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Flipped Learning (flipped classroom): concept, proposal, and (re)organization of teaching times and spaces[1]

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Abstract

In the context of emerging pedagogies, Flipped Learning – FL (or Flipped Classroom) is understood as a reconfiguration in organizing, mediating, and conducting pedagogical work in education. Through a literature review and documentary research, this paper aims to reflect on FL concept, proposal, and the (re)organization of teaching times and spaces. Thus, its planning is discussed, contemplating three pedagogical moments that represent, respectively, before, during, and after the lesson or meeting. Furthermore, the study reflects upon aspects to its implementation, as well as the preparation and orientation of students regarding new space-temporal perspectives of teaching-learning and the student role in favor of more active-participatory, critical, creative, contextualized, and meaningful experiences. In this way, elements are discussed to consider FL as a pedagogical and innovative alternative and to support its implementation in the teaching process.

Keywords: Flipped classroom. Emerging pedagogies. Innovation. Pedagogical mediation.

Aprendizagem invertida (sala de aula invertida): conceito, proposta e (re)organização de tempos e espaços de ensino

Resumo

Em um contexto de pedagogias emergentes, a Aprendizagem Invertida – AInv (ou Sala de Aula Invertida) é compreendida como uma reconfiguração no modo de organizar, mediar e conduzir o trabalho pedagógico. A partir de uma revisão de literatura e pesquisa documental, traz-se o objetivo de refletir

sobre seu conceito, proposta e forma de (re)organização de tempos e espaços de ensino. Discute-se seu planejamento nos três momentos pedagógicos, que representam, respectivamente, o antes, o durante e o após a aula ou encontro. Ademais, reflete-se sobre aspectos para sua implementação, bem como sobre o preparo e a ambientação dos estudantes quanto às novas perspectivas espaçotemporais de ensino-aprendizagem e ao papel discente em prol de experiências mais (particip)ativas, críticas, criativas, contextualizadas e significativas. Desse modo, discutem-se elementos para pensar a AInv como alternativa pedagógica e inovativa, além de embasar sua implementação no processo de ensino.

Palavras-chave: Aula invertida. Pedagogias emergentes. Inovação. Mediação pedagógica.

Aprendizage Invertido (**clase invertida**): **concepto**, **propuesta y** (**re**)**organización de los tiempos y espacios de enseñanza**

Resumen

En un contexto de pedagogías emergentes el Aprendizaje Invertido – AInv (o Aula Invertida) se entiende como una reconfiguración en la forma de organizar, mediar y conducir el trabajo pedagógico. A partir de una revisión de literatura e investigación documental, el objetivo es reflexionar sobre su concepto, propuesta y la forma de (re)organización de los tiempos y espacios de enseñanza. Se discute su planificación en los tres momentos pedagógicos que representan, respectivamente, antes, durante y después de la lección o encuentro. Además, se reflexiona sobre aspectos para su implementación, así como la preparación y orientación de los estudiantes respecto a las nuevas perspectivas espaciotemporales de enseñanza-aprendizaje y el papel activo del estudiante en favor de experiencias más (particip)activas, críticas, creativas, contextualizadas y significativas. De esta manera, se discuten elementos para pensar el AInv como una alternativa pedagógica e innovadora, además de fundamentar su implementación en el proceso de enseñanza.

Palabras clave: Clase invertida. Pedagogías emergentes. Innovación. Mediación pedagógica.

Introduction

With disruptions, transformations, and new educational demands, Flipped Learning (FL) has been built and developed over the last few years and is a relatively new concept in Brazil. This proposal has gradually been identified as an alternative and pedagogical innovation based on careful planning and mediation processes based on the teacher's pedagogical intentions.

FL developed from concepts such as *Peer Instruction* (Mazur, 1997), *Classroom Flip* (Baker, 2000), and *Inverted Classroom* (Lage; Platt; Treglia, 2000) and became popular through the Inverted Classroom - IC (Bergmann; Sams, 2012). As a basis for understanding this proposal to reconfigure teaching times and spaces, Talbert (2017) initially divides it into two moments: *1)* students have contact with new subject content outside the classroom, being able to interact with it at their own pace and carrying out tasks that do not require intensive guidance from a specialist, as higher-level cognitive tasks would require; *2)* classroom space and time become available for more complex activities. These benefit from peer interaction and closer guidance from a specialist, in this case, a teacher.

