Teaching-Learning Patchwork Technique: Proposed Active Methodology Applied to Doctoral Education

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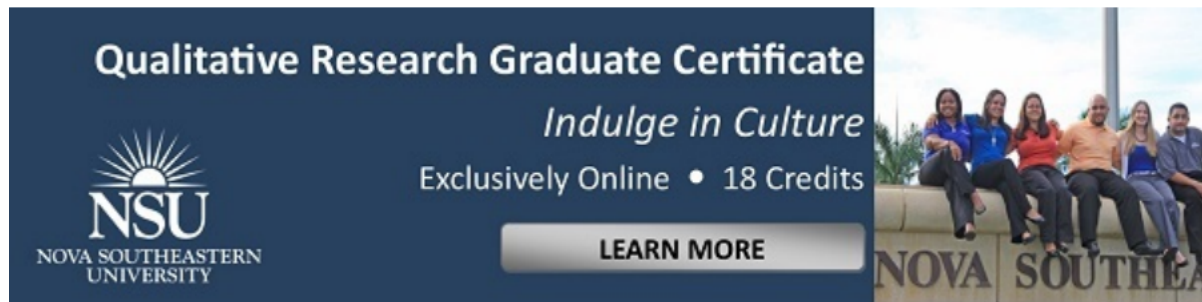
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Abstract

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Keywords

teaching-learning patchwork technique, active methodology, duoethnography, doctoral education

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Acknowledgements

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Proposed Active Methodology Applied to Doctoral Education

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The didactic-pedagogical innovation at the stricto sensu level can be the differential for a program to train qualified professionals for today's demands. Within this perspective, the study seeks to reflect on the application process and impacts of a teaching strategy based on the Teaching-Learning Patchwork Technique (TLPT) active methodology in a doctoral business administration course. Using duoethnography, the research was carried out with a teacher and two students, generating reflections of different visions about the same object, which provided a greater understanding of the phenomena experienced. The results support that TLPT promotes educational innovation from the promotion of teaching worked in small strategically selected parts, creating a creative, collaborative, and reflective environment. The research contributes to a reflection on educational policies regarding the stricto sensu graduate courses.

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Introduction

Technological advances and more interactive forms of teaching have demanded the use of effective methodologies to make the teaching-learning relationship viable. The notion of the student's role in the learning process gains strength in this context. The teacher increasingly acts as a mediator in an environment where information technologies and emerging strategies of active methodology are consolidated (Lee, 2020; Pereira & Silva, 2018).

Traditional teaching methods based on teacher-centered knowledge construction paradigms have been criticized for placing the student in the passive role of spectator of the training process, which does little to promote autonomy and critical reflection (Freire, 2009; Gargallo-López et al., 2017; Quinn Trank & Brink, 2020). At the same time, the advancement of the internet and greater access to technologies enabled the use of new approaches in which the teacher is the facilitator on the path of knowledge, and the student is encouraged to take an active role in the educational process (Kukulska-Hulme, 2012).

Historically, doctoral education aims to train professionals who can meet the demands of society (De Meyer, 2013; Radda & Mandernach, 2012), to promote new scientific research agendas (Malfroy, 2005; Yang et al., 2019), or to act professionally in the context of the transformations fostered by the knowledge economy, which relies heavily on the production, distribution, and use of knowledge and information to create wealth and economic growth. In a knowledge economy, the main sources of economic growth and development are not just natural resources or physical labor, but people's skills, knowledge, and creativity (Banerjee & Morley, 2012). Methodologically, personalized or small-group teaching is adopted, which allows for intense interaction between teachers and students. In this format, individual

knowledge affects and is affected by collective meanings. Shared thinking becomes a stimulus to the construction of knowledge itself. It is up to the teacher to encourage active actions to exchange knowledge (Bispo, 2017).

Active teaching methodologies gain increased visibility as a proposal to break traditional paradigms and aim to encourage students to take the lead in building their knowledge (Castilla-Polo et al., 2022). The teacher facilitates this process (Bacich & Moran, 2017). However, despite the importance of the theme in the educational context, debates on teaching methodologies – particularly active teaching methodologies in *stricto sensu*[*] – are still incipient (Oswald et al., 2020). In the search for knowledge and for discussing teaching methodologies in doctoral education, we seek to answer: how can the pedagogical proposal of an active Teaching-Learning Patchwork Technique (TLPT) methodology contribute as a teaching strategy in doctoral programs? Specifically, we studied the application process and impacts of a teaching strategy based on the TLPT active methodology in a doctoral business administration course at a Brazilian federal university.

TLPT is being applied in this study as an adaptation of bricolage, a methodological approach to social science research. In it, the researcher is seen as a bricoleur, "an individual who makes quilts" by assembling a patchwork of different shapes, sizes, materials, and colors (Denzin & Lincoln, 2006, p. 18). Patchwork addition is a creative, multi-tasking process that combines joining juxtaposed pieces into "a sequence of representations that connect the parts to the whole" (Denzin & Lincoln, 2006, p. 20). It is applied in different social practices such as filmmaking, music, and literature; and has been strongly oriented in education research (Higgins et al., 2017; Kincheloe & Berry, 2007; Neira & Lippi, 2012; Rodrigues et al., 2016).

The empirical field of study was a discipline of qualitative methods in which this teaching-learning strategy was applied. Methodologically, it presented a professor-student duoethnographic research used to understand the trajectory of the phenomenon (Burleigh & Burm, 2022; Chan & Ritchie, 2022; Norris et al., 2012; Sawyer & Norris, 2015), in addition to the main challenges and impacts of using the active TLPT methodology in the management doctoral program.

The design of the research objective is justified by understanding that innovation in the classroom should be a constant process and not something done just once. Adoption of active methodologies in doctoral courses involves a necessary reflection on new experiences that meet the new reality in which teaching-learning conditions occur. The introduction of new teaching approaches is essential. Several authors have claimed that the traditional model no longer meets the need of both the world of work and students (Banerjee & Morley, 2012; Bonner et al., 2020; Maor et al., 2016; Yang et al., 2019).

As a practical contribution, this work describes the experience of using an active collaborative methodology at the doctoral level, presenting its strengths and limitations. We present theoretical contributions to the literature on teaching methodology applied in *stricto sensu* education. Finally, the study is justified because it broadens the debate on the discussion of innovations in teaching methods in *stricto sensu* programs, which is not widespread compared to other levels of education and professional training.

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[*] "Stricto sensu" is a term used in the Brazilian educational system to refer to graduate programs that are specialized and focused on a particular field of study. These programs offer advanced academic degrees, such as a Master's or a Ph.D.

Literature Review

Teaching Methodologies in Stricto Sensu: From Traditional Teaching to the Discussion of the Use of Active Methodologies

Historically, educational models for the construction of higher education have been centered on the figure of the teacher, who is the holder of knowledge and protagonist of the educational process. In these models, the teacher conveys knowledge to the student (Bates, 2017; Hamamra et al., 2021). The student assumes a position of passivity, a passive receiver of the learning process (Hoidn & Reusser, 2021). Teaching strategies such as expository-explanatory lectures and written reproduction of content, lectures, and seminars are used.

