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ACTIVE METHODOLOGIES IN VOCATIONAL AND TECHNOLOGICAL EDUCATION - CONTRADICTIONS AND POSSIBILITIES

METODOLOGIAS ATIVAS NA EPT - CONTRADIÇÕES E POSSIBILIDADES

METODOLOGÍAS ACTIVAS EN LA ETP - CONTRADICCIONES Y POSIBILIDADES

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ABSTRACT

This study analyzes the contradictions and possibilities of active methodologies in light of critical pedagogies within Professional and Technological Education (EPT). The investigated problem refers to the tensions between the growing use of active methodologies and the theoretical-critical foundations that guide integrated education. The general objective was to examine the representations of pedagogical practices in the teaching plans of technical courses integrated into upper secondary education across three campuses of the Federal Institute of Paraná (IFPR) regarding the use of active methodologies, identifying the contradictions and possibilities that emerge in light of critical pedagogies. A total of 438 documents referring to 13 courses were analyzed. The qualitative research was conducted in two stages: a literature review, including authors from EPT, critical pedagogies, and active learning methodologies; and a documentary analysis of the Teaching and Faculty Work Plans (PTD) obtained from the Teaching and Work Plan Platform (PLANIF). The data were organized in an analytical matrix with categories defined a priori: Critical Pedagogies (CP), Non-Critical Pedagogies (NCP), and Active Methodologies (AM), and examined through Content Analysis (Bardin, 2016). The results indicate that although there is significant use of active methodologies, 77.6% of the plans align with non-critical approaches, revealing a certain contradiction between institutional discourse and declared practices. The findings reveal challenges related to teacher training and the persistence of an education oriented toward the market, while also indicating a movement toward breaking with the banking model of education.

Keywords: Active Methodologies. Critical Pedagogies. Non-Critical Pedagogies. Professional and Technological Education.

RESUMO

Este estudo analisa as contradições e possibilidades das metodologias ativas à luz das pedagogias críticas na Educação Profissional e Tecnológica (EPT). O problema investigado refere-se às tensões entre a crescente utilização das metodologias ativas e os fundamentos teórico-críticos que orientam o ensino integrado. O objetivo geral foi analisar as representações das práticas pedagógicas nos planos de ensino dos cursos técnicos

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integrados ao ensino médio de três campi do Instituto Federal do Paraná (IFPR) quanto ao uso das metodologias ativas, identificando as contradições e possibilidades que emergem à luz das pedagogias críticas. Foram analisados 438 documentos referentes a 13 cursos. A pesquisa, qualitativa, desenvolveu-se em duas etapas: revisão bibliográfica, contemplando autores da EPT, pedagogias críticas e das metodologias ativas; e análise documental dos Planos de Ensino e Trabalho Docente (PTD) obtidos na plataforma de Planos de Ensino e Trabalho (PLANIF). Os dados foram organizados em matriz analítica com categorias definidas a priori: Pedagogias Críticas (PC), Pedagogias Não Críticas (PNC) e Metodologias Ativas (MA), e examinados por meio da Análise de Conteúdo (Bardin, 2016). Os resultados indicam que, embora haja uso significativo de metodologias ativas, 77,6% dos planos alinham-se a abordagens não críticas, evidenciando certa contradição entre o discurso institucional e as práticas declaradas. Os achados revelam desafios relacionados à formação docente e à persistência de uma educação orientada pelo mercado, ao mesmo tempo em que apontam um movimento de ruptura com a educação bancária.

Palavras-chave: Metodologias Ativas. Pedagogias Críticas. Pedagogias Não Críticas. Educação Profissional e Tecnológica.