In the case of being a pedagogical innovation, FL may have gone through or is still going through its moment of "fad" and rise, also characterizing it as an emerging pedagogy. The concept of emerging pedagogies is understood as a counterpoint to the more traditional way of organizing the teaching process and proposes answers to contemporary challenges, presenting alternatives to meet today's complex and multidimensional processes (Rocha; Azzari, 2018).

Sometimes, there are still questions about the theoretical and epistemological foundation of FL, the consensus on its definition, and the conceptual bases that underpin each practice and research, among other points. Therefore, this article aims to provide reflections and contributions on this proposal to avoid its use and implementation merely as a fad or as a mere "pseudo-innovation" for a marketing *slogan* in the context of a neoliberal educational agenda. On the contrary, the concept may need more grounding and criticality. Thus, the discussions developed in this text aim to contribute to constructing a theoretical foundation for FL, guided by the objective of reflecting on its concept,

its proposal, and how it proposes the (re)organization of teaching times and spaces.

The research, derived from Oliveira (2020), takes a qualitative approach through a literature review and documentary research (Cervo; Bervian; Silva, 2007; Flick, 2009), which culminated in a theoretical essay on the subject, considering a context that demands teaching innovations and transformations in educational training processes.

To develop the proposed reflections, we begin with a brief contextualization of a period of paradigm shifts and emerging pedagogies to reflect on the concept of FL and contribute to the discussion of elements that can foster means for its planning and implementation as a pedagogical alternative and innovation. Thus, it is hoped that this research will contribute to the theoretical foundation of the FL and stimulate innovative pedagogical practices, promoting research into its implications for critical and emancipatory education in Brazil and Latin America.

A context of change, emerging pedagogies, and pseudo-innovations

Over the last few decades, society has undergone significant changes, generally driven by digital technological innovations, which are appearing at an ever-increasing speed and are influencing various aspects of social life in the economic, political, and cultural spheres, as well as the educational field and the professional practice of teaching (Kenski, 2013; Libâneo, 2011). These advances and revolutions in education have led to a rethinking of pedagogical practices and mediation processes. According to Sgoti and Mill (2020, p. 41), "[...] educational institutions have been metamorphosing to meet emerging demands, especially considering the establishment of the so-called digital culture or cyberculture".[2]

This educational metamorphosis has presented possibilities for remodeling actions by incorporating digital information and communication technologies (DICTs) into pedagogical practice. In this sense, "[...] the use of techno-digital innovations in education [...] has increased the need to understand the various formats of interactions that occur in mediated teaching

situations"[3] (Kenski, 2020, p. 66). Thus, at the same time as being influenced by such transformations, the current reality demands a sensitive, critical, and informed look at interactions and pedagogical and technological mediations in teaching and learning (Oliveira; Silva, 2022), raising the need for reflection to improve understanding of these processes.

Amid current needs, "alternative" and "innovative" proposals, methodologies, and techniques are also emerging to improve the teaching process and help teachers with mediation and the possibilities for pedagogical work amid cyberculture. However, "[...] whether for cultural, financial or other reasons, education in Brazil has found it difficult to meet the demands of the contemporary world, especially in terms of effective pedagogical innovation"[4] (Sgoti; Mill, 2020, p. 42). In addition, one could mention the context of crises, reforms, and counter-reforms plaguing Brazilian society from a neoliberal perspective, including education and its respective public policies.