Theorists and educators have heavily criticized this model (Freire, 2009; Gargallo-López et al., 2017; Quinn Trank & Brink, 2020). In addition, today's society requires professionals trained by universities with a proactive profile capable of taking initiatives in line with the needs and dynamics of the current reality. This demand was heightened in the face of the Covid-19 pandemic context, where students urgently needed greater autonomy in their teaching-learning process (Hamamra et al., 2021). Thus, the need to discuss the methodologies used in higher education training was intensified, including in *stricto sensu courses.*

However, the importance of this level of educational background is not echoed in discussions of teaching methodologies. *Stricto sensu* courses have little visibility in the specialized literature, compared to the vast amount of published works related to undergraduate and basic education levels (Brighenti et al., 2015; Silva et al., 2018). "Debates about teaching in doctoral education are still incipient" (Bispo, 2017, p. 160) and little attention "is paid to the pedagogical approaches used to train PhD students" (Oswald et al., 2020, p. 1).

This may also reflect the focus on research and academic production established under the motto "publish or perish," to the detriment of the study of teaching strategies used in *stricto sensu* courses (Marx et al., 2015). According to Pereira and Medeiros (2011), in Brazil, policies fostered by official agencies such as the Coordination for the Improvement of Higher-Level Personnel - CAPES† focus on research to the detriment of teaching. In this way, they have generated chronic weaknesses in the didactic-pedagogical training of teachers, which is no longer tolerable in the face of the technological development we have at our disposal.

Despite the growing contemporary discussion, the proposal to use active methodologies as a pedagogical practice has conceptual bases in the early twentieth century. The United Nations Educational, Scientific, and Cultural Organization - UNESCO (1998), in its World Declaration for Higher Education XXI, already pointed out the need to improve educational projects and search for new pedagogical practices that meet the demands of society. The statement highlights how technological innovations have changed how knowledge is developed, acquired, and conveyed. There is, therefore, a global context to encourage the review of pedagogical practices to improve students' intellectual performance. New proposals must consider active learning methodologies as a viable solution. In fact, with increasingly accessible technological advances, favorable conditions have been created to install innovative practices in education, enabling the application of the concepts discussed in theory (Camargo & Daros, 2018).

The main proposal of the active methodology is to transform the student from being passive to being active in all stages of learning, making the teacher an orientator in this process. The active methodology does not diminish the importance of the teacher in the teaching process but offers strategies that allow the teacher to make the student the protagonist in his or her training process (Mazur, 2015).

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† https://www.gov.br/mec/pt-br/assuntos/noticias/o-que-ea-capes

Even in the face of favorable conditions for the use of innovative teaching practices, many teachers continue to use strategies that do little to explore students' creativity, collaborative work, and reflexivity. In *stricto sensu*, the insistence on the use of traditional teaching methods is especially harmful considering that students end up replicating the teaching strategies used during their training process as teachers (Crisol-Moya et al., 2020).

Although the production of specialized literature on teaching methods in *stricto sensu* courses is very incipient (Oswald et al., 2020; Quinn Trank & Brink, 2020), some researchers have pointed out ways to innovate didactic-pedagogical strategies. These studies include works that propose the use of gamification (Snelson et al., 2017), problem-based learning (Yang et al., 2019), conceptual change approach (Dominguez et al., 2019), learning by integrated action (Wilson et al., 2021), teaching seminar (Bonner et al., 2020), autoethnography (Lee, 2020).

In this context, we seek to expand the literature by presenting it from an experienced critical reflection about the active methodology TLPT used as a strategy in the training process of a doctoral course. Our reflection on the use of this methodology can contribute to doctoral programs reviewing their didactic-pedagogical teaching policies (Maynard et al., 2016; Ulla & Tarrayo, 2021) seeking to insert practical forms of collaboration in teaching (Malfroy, 2005) and strategies of mediation in remote teaching (Wilson et al., 2021).

Flipped Classroom

Flipped Classroom is a model whose conception takes us back to the foundations of hybrid teaching (O'Flaherty & Phillips, 2015; Tarnopolsky, 2012). Based on e-learning[‡] experiences, in which learning takes place on the web, hybrid teaching, *blended learning* or *b-learning* takes advantage of technological resources to encourage student autonomy in acquiring knowledge. This initial learning process is reinforced at another moment in the process through the assistance of a teacher (Christensen et al., 2013). Thus, hybrid teaching seeks to mix the two modalities – synchronous classroom and asynchronous.

Synchronous teaching refers to an event or activity that occurs in real time and requires the participation of all involved parties at the same time. In a synchronous learning environment, learners and instructors interact and communicate with each other in real-time, such as through live video conferencing or chat sessions. Asynchronous timing, on the other hand, refers to an event or activity that is not bound to a specific time or schedule. In an asynchronous learning environment, learners access educational materials and complete assignments on their schedule, without needing to be present at a specific time. Communication and feedback may still occur, but it is not necessarily in real-time and may take place over messaging systems or discussion forums (Martin et al., 2023; Ravizza et al., 2023).

In the context of hybrid teaching, the flipped classroom is a strategy that serves as a backdrop for working with active methodologies. In this case, the lecture is replaced by more dynamic and participatory teaching-learning strategies, in which knowledge is built together, and the teacher becomes an orientator or facilitator in this process (Bergmann & Sams, 2012; 2018). This strategy enhances the development of proactive students, as it encourages the appropriation of knowledge autonomously and at the pace of each student's learning. Consequently, it assigns greater responsibility compared to teacher-centered methods.

The Initial concepts of the flipped classroom were presented by Baker (2000) and, in the same year, Lage et al. (2000) published the positive results achieved using the method in the classroom. The authors concluded that transferring the exposure of the content or basic information to a moment before the classroom, allows students to prepare beforehand to use

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[‡] E-learning, also known as electronic learning or distance learning, is a form of education that uses information and communication technologies (ICTs) to facilitate the learning process.
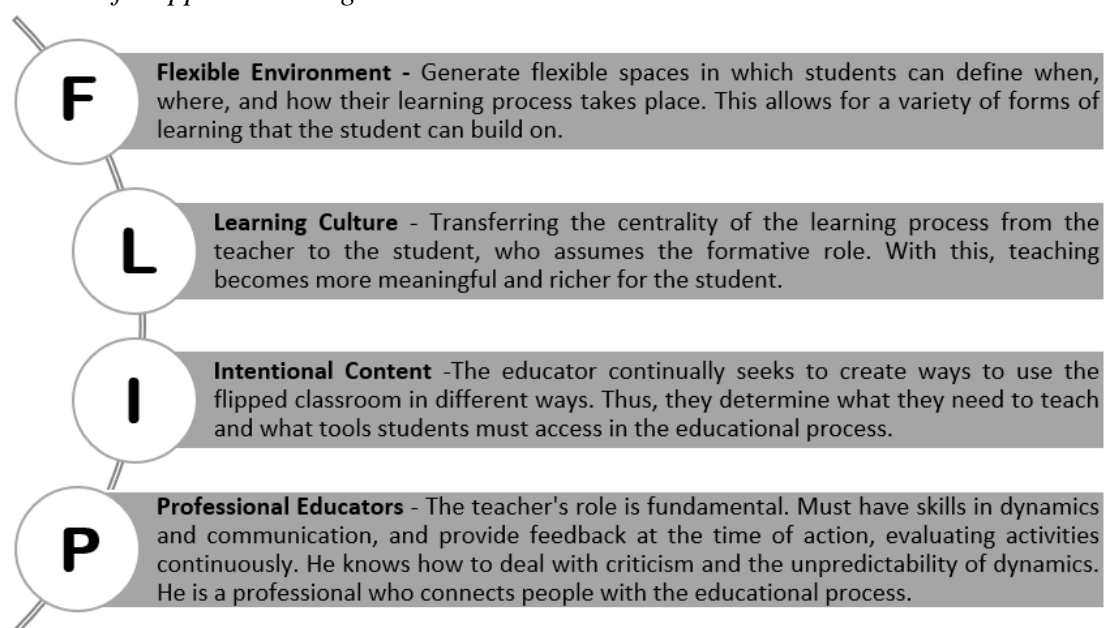
active methodologies during the class. Thus, the moment of interaction helps in the development of communication skills and higher-order thinking.

