to language teaching and learning, taking as a starting point some guiding questions presented by Filatro (2023), and applying them as guiding threads for the analysis of a previous teaching experience, in which we assumed the role of an instructional designer (DI) by being responsible for the comprehensive development of the virtual environment of the course. As seen, the relationships we established between instructional design and the specific context of creating virtual learning environments were not predetermined. Therefore, we took on the challenge of conducting a pre-analysis of the virtual classroom, which we defined as our object of study, and developing a critical reflection that allowed us to find possible connections between these two areas.

Upon concluding the analysis, we revisit the initial question that motivated our reflection (*How can ID principles be applied to language teaching and learning contexts?*), we observe the importance of the teacher, in their capacity as an ID, organizing their work into five

phases, which include: 1) identifying the particularities of the learning context; 2) establishing learning objectives; 3) defining the method and activities; 4) organizing the virtual environment; and 5) designing evaluation proposals.

Although these elements may already be known to experienced teachers, in the context of initial training, it is essential that they be presented and discussed from a theoretical-practical perspective that engages undergraduate language students in a reflective exercise that can extend to their future professional practice.

In this regard, we also revisit the second motivating question of our discussion: *What instructional design didactic, methodological, and technological references can guide teacher education to enable them to have autonomy and work in this area?* The answer may focus on the two structuring dimensions that we defined in this text as a starting point for instructional design: the institutional and the didactic-technological. We believe that it is in the relationship between these two dimensions that the teacher should lay the groundwork for the design of technology-mediated courses.

Given the particularities of different teaching and learning contexts, initial and continuing education programs should provide opportunities for teachers to develop a critical-reflexive and, consequently, autonomous stance. This will allow them to continuously build and revise the didactic, methodological, and technological knowledge necessary for the design of virtual environments/classrooms. As demonstrated in the article, this endeavor involves a series of steps, which are intrinsically linked to the detailed characterization of each teaching and learning situation. The framework outlined by the guiding questions presented by Filatro (2023) can be considered a valuable starting point for this process.

Furthermore, it is essential to emphasize that it is crucial to address this theme transversally across disciplines in the context of Undergraduate Language Programs. At the same time, it is important to create space in curriculum reform projects for reflection on the introduction of specific programs in this area, which can integrate the training of future teachers.

REFERENCES

ANDRÉ, M. E. D. A. Avaliação escolar: Além da meritocracia e do fracasso. **Cadernos de Pesquisa**, São Paulo: Fundação Carlos Chagas, n. 99, p. 16-20, 1996.

BARDIN, L. **Análise de conteúdo** / Laurence Bardin; tradução Luís Antero Reto, Augusto Pinheiro. São Paulo: Edições 70, 2016.

BARROS, D. M. V.; BRIGHENTI, M. J. Lourenção. Tecnologias da informação e comunicação & formação de professores: tecendo algumas redes de conexão. *In*: RIVERO, C. M. da L.; GALLO, S. (org.). **A formação de professores na sociedade do conhecimento**. EDUSC, 2004. p. 125-144.

BLOOM, B. **Taxonomy of educational objectives**. New York: David Mckay, 1956. 262 p.

FERRAZ, A. P. do C. M.; BELHOT, R. Vairo. Taxonomia de Bloom: revisão teórica e apresentação das adequações do instrumento para definição de objetivos instrucionais. **Gestão & Produção**, São Carlos, v. 17, n. 2, p. 421-431, 2010. Available at: https://www.scielo.br/j/gp/a/bRkFgcJqbGCDp3HjQqFdqBm/?format=pdf&lang=pt. Access in: 10 Jan. 2024.

FILATRO, A. **Design instrucional contextualizado**: educação e tecnologia. São Paulo, SP: SENAC, 2004.

FILATRO, A. **Design instrucional na prática**. São Paulo, SP: Editora Pearson universidades, 2008.

FILATRO, A. **Design instrucional para professores**. São Paulo, SP: SENAC, 2023.

KENSKI, V. (org.) **Design instrucional para cursos on-line**. São Paulo, SP: SENAC, 2015.

MATTAR, J. **Metodologias ativas para a educação presencial, blended e a distância**. São Paulo, SP: Artesanato Educacional, 2017.

MAYRINK, M. F.; ALBUQUERQUE-COSTA, H. A extensão da sala presencial para o Moodle: espaço de aprendizagem, reflexão e pesquisa nos cursos de Letras Francês e Espanhol da USP. *In*: SILVA, K. A.; MASTRELLA-DE-ANDRADE, M. R.; PEREIRA FILHO, C. A. (org.). **A formação de professores de línguas**: políticas, projetos e parcerias. 1ed. Campinas, SP: Pontes, 2015. v. 1, p. 215-232.

MAYRINK, M. F.; ALBUQUERQUE-COSTA, H. Caminhos investigativos na articulação entre ensino de línguas e virtualidade: reflexões para a elaboração de programas de formação de professores. *In*: EL KADRI, M. S.; ORTENZI, D. I. G.; RAMOS, S. G. M. (org.). **Tecnologias digitais no ensino de línguas e na formação de professores**: reorganizando sistemas educacionais. 1. ed. Campinas, SP: Pontes, 2017. v. 1, p. 151-168.

MAYRINK, M. F.; ALBUQUERQUE-COSTA, H.; FERRAZ, D. Remote language teaching in the pandemic context at the University of São Paulo, Brazil. The world universities' response to COVID-19: remote online language teaching. *In*: RADIC, N.; ATABEKOVA, A.;

FREDDI, M.; SCHMIED, J. (org.). **Research-publishing.net**. Voillans, França: Research-publishing.net, 2021. v. 1, p. 125-137.

VYGOTSKY, L. S. **A formação social da mente.** São Paulo, SP: Martins Fontes, 1930/1998.

VYGOTSKY, L. S. **Pensamento e Linguagem**. São Paulo, SP: Martins Fontes, 1934/1999.

CRediT Author Statement

Acknowledgements: Not applicable.

Funding: Not applicable.

Conflicts of interest: There are no conflicts of interest.

Ethical approval: Not applicable, as the reflection was based on the authors' own didactic production.

Data and material availability: Not applicable.

Author's contributions: The authors were responsible for the course, the teaching program, the activities developed, and the evaluation of the course analyzed in this article. For the writing of the text, they worked together, based on the outlined objectives, in the theoretical-methodological discussion and data analysis.

Processing and editing: Editora Ibero-Americana de Educação.
Proofreading, formatting, normalization and translation.