In this context, there are also actions, research, and reflections aimed at substantiating, discussing, and stimulating other pedagogical initiatives that dialogue with the reality of the educational context critically and consciously. Some of these initiatives focus on better understanding some proposals for teaching innovations, leading to the rising of *emerging pedagogies*, which, according to Rocha and Azzari (2018), are understood as proposing responses to the challenges of contemporaneity, encompassing alternative ways of conceiving and practicing pedagogy. This is in opposition to conservative or traditional pedagogies, "[...] generally guided by reductionist thinking and thus marked by the ideas of universality, neutrality, homogenization, segmentation, linearity, and gradation"[5] (Rocha; Azzari, 2018, p. 492). Thus, the authors understand that emerging pedagogies are based on empowering students and strengthening their authorial potential. They are also guided by the principles of democratic diversity, favoring less authoritarian attitudes and relationships with greater collaboration and transformative potential. However, they point out that their innovative and transformative nature is often interpreted as a magical solution to teaching issues due to "[...] an 'over-expectation' of what they (or through them) are expected to achieve in education"[6] (Rocha; Azzari, 2018, p. 494).

Therefore, there is also concern about so-called "pseudo-innovations" in the field of education, which, by misrepresenting the notion of "innovation," become slogans for marketing purposes (Pacheco, 2019). In a similar vein, Mattar (2017) warns about the fads that arise in this field, which can harm education with their "new" methodologies, technologies, "innovations," etc. According to the author, these pedagogical fads often lack an adequate theoretical foundation, and because they are fads, they are fleeting. Despite this, there are positive aspects generated by fads, as well as pseudo-innovations, since there is a movement to consolidate research that seeks to "[...] build a body of theory, define concepts more precisely, exchange practices between teachers"[7] (Mattar, 2017, p. 20), among other points. The author believes that, once the fad has passed, there are theories and grounded practices that can contribute to these issues in education.

Although many of these proposals are under construction and are based on different world (and educational) visions, it is essential to work towards a foundation based on critical and emancipatory perspectives instead of neoliberal education. In this way, efforts such as the reflections promoted by Veiga and Viana (2021) are relevant, as they discuss *peer instruction*, broadening a view of *active methodology* to a *participatory*, collaborative, and problematizing *methodology* based on historical-critical pedagogy (Saviani, 2008). A similar movement also occurs in other discussions on didactics, techniques, and pedagogical experiences, organized and brought together by Veiga and Fernandes (2021). According to Libâneo (2021), with the challenge of mobilizing teaching work that is different from the proposals of the neoliberal agenda, teaching needs to

> [...] providing students with the cognitive and instrumental means to understand, position themselves, and deal with the challenges posed by contemporary reality. The introduction of this type of teaching involves tasks such as developing critical reason, i.e., the ability to think about reality and intervene in it, through solid cultural and scientific training; providing pedagogical-didactic means for mastering cognitive skills that lead to the development of theoretical-scientific thinking; strengthening students' subjectivity and helping to build their personal identity, while respecting social and cultural diversity and training for solidary and participatory citizenship (Libâneo, 2021, p. XIV).[8]

Given current demands and education in digital culture, Fernandes and Soares' (2021) perspective on the intensification of the search for different formats for the organization and development of teaching classes is corroborated. For the authors, this movement has been driven primarily by teachers committed to democratizing knowledge and are concerned about student learning concerning the demands of teaching and life in contemporary society.

Among fads and pseudo-innovations, the FL, derived from the IC and sometimes considered synonymous, is gaining ground in an attempt to reconfigure the "[...] traditional way of organizing and conducting the classroom"[9] (Fernandes; Soares, 2021, p. 158). As a contemporary movement, FL is based on a reorganization of times and spaces in the teaching process based on notions of hybrid education; strategies such as active-participatory methodologies[10-11-12] can be enhanced by adopting digital information and communication technologies (DICTs). Furthermore, its principles dialogue with current needs and demands, such as pedagogical flexibility, personalization of teaching, and use of hybrid, critical, meaningful, creative, and contextualized strategies. Concepts and reflections on FL are raised to discuss this topic.

Flipped learning: reflections and initial concepts

In the literature, especially in Brazil, FL (or IC) is seen from different perspectives, being presented as a teaching methodology (Bergmann; Sams, 2012), teaching modality (Valente, 2014), teaching-learning technique (Fernandes; Soares, 2021), hybrid teaching model (Christensen; Horn; Staker, 2013), active methodology (Mattar, 2017), as well as a pedagogical approach and/or instructional *design* method (FLN, 2014; Talbert, 2017). With the lack of consensus on its characterization, its transition into different categories and/or classifications is notable. However, we agree with Fernandes and Soares (2021) in understanding it as a teaching-learning technique that alters and/or reconfigures the way of organizing and conducting pedagogical work in alternative spatiotemporal terms to the traditional classroom format.