Bergmann and Sams (2018), consolidators of the Flipped Classroom construct, point out that the technological resources used before the face-to-face-synchronous classroom do not constitute the greatest benefit of the flipped classroom. Rather, significant advantages are obtained from the possibility of practical methods applied in face-to-face synchronous meetings, such as problem-based learning or team learning. These are strategies that encourage the involvement of students in the process of producing their knowledge. Reducing the exclusive lecture workload allows the teacher to work the content in an applied way, encourage collaborative work and direct the study of students with difficulties (Bergmann & Sams, 2012).

The Organization for Economic Cooperation and Development (OECD, 2002) already pointed out at the beginning of the 21st century, the limitations of traditional curricula and methods. Even, it became increasingly important to develop positive attitudes as a bridge to a happy life or rewarding work. Communication, teamwork, organization, and problem-solving skills also became essential. Furthermore, learning to learn, since knowledge in the form of written or audiovisual content will be easily accessible. Considering that the Flipped Classroom provides access to content in advance, the moments of face-to-face-synchronous meetings focus on active methodologies that make it possible to work on cognitive skills and socio-emotional skills, with the support of teachers and other students in the construction of the knowledge collaboratively (Bergmann & Sams, 2018; Moran, 2015).

The Flipped Learning Network (FLN, 2014), an organization dedicated to spreading the concepts of the Flipped Classroom, warns that flipping a classroom does not necessarily lead to flipped learning. Flipped learning is a pedagogical approach with a transference from the group learning dimension to the individual learning dimension. In this way, the meetings in the classroom become a dynamic and interactive learning environment, with the teacher being a facilitator in the application of the concept. To achieve flipped learning, the FLN recommends that teachers incorporate the four pillars of the flipped classroom into their practices: Flexible Environment, Learning Culture, Intentional Content, and Professional Educators, as summarized in Figure 1 below.

Figure 1
Pillars of Flipped Learning

F — **Flexible Environment -** Generate flexible spaces in which students can define when, where, and how their learning process takes place. This allows for a variety of forms of learning that the student can build on.

L — **Learning Culture** - Transferring the centrality of the learning process from the teacher to the student, who assumes the formative role. With this, teaching becomes more meaningful and richer for the student.

I — **Intentional Content** -The educator continually seeks to create ways to use the flipped classroom in different ways. Thus, they determine what they need to teach and what tools students must access in the educational process.

P — **Professional Educators** - The teacher's role is fundamental. Must have skills in dynamics and communication, and provide feedback at the time of action, evaluating activities continuously. He knows how to deal with criticism and the unpredictability of dynamics. He is a professional who connects people with the educational process.

Source: authors based on Definition of Flipped Learning, 2014.

Moran (2015) considers the Flipped Classroom one of the most interesting methodological proposals of the present, mixing technology with teaching methodology. Another advantage pointed out by the author is that it allows the use of creative activities in synchronous classes after individual study time, using a combination of challenge learning, projects, case studies, and games. According to Bergmann and Sams (2018), as there is no single flipping model, it is up to the teacher to implement active methodologies in different ways, to enable students to work on their cognitive and socio-emotional skills. From this perspective, given the current context in teaching, the Flipped Classroom reveals benefits that can contribute to the application of new teaching methodologies applied to *stricto sensu.*

Methodological Procedures

This is a qualitative study that aimed to analyze the contribution of the active TLPT methodology as a teaching strategy in doctoral programs. To achieve the proposed objective, duoethnography was used as a strategy for data collection and analysis. To present the logical flow of the research, as well as to provide an understanding of the methodological process used, we describe below the context of the participants, the duoethnographic method, and the generation and analysis of data.

Context and Participants

This study is the result of a lived experience of an educational innovation process in the context of implementing an active methodology in the Qualitative Research Procedures course of the UFPR administration doctoral program. The innovation came about through the teacher's initiative in proposing the TLPT active methodology in the doctoral program.

The students participated in remote synchronous classes from various states in Brazil, through a collaborative work platform, with a total of 20 students enrolled in the qualitative course. It should be clarified that the teacher adopted emergent strategies to innovate the teaching of this discipline due to the COVID-19 pandemic. Otherwise, classes would have taken place in a traditional format with the teacher and students in the same physical environment.

It is important to note that Brazilian doctoral programs exclusively use face-to-face teaching. However, due to the COVID-19 pandemic, remote teaching, through the use of information technology, was adopted temporarily and on an emergency basis at UFPR. The synchronous presence of the student on the video conference platform was mandatory on the days and times predefined in the course schedule.

At the end of the course, two students of the program who are the authors of this work, in conversation with the professor, proposed to analyze the lived experience, as the use of active methodology at the doctoral level is little explored (Snelson et al., 2017). Thus, we considered it an opportunity to contribute to the literature and disseminate our findings. Therefore, the teacher and students conducted a duoethnography presented here.

The teacher is a full member of the doctoral program for over ten years. She has extensive experience in academic supervision and guidance, with expertise in educational processes. The two academics who conducted this study are higher education teachers and hold administrative positions in another educational institution. Both the teacher and doctoral students have training and experience with active methodologies and already applied them in undergraduate classes. The participants' training contributed to the identification and reflection on the applied methodology, as their prior knowledge made it possible to recognize and analyze fundamental concepts and principles of an active methodology.

These brief personal identities were important for the reflection on the teaching-learning process that is now the object of understanding by the authors involved in the duoethnography. For example, the teacher recalled and connected personal experiences from her trajectory as a teacher, and then one of the students raised questions that provoked new reflections. These conversations were conducted organically, in which the duoethnographers shared views and considerations on the experimented educational methodology. Next, we describe a little about the method.

Duoethnography

Duoethnography is a qualitative research approach that involves two or more researchers from different cultural or ethnic backgrounds engaging in a collaborative exploration of their experiences, perspectives, and knowledge (Burleigh & Burm, 2022; Chan & Ritchie, 2022; Norris et al., 2012; Sawyer & Norris, 2015). The duethnographers "work in tandem to dialogically critique and question the meanings they give to social issues and epistemological constructs" (Sawyer & Norris, 2012, p. 2).

The researchers engage in a dialogue where they share personal narratives, perceptions, and reflections on a specific topic or phenomenon, and assume that meaning is in the process of lived experience (Sawyer & Liggett, 2012). In this context, trust arises as an indispensable element in duoethnographic research, as the lack of trust among researchers can lead to biased dialogues and shallow analyses, impeding a thorough discussion of the phenomenon under investigation (Norris et al., 2012). The stronger the mutual trust, the higher the likelihood of discovering deeper perspectives. Therefore, maintaining an ethical and respectful attitude among participants who share their personal narratives plays a foundational role.