RESUMEN

Este estudio analiza las contradicciones y posibilidades de las metodologías activas a la luz de las pedagogías críticas en la Educación Profesional y Tecnológica (EPT). El problema investigado se refiere a las tensiones entre el creciente uso de las metodologías activas y los fundamentos teórico-críticos que orientan la educación integrada. El objetivo general fue analizar las representaciones de las prácticas pedagógicas en los planes de enseñanza de los cursos técnicos integrados a la educación secundaria de tres campus del Instituto Federal de Paraná (IFPR) en relación con el uso de metodologías activas, identificando las contradicciones y posibilidades que emergen a la luz de las pedagogías críticas. Se analizaron 438 documentos referentes a 13 cursos. La investigación, de enfoque cualitativo, se desarrolló en dos etapas: revisión bibliográfica, contemplando autores de la EPT, pedagogías críticas y metodologías activas; y análisis documental de los Planes de Enseñanza y Trabajo Docente (PTD) obtenidos en la plataforma de Planes de Enseñanza y Trabajo (PLANIF). Los datos fueron organizados en una matriz analítica con categorías definidas a priori: Pedagogías Críticas (PC), Pedagogías No Críticas (PNC) y Metodologías Activas (MA), y examinados por medio del Análisis de Contenido (Bardin, 2016). Los resultados indican que, aunque existe un uso significativo de metodologías activas, el 77,6% de los planes se alinean con enfoques no críticos, evidenciando cierta contradicción entre el discurso institucional y las prácticas declaradas. Los hallazgos revelan desafíos relacionados con la formación docente y la persistencia de una educación orientada al mercado, al mismo tiempo que señalan un movimiento de ruptura con la educación bancaria.

Palabras clave: Metodologías Activas. Pedagogías Críticas. Pedagogías No Críticas. Educación Profesional y Tecnológica.

1 INTRODUCTION

Contemporary technological and social transformations have directly impacted the educational field, requiring new forms of teaching organization and reconfigurations in pedagogical practices. In Professional and Technological Education (EFA), this scenario becomes even more challenging, since integrated training requires articulating scientific, technical, and sociopolitical knowledge to changes in the world of work and society.

In the context of Paraná, the Federal Institute of Paraná (IFPR) stands out as a public institution of reference, created by Law No. 11,892/2008 and currently present in 33 municipalities. Offering integrated technical courses, subsequent, undergraduate and graduate programs, its institutional mission is to articulate work, science and technology, aiming at the formation of critical, autonomous citizens able to work in different areas of the economy (Brasil, 2008).

The research focused on three *campuses*: Curitiba, Palmas and Umuarama, selected for presenting different socioeconomic realities, enabling the understanding of how pedagogical practices are configured in different contexts. This choice dialogues with the Institutional Development Plan (PDI 2024–2028), which guides the IFPR to strengthen the relationship between training and territorial development (Brasil, 2024).

Active methodologies have gained prominence as pedagogical alternatives that seek to expand student protagonism. However, as Rosenau, Strapasson, and Canziani (2023) point out, it is a polysemic concept, whose application can occur both through instrumental and technicist perspectives and through approaches aligned with ethical-political projects of integral education. Thus, the objective of this study was to analyze to what extent such methodologies, when present in teaching plans, are close to or distant from critical pedagogies.

Authors such as Saviani (2021), Frigotto (2015) and Libâneo (2022) emphasize that EFA must overcome the historical duality between manual and intellectual work, ensuring access to systematized knowledge and promoting the omnilateral training of students. Although active practices can contribute to more dynamic and interactive pedagogical relationships, their isolated use does not ensure an emancipatory perspective, especially in the face of the neoliberal trend of emptying the critical sense of autonomy and learning by competences.

In this sense, the analysis of the teaching plans of the integrated technical courses proved to be strategic to understand how teachers have incorporated diversified

methodologies and which pedagogical conceptions guide such practices. It was assumed that the simple adoption of active methodologies does not guarantee critical intentionality or overcoming passive practices, and it is essential to identify contradictions and possibilities of their use in the context of EFA.

In view of this, the central question that guided this study was: What representations of pedagogical practices are evidenced in the teaching plans of technical courses integrated with high school at IFPR regarding the use of active methodologies, considering the contradictions and possibilities that emerge in the light of critical pedagogies?

The research, of exploratory nature and qualitative approach, aimed to analyze the representations of pedagogical practices in the teaching plans of technical courses integrated to high school in three IFPR campuses regarding the use of active methodologies, identifying the contradictions and possibilities that emerge in the light of critical pedagogies. The methodological path included a bibliographic review on EFA, critical pedagogies and active methodologies, and documentary analysis of the available teaching plans.

The relevance of this research consists in evidencing how an institution guided by critical premises and comprehensiveness has materialized such principles in its planning and teaching practices. By analyzing the coherence between the educational project and what is carried out in the pedagogical routine, especially in the context of EFA, historically crossed by tensions, it is intended to foster reflection and broaden the debate on the use of diversified methodologies that are intentionally anchored in a critical perspective.