In general, FL derives from the advancement and improvement of the vision of other methodologies, whose basic idea is that the actions that are usually conducted in the classroom (attending class) are now carried out by the

student at home, and what is generally done at home ("homework") becomes an activity in the classroom (Bergmann; Sams, 2012). With the student having access to the content beforehand and preparing for the moment with the teacher, the class can become a "[...] place of active learning, where there are questions, discussions, and practical activities"[13] (Valente, 2018, p. 29).

As we know, the term "active learning" ends up being a redundancy (Valente; Almeida; Geraldini, 2017), but it is understood that by adopting FL, the classroom space is directed towards implementing methodologies that involve the student in more active experiences, through problem-solving, projects, group discussions and laboratories (Bergmann; Sams, 2012, 2014; Valente, 2014, 2018). Making it possible to break with perspectives of banking education (Freire, 2012), the aim is to create a reality of contextualized and meaningful learning (Ausubel, 2000; Moreira, 2011). In this context, active-participatory methodologies can enable students to learn at their own pace and with their own needs in mind, facilitating the creation of collective and collaborative spaces (Chaquime; Mill, 2018).

In addition, with new temporal and spatial perspectives, given the current technological moment, the FL incorporates principles related to hybrid education since it can be understood both by its convergence between online and face-to-face and by the enrichment of pedagogical possibilities from the interaction between pedagogical approaches and DICTs (Mill; Chaquime, 2017; Moreira; Monteiro, 2018). With this, FL can target benefits linked to personalization, pedagogical flexibility, and other aspects of hybrid education and using digital technologies in teaching.

In recent years, attempts have been made to improve the concept of FL, presented by the *Flipped Learning Network* - FLN as

> [...] a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter (FLN, 2014, n. p.).

In addition to developing a definition that characterized FL in terms of time, space, and activities, the FLN also discussed the four pillars of FLIP, with a

list of indicators to guide teachers in their implementation. Together, the pillars form the acronym FLIP (Figure 1).

Later, Talbert (2017) proposed a modification and expansion of the definition, presenting it as a pedagogical approach

> [...] in which *first contact* with *new concepts* moves from the group learning space to the *individual learning space* in the form of structured activity, and the resulting *group space* is transformed into a *dynamic, interactive learning environment* where the educator guides students as they apply concepts and engage creatively in the subject matter (Talbert, 2017, l. 765, our emphasis).

Figure 1 – Pillars of FLIP

Source: adapted from FLN (2014).

Once the student has been prepared through structured activities, the group learning environment (usually the classroom) is used for dynamic and interactive activities, applying concepts and student involvement. It should be noted that the class moment is not restricted to a single space but is understood as the meeting between teachers and students in real-time, either face-to-face or through digital means (web conferences, synchronous online meetings, etc.). This second moment is directly related to the space and time of group learning, involving the interaction of students with each other and their teachers.

Using different media formats (written, visual, digital, etc.), the student has access to new concepts and content at a time before the lesson and, as a consequence, the teacher has a time and a class/meeting environment geared towards group learning (in person and/or synchronously). In this way, teachers can direct their mediation process towards fostering more dynamic, interactive, participatory, and collaborative teaching, among other possibilities.

For Talbert (2017), it is essential to note that the lack of emphasis on structured activities throughout the individual learning space and the simple adoption of prior reading discussions do not guarantee an environment of more active-participatory learning experiences in class and, consequently, do not contemplate notions of FL. The author adds that it is not "natural" for the student to have the ability to deal with the content and pedagogical resources prior to the meeting, to know how to extract significant information, and to ask pertinent and good-quality questions. In this sense, a watchful eye is needed when structuring prior contact with the content, guiding students, and carrying out the process of pedagogical (and technological) mediation before, during, and after the lesson.

More recently, an update of the FL concept has been developed and presented as

> [...] a framework that enables educators *to reach every student*. The Flipped approach inverts the traditional classroom model by *introducing course concepts before class*, allowing educators to use class time to *guide each student through active, practical, innovative applications* of the course principles (AALAS, n.d., our emphasis).