We adopted the duoethnographic methodology because we understood that some of its characteristics, including, among others, the act of being ourselves the very site of research and working collaboratively, were elements that best suited our experience, providing an opportunity for the voice of each duoethnographer to "(re)story their narrative perception of the particular topic or theme" (Sawyer & Norris, 2009, p. 127). Our intention in this process is not to find points in common, "but differences as they collaboratively develop a transformative text" (Sawyer & Norris, 2012, p. 2).

Duoethnography has evolved as an appropriate method for capturing critiques and reflections from the perspectives and relationships among individuals with unique life histories and different viewpoints (Norris et al., 2012; Sawyer & Norris, 2015; Vaccaro et al., 2020). This methodology provides an opportunity for deep learning, allowing an understanding of oneself through the experiences of the "other" (Norris et al., 2012, p. 9). Duoethnography brings credibility to research, as it incorporates the ethics of care since it is conducted with the researchers rather than the researched, promoting participatory and emancipatory research behavior, and establishing a deep discussion about the phenomenon (Sawyer & Norris, 2012).

Duoethnography acknowledges that researchers are active participants in the research and that their experiences, perspectives, and influences affect the process of data collection and analysis. Therefore, methods and procedures include reflective dialogue; shared data collection; collaborative analysis; subjectivity, and reflexivity of participants, encouraging self-reflection and self-criticism throughout the research process (Burleigh & Burm, 2022). By taking on a central role as participants in their own research, "duoethnographers interpret their dialogically created meanings and seek critical tension, insights, and new perspectives" (Sawyer & Norris, 2012, p. 4).

Duoethnography is a research approach that goes beyond merely revisiting and retelling the past. It stands out for its inquiry into the meanings of lived experiences and for projecting a reconceptualization from multiple perspectives. Thus, duoethnography emerges as a dynamic

research methodology that not only delves into narratives of the past but also extends the boundaries of knowledge by involving participants in a journey of reflection, reinterpretation, and co-creation of meanings (Pinar, 1975).

The two sides – teachers and students – who experienced the object of research, weave a dialogue of their experiences in the context of the same phenomenon (Snipes & LePeau, 2017). The scripted play, produced from dialogues and reflections, contains the perspective of each person involved in the story. The voices of the duoethnographers are unique and, together, are combined in the construction of the narrative. In other words, "as duoethnographers collaborate, their voices and ideas blend in unique ways" (Norris et al., 2012, p. 11).

Data Generation and Analysis

The research production process was developed considering the conversations between the authors of this study: two students and a teacher. A safe space was created by our trusting relationship, allowing us to engage in critical reflections and construct our narratives. These organic conversations eventually led to the creation of this article.

In duoethnography, "through juxtaposition, the voices of each researcher are made explicit, working together to uncover and disarticulate meanings about a given social phenomenon," in this way data generation and analysis occur simultaneously (Burleigh & Burm, 2022, p. 1).

The data generation process occurred through three online meetings using a videoconferencing platform (Google Meet). Each meeting lasted approximately one hour and thirty minutes. The audio files were stored in the cloud (Google Drive), a service that enabled both researchers to access the files at different times and spaces for analysis and reflection. The recorded conversations were available exclusively for access by the research team.

Unlike an interview, where the interviewer impartially talks to the interviewee with questions and answers, in duoethnography there is no role for the interviewer. Our dialogues occurred in a horizontal process, where at that moment, there was not a teacher and a student, but people who had just experienced an innovative educational process. This clarification is important, as one of the challenges of using student-teacher duoethnography is to manage the power relationship between the participants (Snelson et al., 2017).

The three involved researchers, a teacher and two students, conducted three meetings. Our efforts were centered on structuring a dialogue as a tool to foster reflection and explore the meanings of each narrative in the (re)conceptualization of the phenomenon. Our first meeting focused on the academic and professional experiences of the three researchers involved, in a dialogue that sought to return to the past and identify the influences that reflect in the present.

The next two meetings were framed as reflective provocations, in a dialog that generated data. As we collaborated, our focus was on exploring the discrepancies rather than congruences between our respective visions. We initiated discussions on our research subject – the description of TLPT, both from the perspective of planned it, in this case, the teacher, and that of those who took the course, the students. We also questioned whether TLPT enabled the transformation of passive students into active ones in all stages of learning, with the teacher remaining as a guide in this process. Furthermore, we explored whether TLPT allowed a collaborative teaching experience and shared knowledge. These provocations were crucial in organizing our reflections and constructing valuable educational experiences within the educational methodology discussed here.

In this process, we identified positive/negative points and the main challenges of using TLPT on stricto sensu. At the end of our conversation, we talked about future projections for TLPT: what should be done differently? What should be added? What should be removed? And what should be improved? These final provocations yielded significant contributions to

the manuscript, as they were of interest to the teacher, as well as to the students who intend to replicate the teaching method in their working practices. All the questions raised in our meetings were instrumental in guiding reflections on the living present and generating data.

In the process of data analysis is developed based on the (re)creation of the lived experience, generating patterns of meaning (Sawyer & Norris, 2015). To develop patterns of meaning, the Currere method (Pinar, 1975) was used. The contribution of each participant was highlighted, presenting different perspectives on the same object, where tensions and reflections were evidenced, in four points of view observed. Regressive: remembering past autobiographical and educational experiences; Progressive: considering the imagined future of lived and educational experiences; Analytical: examining how the past and present affect educational experiences; and Synthetic: examining the meaning of the present lived as a whole (Godoi & Balsini, 2010; Pinar, 1975).

The data were triangulated during the analysis process, through the researchers' self-reflection, and in a complementary way, documentary analysis of the following documents: discipline syllabus and lesson plans. This step contributed to complementing and strengthening the validity of the research results. All the consulted materials were made available to the doctoral students in a collaborative environment.

To establish the validity and reliability of the results, the final research report was evaluated by other students participating in the same course, to verify convergent viewpoints or rival explanations (Yin, 2015). In the rival explanation, the invitee develops an alternative explanation that could explain the same results observed in the case study, but that was not investigated or considered in the original research.

Among the eighteen other students in the course, five voluntarily accepted our invitation to be a rival explainer. Each of these five rival explainers received the final report, read it, and returned it with their perspectives on the strategy adopted. Thus, we added the perceptions experienced by other students in the course. This comparison between different data sources and analyses increases the credibility and reliability of the study. In the next topic, we will address how the TLPT methodology was constituted in the teaching-learning process.

Teaching-Learning Patchwork Technique (TLPT)

We use in this research an adaptation of the bricolage research methodology (Kincheloe & Berry, 2007; Neira & Lippi, 2012; Rodrigues et al., 2016) as a pedagogical option in doctoral education. The central idea of the bricolage is that researchers do not start from a preconceived hypothesis or a rigid method, but rather, from a more flexible and open perspective that allows the incorporation of heterogeneous elements and the continuous adaptation of the research process, as a way to value creativity and experimentation (Denzin & Lincoln, 2006).