2 THEORETICAL FRAMEWORK

The theoretical framework of this study was organized around three fundamental axes: Professional and Technological Education (EPT), critical pedagogies and active methodologies. The first discusses the relationship between education and work, highlighting its historical challenges and the main concepts that underlie EFA. The second addresses critical pedagogies and their central characteristics, including the implications for teacher performance and training, as well as for teaching methodologies. Finally, the third axis deals with active methodologies, presenting their concept and their adoption in the context of EFA.

2.1 PROFESSIONAL AND TECHNOLOGICAL EDUCATION

The relationship between work and education is a central element in the understanding of human formation, being historically and socially inseparable (Saviani, 2007). In primitive

societies, learning took place through productive practice, so that work was a condition for existence and acquisition of knowledge. The separation between education and work, resulting from private property, marked a process of fragmentation that is perpetuated over time. In this context, the Professional and Technological Education (EPT) and the Integrated High School (EMI) offered by the Federal Institutes, seek to resume the unity between work, science, culture and technology, promoting the integral and critical formation of the subjects (Brasil, 2024).

In the Brazilian scenario, EFA has two main strands: the immediate one, aimed at insertion in the labor market, and the polytechnic one, aimed at the integral formation of the individual, integrating scientific, technological and cultural knowledge (Ciavatta, 2012). The Federal Institute of Paraná (IFPR), through its Institutional Development Plan (PDI 2024-2028), adopts the polytechnic perspective, emphasizing integrality, emancipation, and the omnilateral training of students (Brasil, 2024).

Historically, Professional and Technological Education in Brazil has undergone significant transformations. Its path begins with the Apprentice and Artificer Schools, marked by a welfare character and aimed at the popular classes. In the following decades, especially during the dictatorship, professionalization took on a compulsory and instrumental bias, reinforcing the duality between intellectual training and preparation for work. In the 1990s and early 2000s, educational reforms increased the fragmentation between general and technical education, making it difficult to integrate proposals (Frigotto, 2018).

This scenario began to change with Decree No. 5,154/2004, which rescued the possibility of integrated curricular organization, articulating theory and practice in the same formative trajectory. Subsequently, Law No. 11,892/2008 consolidated this movement by creating the Federal Institutes, triggering an educational project committed to omnilateral and socially referenced education. Thus, the historical evolution of EFA expresses the search for overcoming the structural duality that has historically marked Brazilian education, towards a critical and integrated education (Frigotto, 2018).

The concept of omnilaterality, central to the perspective of the IFPR, is based on the integral formation of the subject, capable of understanding reality in a broad and critical way, articulating theory and practice, science, culture, manual and intellectual work (Saviani, 2007; Neves, 2009 apud Brasil, 2024). The Integrated High School (EMI) in the IFs is premised on the consolidation of a unitary, polytechnic and omnilateral education, articulating high school and technical professional education in an integrated curriculum. Such a configuration seeks

to overcome historical fragmentation and favor the articulation between science, culture and work, promoting integral human development and the critical consciousness of students (Frigotto; Ciavatta; Ramos, 2012).

2.2 CRITICAL PEDAGOGIES

Critical pedagogies are based on the understanding that education is a historically situated social practice, capable of favoring the critical reading of reality and the transformative action of the subjects. For Freire (1987), teaching is a political act that awakens awareness and enables educators and students to perceive themselves as historical agents. Saviani (2021) reinforces this perspective by stating that critical pedagogy is guided by a counter-hegemonic project, which links educational work to social transformation.

In this sense, critical pedagogies propose a formative process committed to human emancipation, articulating theoretical rigor, mastery of knowledge and reflection on social conditions. The school is understood as a space for the appropriation of systematized knowledge and for questioning the current order, contributing to the formation of subjects capable of intervening in reality (Suhr, 2012). Thus, knowledge assumes centrality as a cultural and political instrument, and not as mere content to be memorized (Libâneo, 1999).