As in Talbert's (2017) definition, personalization aspects are mentioned to include and reach all students, introduce concepts before the lesson, and promote active methodologies afterward. However, this highlights the need to take a critical look at the possibility of reaching all students by reconfiguring the lesson's structure through the teacher's pedagogical action. As mentioned, innovative aspects of the proposal should not be interpreted as "magic" formulas for dealing with specific challenges in teaching practice, thus avoiding overestimating FL's possible implications and results. In this way, thinking about the personalization of teaching is something that goes beyond

the teacher's actions, decisions, and pedagogical intentions since it is a process that depends on good institutional support, physical and technological structure, adequate support, the number of students per class/teacher, valuing teachers' work, a good working context, as well as time for preparation, continuing education, planning, etc. Without these conditions, it would not be easy to achieve personalization, and countless other challenges may be faced in promoting quality education for all.

Based on the above concepts, FL proposes to (re)organize and (re) structure processes, seeking to optimize teaching. To expand on the previous discussions, the structure of the FL is broken down into three central moments: 1) before the lesson (or meeting), 2) during the lesson (or meeting between students and teachers), and 3) after the lesson (or meeting).

Whether in a classroom or not, the first moment is related to the student's prior preparation, based on planned, structured activities and with the teacher's mediation, albeit asynchronously and at a distance. The second aims to work on more complex activities, using active-participatory methodologies to foster more contextualized and meaningful learning situations. The third moment, after the class, is related to experiences aimed at giving continuity to the teaching process as a way of proposing revisions and deepening, among other possibilities.

It can be seen that adopting FL as a teaching technique requires knowledge of the proposal, as well as the conditions for its implementation. In this way, it is possible to think about reorganizing and reconfiguring the different teaching times and spaces to plan and structure the implementation of an "inversion."

Stages, **structure**, **and organization for planning flipped learning as a pedagogical alternative**

Based on the literature, some ways exist to plan and implement FL and its pedagogical mediation process. Choosing to "invert" requires considering the characteristics of the proposal and how it can contribute to a particular course, subject, curricular component, or even a single lesson. For this reason, it is necessary to exercise caution in its planning and implementation.

Each course, discipline, and/or institution has particularities that must be considered when choosing FL and when looking at teachers, students, and others involved in the process. In this sense, presenting a single model or standard to guide the proposal would be utopian and unrealistic. However, based on publications on the subject, the following are topics, ideas, and suggestions to guide teachers and educational institutions in planning and pedagogical mediation when adhering to the concepts and principles of the FL.

To do this, some essential steps are considered:

- the overall planning and structuring of the "inversion" proposal;
- the planning of the different teaching moments;
- preparing and setting students for the FL experience.

As a basis for planning the inversion proposal, we must stress the importance of understanding FL, its peculiarities, and how it is organized. Refraining from discarding the notions based on the proposal can lead to superficial practices, less effective teaching processes, or more significant challenges than those already expected. Furthermore, there is the possibility that it will be practiced in a reductionist way, that it will only include "traces of inversions," or even that it will reinforce "fads," "pseudo-innovations," or educational practices with uncritical, mercantile bias and/or from a perspective that enhances the precariousness and overload of teaching work.

Understanding the FL, as well as its characteristics and specificities, the planning process and general structuring of the proposal must consider the objectives of the class, subject, and/or course that will be restructured (or "inverted"), as well as taking into account the context in which it is located and its target audience. Designing FL is a challenging task, and in this sense, it is essential to analyze the resources available to students and teachers, the time needed to plan, prepare, and implement the actions, the conditions for carrying out the proposal, and other aspects that may directly or indirectly influence it. Corroborating Freire (2011) and Moran (2018), it is necessary for conditions to exist for teachers to be able to carry out their teaching tasks. However, it is known that not all realities favor such paths.