Considering that bricolage is the joining of patches that together form the whole (Denzin & Lincoln, 2006), and that patchwork technique (Higgins et al., 2017; Rizzo & Fonseca, 2010) has a strong connection with education research (Kincheloe & Berry, 2007), a pedagogical proposal for doctoral teaching-learning was implemented considering the characteristics of patch addition.

The patchwork quilt is a traditional folk art form in many cultures in different regions of the world, especially in Brazil. It is a piece of fabric made from the union of small pieces of various fabrics, with different textures, colors, and patterns. The technique is used in different handicrafts, such as blankets, rugs, bags, and clothes (Rizzo & Fonseca, 2010). Its confection consists basically of three steps. In the first stage, the choice of patches is made by defining the size, shape, and organization of the cuts. In this way, it is possible to get an idea of the result that is expected. In the second step, the cuts or chosen pieces are joined as it was planned. In

the third and last stage, the lining is applied, giving a base to the sewn pieces and forming, finally, a single piece.

As we reflect on the active educational practice implemented by the teacher, considering its characteristic of joining various elements, we used the folk art of patchwork making as a metaphor to call it the Teaching-Learning Patchwork Technique (TLPT). The TLPT was applied in the qualitative research discipline of the Doctorate in Administration to promote the joining of parts of the content (the patches) worked on throughout the discipline. By promoting the construction of the final activity of the discipline – a qualitative research project developed as a team – it was possible to see how the knowledge cuts contributed to the formation of the design of qualitative research (analogy related to the finished patchwork quilt).

The process of building this knowledge was carried out based on collaborative learning and facilitated by active methodologies that stimulate cognitive and socio-emotional skills. The TLPT was characterized by three phases: Teacher presentation (Description of the cuttings and Quilt Planning), Flipped Classroom (Description and individual and collective understanding of the cuttings), and Construction of the patchwork quilt in teams (Joining the Patchwork and Final Sewing). Figure 2 illustrates the steps of the TLPT.

Quilt Planning is the preparation and beginning phase of the discipline. At this stage, the teacher – who guides the quilt-making process – begins to choose the patches to be worked on based on his or her previous knowledge and experience. In addition to the choice of patches, the timing and approach of each patch are defined. The expected result of the discipline – the development of a complete qualitative research design – is divided into patches corresponding to certain themes. In the subject under analysis, the organization and sequence of the contents worked on is a determining factor for the result, to the extent that patches are at the same time interdependent and complementary. That is, research design decisions impact other decisions and so on recursively. Therefore, the patches must be arranged in such a way as to make it possible to complete the entire patchwork quilt. The planning phase ends in the inaugural class of the discipline, in which all stages of the construction of the patchwork quilt, the sequence of patches, the time, and the way of working are described and presented.

In the second stage, each quilt patch was intensively worked using a flipped classroom. Bergmann and Sams (2018) point out that the flipped classroom is a strategy that serves as a backdrop for working with active methodologies, in this case, there is a replacement of the exclusive lecture, with more dynamic and participative classes, where knowledge was built together. All contents to be worked on were posted in advance at the beginning of classes in a Virtual Learning Environment. Each patch contained the pre-class phase – where the contents were made available in Virtual Learning Environment for prior access by students, and the synchronous class phase, in which the contents were worked with dynamic and participatory activities (Martin et al., 2023; Ravizza et al., 2023). In the after-class phase, it is time to use the flipped classroom strategies, which in this case is marked by revisions of the contents worked during the patchwork (Bergmann & Sams, 2012, 2018).

Considering that the Flipped Classroom provides prior access to content, the moments of synchronous encounters focus on active methodologies that make it possible to work on cognitive and socio-emotional skills (Moran, 2015). The classroom time was focused on interactive, collaborative activities, such as discussions, debates, problem-solving, and group projects (O'Flaherty & Phillips, 2015). Therefore, in the pre-class phase, there was a moment of autonomous individual study, where students acquire knowledge about the content that will be worked on in the synchronous meeting; sometimes individual activities of a lower level of complexity compared to those carried out in the classroom were requested in advance. This occurred when individual prior activity would be needed as the basis for team activity in the classroom.

Figure 2
Teaching-Learning Patchwork Technique (TLPT)
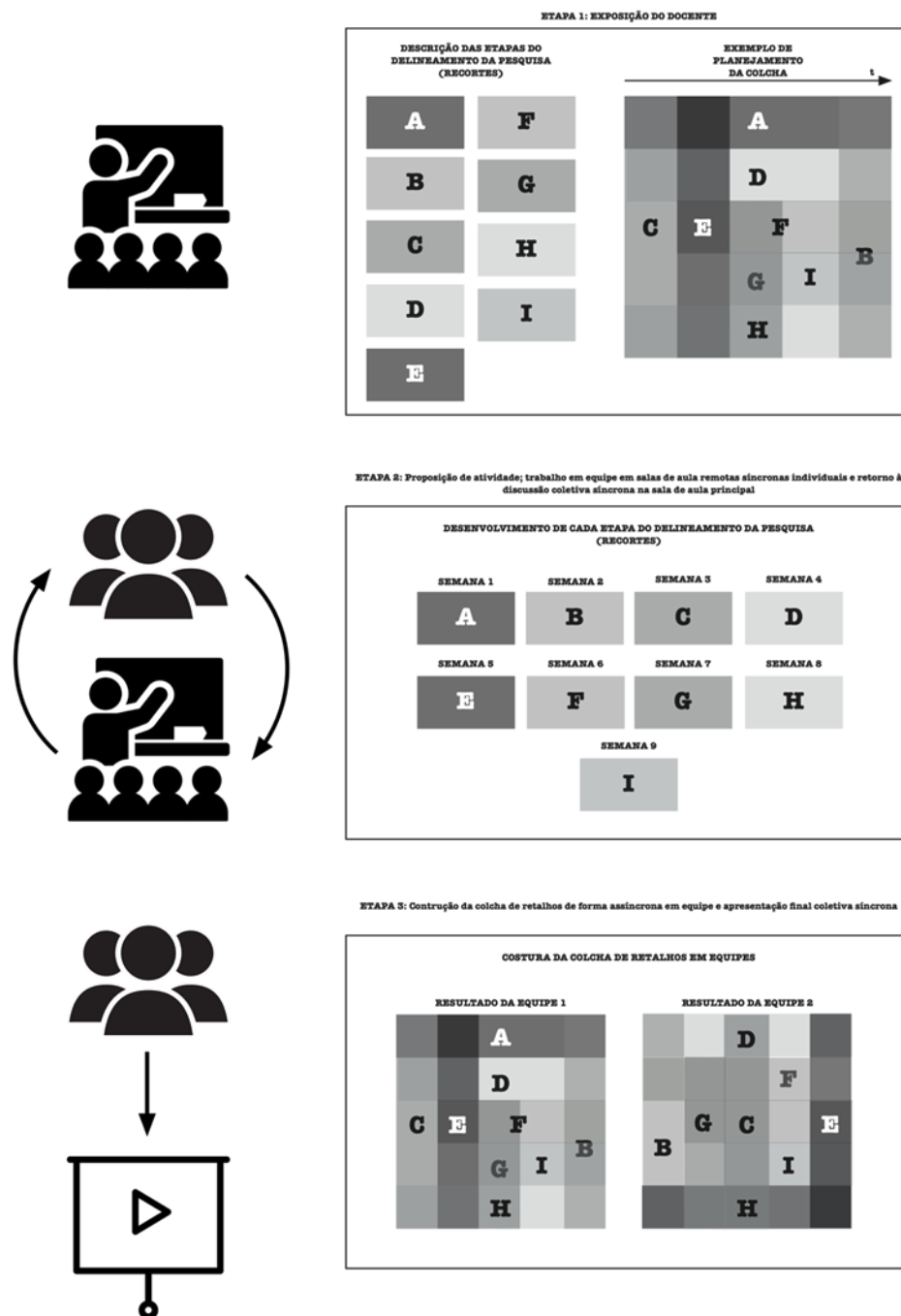
During the collective weekly synchronous meetings, a brief 10 to 15-minute lecture was held by the teacher and subsequently, various activities proposed during the class were carried out, which should be carried out in groups divided into different virtual classrooms.