In the context of critical pedagogies, the teaching work acquires an eminently social, political and ethical character. Libâneo (2013) highlights that pedagogy, when investigating educational practice in its links with society, dialogues with different fields: Philosophy, History, Sociology, Psychology and Economics, evidencing the complexity imbricated in the teaching practice, "being a human activity necessary for the existence and functioning of all societies" (Libâneo, 2013, p. 17).

Freire (1996) emphasizes the ethical-political commitment of the teacher, pointing out that the act of teaching requires awareness of the ideological dimensions of education. Saviani (2021), in turn, highlights that it is up to the school to transmit historically accumulated knowledge intentionally, ensuring that new generations are able to understand and transform reality.

Thus, the teaching work, in this approach, requires theoretical mastery, social awareness and clarity of formative purpose. It is a practice that articulates knowledge, historicity, and educational project, breaking with technicist or adaptive views of the teaching function (Saviani, 2021).

The political, economic and social contexts directly reflect on the training and performance of teachers." The school is in close relationship with society, that is, each society creates the school it needs. Therefore, the school can be a factor of exclusion or social inclusion" (Suhr, 2012, p. 112). The non-critical pedagogies: traditional, escolanovista, and technicist, present different understandings of education, but share the central characteristic of the tendency to reproduce the dominant social order (Saviani, 2021).

Traditional pedagogy, consolidated in the nineteenth century, focuses the process on the teacher and content, conceiving the school as an instrument of social integration and discipline (Saviani, 2021). The New School, in reaction to this model, shifts the focus to the student, prioritizing methods, experiences and individual interests, a movement that, despite the democratic discourse, has little changed the structural inequalities of the system (Suhr, 2012). On the other hand, technicism, strengthened during the military dictatorship, reduces teaching to technical execution, in line with productivist demands and bureaucratic rationality (Libâneo, 1999).

Such approaches generated a historical split in teacher training, which is still present today: while graduates bring some pedagogical basis, teachers from technical areas often have gaps in pedagogical training, a fragility that especially affects EFA. Added to this are structural problems such as: precarious working conditions, discontinuity of policies and insufficient infrastructure, directly impacting teaching practice (Saviani, 2011).

Critical pedagogies, on the other hand, understand teacher training as a process that articulates theory and practice, scientific knowledge, political awareness and methodological domain. Education is conceived as a social practice that can both reproduce inequalities and contribute to overcoming them (Freire, 1996). Thus, the teacher needs to understand reality in its multiple dimensions and organize teaching in such a way that the knowledge produced historically is critically appropriated by the students (Saviani, 2021).

The discussion about teaching methodologies is intrinsically linked to pedagogical conceptions. In non-critical theories, education tends to be understood as a neutral instrument, capable of promoting the equalization of inequalities (Saviani, 2021).

In traditional pedagogy, the teacher is the center of the process and the student assumes a passive role, focused on memorization. The New School, by emphasizing student protagonism, shifts the focus from content to methods, proposing the idea of "learning by doing" (Suhr, 2012). Technicism, in turn, is aligned with an instrumental model, in which both

the teacher and the student become cogs in a system oriented by efficiency and productivity (Frigotto; Ciavatta, 2022).

Critical pedagogies, on the other hand, understand methodologies as political-pedagogical mediations. The method is not neutral, but expresses a project of education and society. Thus, teaching methodologies should favor the critical appropriation of knowledge, the problematization of reality, and the development of social awareness, in line with an emancipatory educational project (Saviani, 2021).

2.3 ACTIVE METHODOLOGIES

Active methodologies have been widely debated in the educational field and, more recently, stand out as an alternative to reorganize pedagogical practices in both face-to-face teaching and Distance Education. The conception adopted in this research is in line with the reflections of Pereira (2021), who proposes to understand them beyond the simple updating of traditional didactics. For the author, it is not just about putting the student in a more active position in the learning process; by suggesting the spelling "[...]active strategies", it expands the understanding of these strategies, highlighting dimensions such as collaboration, creativity, integration, participation and construction of meaning, essential to an education committed to criticality and social transformation.

This means that, before resorting to a repertoire of techniques or a pedagogical prescription, the teacher needs to understand what is the intentionality behind the chosen methodology and what its training objectives are. This requires a critical and contextualized analysis of each content in order to select the most appropriate approach. The active methodology must be applied coherently, ensuring that the interaction promoted between the subjects of the teaching-learning process is effectively significant (Rosenau; Strapasson; Canziani, 2023).