The teacher's experience level and affinity with the FL can facilitate (or not) the pedagogical restructuring, design, and application of the strategies to

be developed. Therefore, opting for "small inversions" designed for one lesson or a set of lessons is possible for those just starting to plan the FL. Once you are more confident and comfortable implementing it over extended periods, you can design it over a few weeks, as a thematic unit, a whole subject, or even entire courses. Partial inversions can serve as a basis for evaluation and constant improvement of the proposal, as a pilot project that offers teachers and students a space for a gradual transition to new ways of teaching and learning without a drastic break from the format to which they are accustomed and adapted.

According to Bergmann and Sams (2014) and Talbert (2017), FL brings two learning moments and/or environments. However, here we advocate the suggestion of a planning process designed to achieve three distinct teaching-learning moments:

1. (primarily) individual (prior) learning;
2. group learning (as a priority) (class and/or meeting);
3. deepening and/or continuing learning (individually or in a group after the lesson or meeting).

The first moment, primarily or mainly individual learning, usually occurs before the class or the meeting between students and teachers. Aimed at the student's initial contact with the content to be developed (Talbert, 2017), it is designed so that the student takes their first steps in the learning process, guided by the teacher, through properly organized/structured resources and activities and following an appropriate sequence in didactic-pedagogical terms. To this end, the teacher can offer learning paths incorporating and combining various media (texts, videos, *podcasts*, infographics, mind maps, forums, etc.) and tasks.

Thus, for the student to prepare for the subsequent moment - of (primarily) group learning - to plan the moment of (primarily) individual learning, prior to the class or meeting, there are some relevant suggestions to be incorporated, which are independent of a specific sequence, as long as they are considered in the planning and pedagogical mediation (Figure 2).

Figure 2 – Suggestions for planning an individual learning moment prior to the lesson or meeting

Source: prepared by the authors.

We propose a structure with clear guidelines to guide the student through preparation, presenting trails, paths, and activities for exploring and appropriating media and content. There is a need to guarantee access for all, whether online or offline, and inclusion through accessible resources and media. It is also essential to use different languages, types of media, and different degrees of complexity to guarantee personalization and pedagogical

flexibility. There is also a proposal for spaces for sharing, dialog, and questions, as well as recognition of the need for prior preparation time to be part of the course load. Finally, the importance of constantly evaluating the entire cycle is reiterated to reflect on potential adaptations and improvements needed to the proposal.

It should be noted that more than simply making resources and content available, for example, in a virtual learning environment (VLE), is needed to make the teaching process effective. The teacher's role is fundamental to guaranteeing quality pedagogical and technological mediation to make the teaching practice effective.

In relation to the educational objectives and intentions, the materials and resources for the (primarily) individual learning moment also need to be made available well in advance, ensuring that the student has enough time to explore them, facilitating the organization of academic/student tasks and dialoguing with the reality of reconciling studies with other activities. It is essential to look at a reality in which many students accumulate study demands and other tasks, including domestic, professional, family, internships, etc. These aspects can lead to poor adherence to previous activities and repercussions that result in poor learning and academic performance (Oliveira; Silva, 2023). In this sense, it is vital to bear in mind the context in which the students find themselves and, in addition, it is suggested that the study time and activities of the individual learning moment be considered in the total workload of the subject and/or course, including before, during and after each class and/or meeting.

To deal with the possibility of low student adherence, the accumulation, and/or delay in studies and activities, among other points, there is a need for constant supervision by the teacher. This monitoring makes it possible to evaluate the teaching process, encourage students to learn individually, analyze the return rate of activities, and share tips, guidelines, and strategies so that they can access and follow the resources more effectively.

As with individual learning, there are many ways to develop group learning. This will depend on the proposed objectives, the content being worked on, the reality experienced by students and teachers, and the conditions in which teaching practice occurs. In this way, it is possible to think of FL from different strategies, with individual activities, in small, medium, or large