In one of the classes, for example, a brainstorming activity was proposed, a technique used in group dynamics. In this case, the technique served to explore individual understandings and doubts to build collective knowledge. In the online rooms open to each team, the activity was developed based on the deadline and the proposed objective. The construction of knowledge in this modality sought to exercise collaborative work and a problem-based

approach. Teams alternated at each class, so students needed to exercise communication skills and mutual understanding with new classmates. At the end of each class, the tasks for the after-class period were informed, conformed proposed by Bergmann and Sams, (2012).

In the third and final stage, teams are formed to build a patchwork quilt (Matitz et al., 2021) – the complete design of qualitative research from the joining and sewing of all the patches studied individually in the previous weeks. The activity was carried out completely asynchronously and remotely, involving students from different states in Brazil. Finally, the patchwork quilts were presented collectively in a synchronous class.

Multilayered Reflections on Patchwork Quilt Approach

The objective of our reflections was to understand how the educational experience lived in the proposed active methodology contributed to the learning and future professional experience. Dialogizing the present with the past and future expectations is fundamental to understanding the "living present"§ (Godoi & Balsini, 2010).

Regressive perspective of analysis

We began by analyzing the regressive point of view, reflecting on moments experienced in the professional, academic, and personal trajectory of the participants involved in this duoethnography: teacher and the two students. Looking at the past allows us to understand lived experiences and makes it possible to give meaning to the living present (Pinar, 1975). Thus, statements such as "my first tip to translate how I am as a teacher is my training" (*teacher*) or "my second graduation was in a remote learning course" (*student 2*), illustrates the strong influence of the past on the lived experience during the application of the TLPT methodology. We started with an excerpt of the discipline teacher's speech:

> ***Teacher***: My graduation is in industrial design. So, I think my first hint to translate how I am as a teacher is my background because industrial design is a very practice-oriented course. We had projects applied every semester and few subjects were exclusive lectures. So, I think that there is a little seed of my training as a teacher there.

We realize that her academic background is strongly linked to her professional profile, influencing the adoption of teaching methods and strategies. Asked the teacher 'How did your experiences as a student lead you to have insights about teaching?' The teacher says that "We learn how to be teachers here in Brazil much more by being students and watching the teachers, than by taking courses." Keiler (2018) realized that many teachers in *stricto sensu* tend to reproduce in the classroom the teaching practices and strategies experienced during their training. The teacher's report confirms this relationship between the educational experiences lived and the didactic practices of future teachers. Therefore, it is concluded that the application of active methodologies has the potential to contribute to and encourage the use of new methodologies in the future.

The application of active teaching-learning strategies was not a quick process: "it was more than two decades using the traditional method, with some isolated attempts at methodological innovation in teaching" (Teacher).

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§ For Merleau-Ponty, the living present represents a temporal dimension that is divided between a past for which it collects and a future for which it is projected (1993, p. 346).

> ***Teacher:*** In the doctoral program in Business Administration, I have always used traditional methods, such as lectures. With the Covid-19 pandemic and the consequent shift from face-to-face teaching to remote emergency teaching, the opportunity arose to test some teaching alternatives.

This speech reflects the difficulty and slowness of introducing didactic innovations in teaching, especially in doctoral courses in Brazil. Even with the expansion of courses, debates on pedagogical approaches focused on *stricto sensu* are still incipient (Bispo, 2017; Snelson et al., 2017). The focus is on research and academic production, which weakens the pedagogical training of *stricto sensu* teachers.

The students participating in the duoethnography have professional experience with *online* teaching and training in active methodologies, as pointed out in *student 2*'s speech: "We have received at the Federal Institute of Rondônia training to act as professors in remote undergraduate courses." These previous experiences facilitated the students' understanding and acceptance of the active methodologies implemented by the teacher. Thus, we infer that students with previous knowledge or experience in active methodologies are more receptive to these methods.

In our dialogues we highlight that the experiences acquired in training and professional performance contribute both to applying and developing innovative active methodologies. However, due to the limitations of the research, it was not possible to conclude which background has the greatest potential to influence. Nevertheless, we can affirm that the emotional bonds created in the training course play a strong role in the direction and methodological choices of teachers, as already pointed out by Crisol-Moya et al. (2020).

Applying active methodologies in a doctoral program is not easy. In general, they are students who have a long academic path rooted in traditional teaching strategies. The change may not be well accepted, and this could influence the student's final performance. Therefore, if there is resistance to innovation in the teaching-learning methodology, it is up to the teacher to work on the students' individualities.

Progressive Perspective of Analysis

Dialogue from the perspective of the progressive presupposes taking into account the living present for this imagined future. The reflections of the now reflect in experienced planning and, consequently, in an adjusted practice considering the imagined future of lived experiences.

We started our reflections from a progressive point of view with personal learning highlighted by the teacher: "an experience that I don't intend to repeat is to start a class with a high number of academics." For her, the ideal in doctoral programs are groups with a maximum of 10 students, regardless of the format being in-person or remote synchronous. But the professor points out: "So, for me, it was a negative experience to have such a large class. It was a learning experience: if we continue in remote or even hybrid, large classes don't work."

This reflection is ratified by the view of *rival thinking 3*, which when reflecting on the difficulties of the method and of carrying out group activities, said: "It is likely that the number of students has generated the protocol participation (little protagonist) of some students in the process" (*rival thinking 3*).

Still, about positive and negative points in the application of the method, the teacher pointed out that the experience in this class allowed for a broader reflection on the need for future change in the way of giving feedback in the classroom and at the end of the discipline.

> ***Teacher***: I have to learn how to give more positive feedback because I tend to focus a lot on negative aspects. I don't give a lot of praise and maybe the student doesn't notice what I perceived well, because I almost always focus exclusively on the points where he or she still needs improvement. This is an action that I need to improve, not only in terms of applying the method but also in learning to demonstrate that I am following the student's learning and difficulties.

Student 1 and Student 2 reflected that one of the positive points of the applied TLPT is related to the future perspective of application in their didactic-pedagogical practices. "I analyzed the possibilities of always innovating the way content can be applied. In developing the discipline, I observed the process under two lenses: one of the students who was taking the program and of the future professional who intends to apply active methodologies in my classes." This passage confirms the study of Crisol-Moya et al. (2020) when they conclude that teachers tend to replicate in their professional performance the strategies with which they were taught.

At the end of the dialogue, the teacher asked if the students believed that the method could be replicated. Both recognize that it is, that is, they agree that it is possible to replicate the method for other programs and courses and also in different teaching modalities.

> ***Student 1***: It's a complicated method to describe at the beginning. Those of us who experienced it in practice understand. But we only have this understanding now, after completing the course. Because in the middle of the course, only the description of each class is understandable. Now, with this conversation, I have another understanding. The professor knew *a priori* the content she was going to work on, but the didactic strategies depended on the content of each class.

In other words, the TLPT consists of multiple didactic-pedagogical strategies chosen based on the nature of the content to be worked on in each section of the discipline. In some cases, a brainstorming technique was the most adequate, while in other cases directed study, abstract development, case studies, projective simulation techniques, and reverse analysis of research designs, among others, were used.

Analytical and Synthetic Perspectives of Analysis

This topic reflects the impact of the experiences lived during the application of the TLPT on the training process. Reflections from the analytical and synthetic points of view were grouped, reflecting how the past and present affect the educational experience in the lived present.

When discussing the characteristics of the training process in the stricto sensu, we highlighted autonomy as a necessary skill for the student at this level of education. When discussing TLPT, we highlighted the methodology as an opportunity to encourage self-knowledge, transforming the student from passive to active in all stages of learning (Mazur, 2015).

> ***Student 2***: The main difference between graduation and a doctorate is the autonomy that the student has, as he already has a suitcase of knowledge and information. A central feature of *stricto sensu* programs is the fact that academics need to walk using or their legs, that is, they need to be autonomous and the protagonist of their pathway. [...] That's why active methodologies are more interesting compared to traditional methodologies.

In one of the meetings, the teacher pointed out that the choice of TLPT took into consideration the students' previous knowledge about the content to be studied: "as it is a subject that proposes the study of advanced aspects of qualitative research, it presupposes that the student already has previous knowledge about the topic." In addition, the professor reinforces:

> **Teacher:** In my experience, even if the student has already completed a master's degree, he hardly ever reaches a doctorate with solid knowledge of the qualitative method […]. So, my option for the method is aligned with the attempt to homogenize the knowledge of the class.

Continuing the dialog, the teacher reflected on the conditions for the choice of teaching method used:: "some teachers assume that students already have a well-founded knowledge base and therefore start the discipline at a high level while the poor student is at a lower level of knowledge." And he continues: "I think the content of the course is very important, especially for the professional academic activity after the doctorate, because they are going to be researchers, article reviewers, and participate in juries. [...] He or she cannot leave here (the doctoral program) without this knowledge. It's almost the last chance."

Therefore, based on the professor's reflections, we verified the importance and impact of her previous experiences and impressions as determining factors in choosing an active methodology in addressing essential training themes at the doctoral level. This wasn't her first class, which allowed for a type of reflection based on the teaching practice of the past and at the same time with an impact on the teaching practice of the present.

Our dialog also confirmed what the literature points out regarding considerable flaws in teaching methods in doctoral programs. Bonner et al. (2020) highlight that the teaching process in these courses needs to be reflected in the experiences of the professionals involved: academics and professors. Our reflections made it possible to identify an educational flaw, that scientific thinking is not so worked on at graduation, and that "doctoral programs cannot pretend that this flaw does not exist" (Teacher).

With the Covid-19 pandemic, in planning the discipline, the teacher took into consideration the fact that the course would take place remotely synchronously and that several students did not know each other and were geographically distant. Therefore, there was a special concern with the implementation of different active strategies that would promote interaction between students, enhance learning, and build collaborative networks. "I know that students need moments to interact with their classmates more closely without the hierarchical elements of the teacher" (Teacher).

> **Student 1:** The use of different strategies enabled greater interaction with the class, getting to know other people and their research projects. We discussed the content, and it was possible to contribute to each other's proposal. So, today, if I need to talk about a certain topic, I know who to look for. [...] We built a network.

Garcia and Yao (2019) highlight that integration into an online doctoral program depends heavily on interactions between academics. In the TLPT approach, the adoption of different active strategies enabled the interaction between doctoral students, potentiating the construction of networks. The TLPT allowed students of different academic interests to exchange knowledge. Some students are more introverted in the classroom, and the interaction with their peers contributed to the exchange of knowledge: "Some people left to ask questions

in group moments" (*Student 1*). "I was more comfortable raising a question in conversations with other course colleagues than in the formal classroom environment" (Student 2).

"But did you spend more time with synchronous activities or with asynchronous activities?" asked the teacher. We reflect that the teaching strategy adopted demanded more time in group activities and this ended up stimulating more interaction among the students. "Group activities, for example, demand an initial time for informal and parallel conversations until you start executing the activity. They were relaxed environments." (Student 2). "It was the moment to get to know the colleagues, where they lived, and what research they were developing. So, it was all this initial process with the group, this exchange of information, and finally came to the work to be developed for the discipline" (Student 1).

> *Rival thinking 1*: The same dynamic took place in the group I led. We met *online*/synchronously to analyze activities and define how they would be carried out. And then we followed the performance through *WhatsApp*. At these times we also had informal conversations that brought us closer in a way.

> *Rival thinking 2*: In the case of this subject, the dynamics referred not only to the student-teacher relationship, but also to the student-student. In fact, it can be said that the teacher managed to instigate and expand the student-student relationship. This was certainly a facilitating aspect in the elaboration of the activities and the general understanding of the discipline.

The report of rival thoughts (*rival thinking* 1 and *rival thinking* 2) confirms our reflections, while duoethnographers in this study, about the TLPT being a methodology that provides a collaborative environment. We consider that form of activity is important to enable future research in teams and in a remote way (Matitz et al., 2021).

In our reflections, we identified situations of discomfort among students. Groups are an important TLPT strategy in the development of the discipline. The working groups were defined and modified by the teacher. However, we realized in our interactions that the choice of leaders by the teacher brought uncomfortable situations for some students throughout the course. This reflection is important to identify the disadvantages or failures of this type of dynamic and assess in the future whether it contributed positively or negatively. Although it was safer to avoid conflict, this feature of the TLPT helped to simulate real conflict situations in heterogeneous groups. In the specific case of the class, they were students from different lines of research and geographic-cultural origins.

Another point we highlighted was the application of the TLPT in the context of the discipline. Even if it was not explicit in the teaching plan, it was possible to notice – in an emergent way – that the parts or cuttings were worked separately and sewn together in the final work. The living experiences enabled a reflection on the method, even if the focus of the discipline was not didactic-pedagogical.

> *Student 1*: From the beginning, there was a methodology that led to the final product. That's how we interpreted it. Initially, she presented synthetically what she was going to do, and, throughout the course, she implemented the small pieces of the methodology, like a patchwork quilt that is gradually sewn together. So, I see that each element was presented, and it was only in the final paper that we discovered that for the final one, there was a need to know every part.

"For our teaching practice, we gained experiences and ideas to work the content, in a way that we had not seen before" (Student 2). This excerpt from our dialogue reveals how the experiences lived at the TLPT allowed us to produce a reflection on the practice of those who are experiencing the process. The method allows the doctoral student to make use of different cognitive tools, stimulating creativity, autonomy, innovation, and group work. Finally, it encourages the development of different skills: "The traditional methodology encourages the future professional to be a producer of knowledge, while the active methodology encourages constant creativity" (student 2).