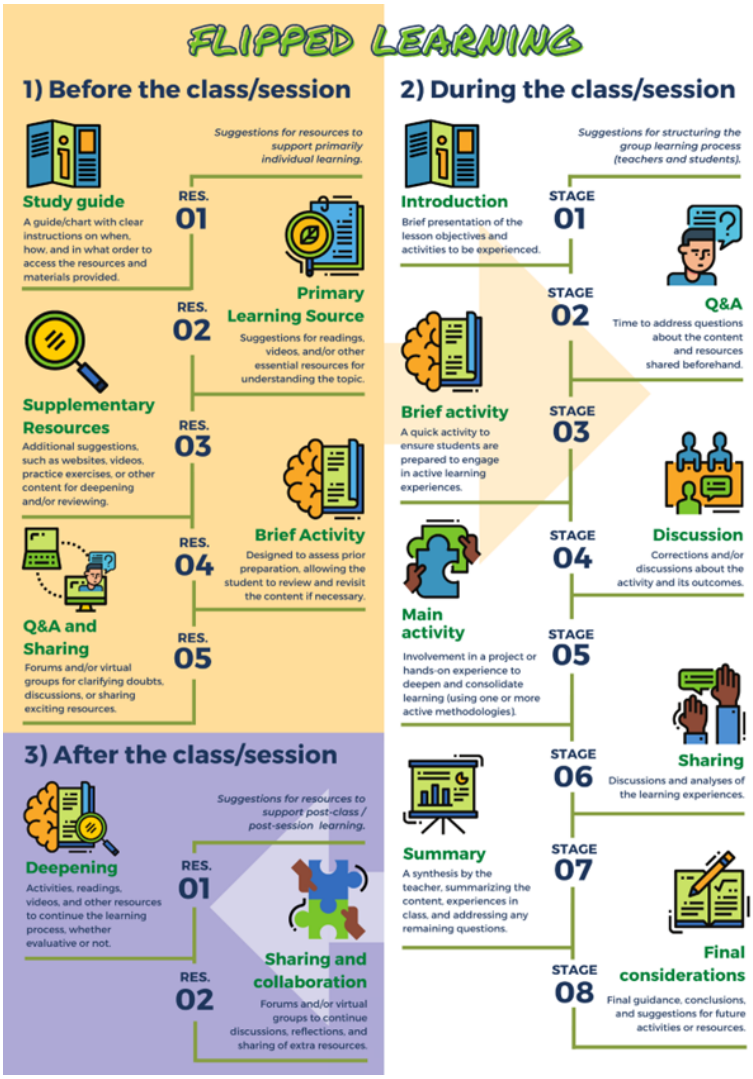
groups, with single or more active-participatory methodologies, in combination or not. In this sense, we reiterate the importance of constant

> [...] dialogue between pedagogical intentions and the selection of teaching methodologies, strategies, and techniques, using research, exhibitions, dramatizations, demonstrations, problem-based learning, projects, gamified strategies, etc., adapting them to the context, reality, and needs of the students (Oliveira; Silva, 2023, p. 4).[14]

Based on discussions and guiding documents (AALAS, n.d.; Oliveira, 2020; Bergmann; Sams, 2012, 2014; FLN, 2014; Mazur, 1997; Talbert, 2017), we suggest strategies that can make up a learning script for the group moment (Figure 3).

It is based on the idea of stages with initial questioning about the content and resources studied before the class or meeting; brief assessment activities as a way of checking the students' preparation for the meeting/class; involvement in a particular project or collaborative activities that promote more active, contextualized and meaningful learning through active-participatory methodologies; moments of sharing, discussion, and reflection, among others. At the end, there is a space for the teacher to summarize the content worked on, clarify any remaining doubts, and provide guidelines for further activities.

Figure 3 – Suggested script and resources for FL



Source: prepared by the authors.

Once the moment of (primarily) group learning is over, promoting a space where the student can continue the teaching-learning process is crucial. This third and final moment in the cycle can include assessment activities, extra materials, and tips, as well as spaces for discussion, collaboration, sharing, and collective construction. These resources can be organized into two

groups, one for in-depth study and the other for sharing and collaboration between teachers and students. However, the focus is on the quality of the activities, seeking to plan them to promote opportunities for progress in the process of learning the content developed. An excessive number of activities or the absence of a specific purpose can have the opposite effect, resulting in students being distanced from rich and meaningful experiences for their learning.