At the last meeting, we also talked about student performance, and the teacher believes that "everyone learned something, not at the same level and in the same amount, but all came out capable of developing a minimally complete methodological description of the qualitative research. They were able to better understand the difference between qualitative and quantitative research." This was a perception of all of us authors who recognize that the different strategies adopted in conducting the discipline contributed to embracing different academic profiles.

The teacher also recognizes that her classroom format classes end up being more expository. In remote synchronous teaching, in turn, "exposure is lost largely because of the difficulty of keeping in touch with the expressions and reactions of students, in addition to, of course, maintaining attention and motivation for long periods." The application of the TLPT even made it possible to maintain a higher level of motivation on the part of the academics because, in addition to the objective of completing the course, there was also the motivation to collaborate with the group. Other positive points that we pointed out were the encouragement of the need to acquire prior knowledge and the possibility of student interaction in synchronous and remote asynchronous modes.

> ***Student 2***: We developed very close relationships and a lot of interaction with our colleagues, not only during class periods but especially outside of class periods. We talk, exchange doubts, and develop collaborative activities. I say this because it gives the impression that there is no possibility of developing collaborative and group activities in remote education. In education distance, we get the impression that you and the screen are always alone. But with this technological modality – remote synchronous teaching – it was a very interactive process.

> ***Student 1***: The existence of different factors at each moment turned me on. So, at each new moment of the collective synchronous classroom with the teacher's presence, I couldn't come fully prepared because I didn't know exactly what and how the activities would be. So, of course, you do the previous readings and activities, but I learned to let emerge what would happen during the lesson. And so, we molded and adapted to the reality of that moment.

This excerpts from our dialogue show that the method encourages flexibility and constant thinking among academics, preventing them from falling into a pedagogical routine such as that which occurs when classes are exclusive lectures or when traditional seminars are held. We realize that the TLPT presented a differential by including the element of surprise in classes and by instigating critical and innovative thinking. Even being mediated by remote technologies, the method proved to be provocative.

The professor points out that the application of TLPT, among other methodologies adopted in the program, has brought good results in the training of doctoral students: "Our

students who are going to do a doctoral stay** or a post-doctorate abroad show great performance compared to students from other national and international programs. So, we are sure that we are providing good methodological training." However, this good result does not generate comfort, quite the contrary. The search for innovation has been a constant, as the professor describes: "if you are going to take this same subject next semester, it will be totally different."

The analytical and synthetic reflections of the experiences of the living present were fundamental for us to understand the contributions and challenges established with the application of the TLPT. We understand that the flipped classroom strategy was fundamental as the basis for the applied approach. Just as we identified that the proposal of knowledge through patches, with the sewing of the whole in the final paper, stimulated the student to be active in the educational process and provided greater interactivity among academics. The experienced approach was widely accepted by academics and provided a reflection that went beyond the syllabus of the discipline, providing opportunities for both academic and professional rethinking.

Discussion

According to the forecasts and guidelines of international organizations, technological innovations are changing the way knowledge is being developed, acquired, and transmitted. Active methodologies can play a strategic role in doctoral programs, both in face-to-face and online modalities. The need for pedagogical innovation is not only a recommendation of international organizations but can be observed, especially, in the scarce specialized literature on teaching-learning methodologies in doctoral programs.

To contribute to the literature, this research, guided by the question of how a pedagogical proposal of an active methodology Teaching-Learning Patchwork Technique (TLPT) can contribute as a teaching strategy in doctoral programs, concluded that TLPT contributes to transforming the student into an active being in all stages of learning. In addition, the TLPT experience occurred under unprecedented conditions regarding the exclusivity of face-to-face modality in doctoral courses in the country. In an emergency, remote teaching was adopted. Thus, it was possible to experience and reflect not only on the application of an active methodology but also on the use of this teaching methodology in the online environment. And contrary to what one might expect initially, the experience proved to be an efficient way to stimulate collaborative, autonomous learning that positively contributes to students' future professional practices.

The description and analysis of the active methodology (TLTP) applied in doctoral education allowed us to demonstrate the importance of further studies focused on the subject. First, it increases the visibility of didactic-pedagogical practices at the highest level of teaching in the formal academic system in several countries. Secondly, it reveals the negative implications of maintaining and reproducing traditional teaching models precisely at the level of training researchers and teachers in higher education. And, at the same time, it reveals the possible advantages of using active methodologies at this level of training, especially when they serve as models for the practices of future teachers.

The reflection of the dialogue between the duoethnographers (teacher-student), triangulated by rival observations, made it possible to identify positive and negative points of the TLTP methodology. As the main positive point, we recognize its potential contribution to teaching that stimulates and explores creativity, autonomy, collaborative work, and the ideal

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** The **doctoral** stay is a study program in which postgraduate students carry out part of their study in Brazil and the other part at a university abroad.

assumption of protagonism for doctoral program students. As the main negative point, the use of collaborative strategies can generate resistance from students with less familiarity with active methodologies.

As we reflect on our dialogue, we have identified important theoretical contributions. One of them is the realization that people exposed to active methodologies during their academic formation (past) tend to replicate them in their role as teachers (present). In addition, teachers who work in educational institutions that promote and train for active learning tend to engage more with the use of active methodologies.

Methodologically, this study demonstrated an application of duoethnography in research related to active methodologies. The reflection of teacher-student dialogues, triangulated by observations of rival thoughts, allowed for a deep analysis of positive and negative experiences in the process. As strengths of duoethnography, we point out the possibility of obtaining a deep understanding of the interaction between teacher-student, allowing for a more detailed analysis of interpersonal relationships and learning processes. On the other hand, data interpretation can be subjective, depending on perspectives and interpretations, which can affect the objectivity of the obtained results.

We propose, as future research, to investigate the implementation of TLPT in master's and doctoral programs, both face-to-face and distance, in courses of different areas of knowledge and different disciplines; to analyze how active methodologies in academic formation contribute to the development of skills and competencies for active learning of future teachers; and to investigate the influence of educational institutions in the process of adopting active methodologies by teachers, to understand how institutional structure can affect the use of these pedagogical practices.

Initiatives like this reinforce the need for those responsible for educational policy at the doctoral level – especially in developing countries – to reflect on the possibilities of innovation in pedagogical practices. As pointed out by Ulla and Tarrayo (2021), universities need to take a critical commitment to the training of professionals and the updating of didactic-pedagogical strategies for the needs of doctoral students.

Conclusions

At the end of this article, we present some final reflections that we believe will help teachers and students in their teaching and learning processes. First, we believe that the text contributes both to the guidance and encouragement for other teachers to develop active methodological innovations in their teaching processes at the doctoral level. We have seen that active methodologies, such as TLTP, have a positive impact on doctoral courses, as these are people who typically have academic and professional experience. This point leads to our second reflection: students who already have professional experience in teaching have a positive acceptance of being inserted into active learning processes, leading them to replicate them in future teaching practices. And we believe that this is a potential value of active methodologies, in promoting a positive cycle in the educational process.

Another reflection we developed was on the method. We believe that duoethnography can be further explored in educational research processes, whether in-person or online. Duoethnography can contribute by allowing the voices of the teacher and students involved in the teaching and learning process to be heard, and by providing an understanding of the perspectives and practices of both groups. In addition, duoethnography allowed for a critical reflection on the power and hierarchy relationships present in the classroom, as well as the identification of successful pedagogical practices and challenges to be faced.

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