The learning moment after the class or meeting can be structured to take place through forums, email lists, LMS, or even through communication application channels and/or social networks such as Facebook, Telegram, or *WhatsApp*. Each of the platforms and/or tools selected for this purpose brings positive and negative aspects depending on the intentions set out for the teaching process. Of course, platforms designed or adapted for pedagogical purposes tend to offer better possibilities, as with Moodle, a possible VLE. On the other hand, communication applications and social networks can be more accessible tools for different reasons, offering an alternative in cases where it is difficult to use other tools or platforms.

Figure 3 shows that the different teaching and learning times and spaces are connected and complement each other. Each stage becomes fundamental to achieving the pedagogical objectives when choosing to incorporate FL as a proposal. These possibilities can help teachers in their planning process and mediating pedagogical practice, guiding their actions and attitudes so that teaching and learning occur.

In this sense, once the planning has been completed, students must understand every moment of the teaching-learning process (Oliveira; Silva, 2022; Talbert, 2017). To this end, the teacher can provide the students with an introduction, share expectations about accessing and interacting with the content, and offer them the means to explore the resources as effectively as possible. Guidance on task and time management and tips for studying in the context of digital culture can also be offered. This mediation can help the student acquire new habits, understand the proposal, and adopt a new attitude in the teaching process, mainly based on understanding a learning process with a view to experiences that are active-participatory, meaningful, creative, and contextualized.

Final considerations

Amid digital culture, FL proposes (re)configuring and (re)structuring the way teaching times and spaces are organized and conducted, consequently requiring specificities in pedagogical work and teacher mediation. The analyses and discussions developed in this article, understanding it in the light of emerging pedagogies, reveal the need for a critical-analytical perspective on contemporary educational practices to break with possible fads or pseudo-educational innovations. In this sense, it is crucial that, like other disruptive proposals, FL is not understood as a magical solution to educational issues and that criticism of traditionality in the organization of teaching times and spaces materializes inaccurate proposals based on teacher intentionality and practical actions aimed at pedagogical and technological mediation in a critical and emancipatory educational perspective.

Thus, we analyze and propose three pedagogical moments, respectively representing before, during, and after the class or meeting: 1) learning (primarily) individually; 2) learning (primarily) in groups; and 3) deepening and/or continuing learning (individually or in groups). In this sense, we discuss possible strategies that can contribute to planning the different ways of conceiving "inversion" experiences in the various teaching and mediation times and spaces.

In addition, we highlight essential stages for planning and implementing the FL, such as the teacher's understanding of the proposal to structure planning based on pedagogical intentions and prepare students for new teaching-learning perspectives. This is fundamental to deepening the critical analysis of the potential pitfalls that FL can present when planned superficially. In addition, it is essential to align expectations regarding a more active student role in the process, breaking with more traditional teaching perspectives and fostering active, critical, creative, contextualized, and meaningful experiences aligned with notions of hybrid education, pedagogical flexibility, personalization, active- participatory methodologies, ICT, among other possibilities during digital culture.

Finally, we aim to contribute to discussing elements that underpin the planning and implementation of FL as a pedagogical and innovative

alternative. Furthermore, we emphasize the need to investigate its implications for Brazilian and Latin American education, with a view to critical and emancipatory education.

Notes

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2. Quote translated by the translator.
3. Quote translated by the translator.
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5. Quote translated by the translator.
6. Quote translated by the translator.
7. Quote translated by the translator.
8. Quote translated by the translator.
9. Quote translated by the translator.
10. In the original in Portuguese *(particip)ativas* is a word play between the words *participativa*, which means participatory; and the word *ativas*, which means active.
11. The nomenclature of active methodologies (AM) and derivations (active learning, active learning methodologies, etc.), which are common in the FL/IC, vary in terms of the theoretical basis adopted. Regarding AM, we highlight the maturing of discussions that point to a participatory methodology (Araújo, 2017; Veiga; Viana, 2021), based on Historical-Critical Pedagogy (Saviani, 2008).
12. To encourage the maturing of the MAs in the reflections on the FL/IC, we have chosen to use the term active-participatory when referring to examples of MAs, while indicating not only the possibility but also the need to expand to a horizon of participatory methodologies, based on historical-critical pedagogy and as a counterpoint to neoliberal educational perspectives.
13. Quote translated by the translator.
14. Quote translated by the translator.

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