The discussion about active methodologies requires, therefore, attention to the disputes in the contemporary educational field. As Rosenau, Strapasson, and Canziani (2023) warn, liberal proposals have appropriated terms linked to critical pedagogies, producing confusion that can lead teachers to identify as "advanced" practices that, in reality, reinforce individualistic or technicist conceptions. When active methodologies are incorporated uncritically, especially under the influences of escolanovismo, there is a risk of minimizing the role of teachers and compromising the appropriation of historically

systematized knowledge. Thus, its adoption must be anchored in a dialectical relationship between theory and practice, where teacher and student are protagonists (Pereira, 2021).

From a conceptual point of view, active methodologies can be understood as teaching strategies designed to promote dynamic and collaborative practices, stimulating autonomy, creativity, and reflection (Bacich; Moran, 2018). They involve active participation in cognitively challenging activities, situated in real or simulated contexts, mobilizing processes such as interpretation, analysis, evaluation, and application of knowledge (Pereira, 2021).

From a critical perspective, as Libâneo (2022) and Pereira (2021) argue, the adoption of active methodologies can transform the classroom into a dynamic space in which the student is no longer passive and the teacher no longer acts as a mere transmitter of knowledge, assuming the roles of mediator, advisor and director, since he holds essential knowledge for the learning processes of the students. The following table presents the active methodologies and strategies identified in the plans investigated.

Table 1

Active methodologies present in the analyzed teaching plans

Active Methodology	Description
Debates and discussions	Activities in which students exchange opinions, defend divergent positions and build knowledge in a cooperative way. It requires prior preparation, definition of roles and clear rules, stimulating critical thinking and active participation (Libâneo, 2013; Bacich; Moran, 2018).
Seminars, Exhibition, Exhibition, Presentation	Activity in which students prepare and present content, promoting research, organization and debate. The public also participates with questions and observations, favoring collaborative learning, development of autonomy, and collective construction of knowledge (Scorsolini-Comin, 2023).
Practical (e.g. practical class)	Activities in which students carry out experiments, applications or experiences of the contents, actively participating in the learning process, building knowledge in a reflective way (Bacich; Moran, 2018).
Group work, teamwork	Activity in which students collaborate in solving problems and projects, sharing responsibilities and building knowledge collectively. It favors dialogue and cooperation (Bacich; Moran, 2018).
Research	Activity in which students investigate problems or questions and raise hypotheses. It promotes curiosity, reflection and dialogue with reality (Demo, 2003; Bacich; Moran, 2018).

Active Methodology	Description
Problem-solving / Problem-based learning	A strategy in which students investigate real or simulated problems, developing hypotheses, researching solutions, and discussing results in groups. It promotes autonomy, critical thinking, collaborative learning and practical application of content (Bacich; Moran, 2018).
Projects / Project-based learning	A strategy in which students develop projects or solve real problems, making individual and group decisions. It promotes interdisciplinary learning, critical and creative thinking, collaboration, production of products or solutions, and continuous reflection on the process (Bacich; Moran, 2018).
Case Studies	Approach that starts from the analysis of real or simulated situations or problems in a realistic way, so that students develop skills of investigation, reflection and problem solving (Bacich; Moran, 2018).
Flipped classroom	A strategy in which students study content in advance, accessing digital or face-to-face materials, and use class time for debates, problem solving, and practical activities. It promotes autonomy, collaboration and socialization with the teacher, acting as an advisor and organizer of the experiences (Bacich; Moran, 2018; Pereira, 2021).
Gamification	Strategy that uses game elements such as: points, avatars and narratives, in educational contexts, without the need to create a complete game. It allows students to be engaged, stimulates participation, motivation and interaction, applying playful principles to favor learning (Pereira, 2021 apud Fardo, 2013)
Round table	A strategy in which students discuss a previously defined theme, with the active participation of all, allowing different perspectives. It favors argumentation, critical listening and the development of communicative and reflective skills (Bacich; Moran, 2018).
Moot Jury	Students take on typical trial roles, analyzing real or fictitious cases, debating evidence, and presenting reasoned decisions. It promotes critical thinking, argumentation, and collaboration.
Workshop (miscellaneous)	Students participate in practical and guided activities, aimed at the development of specific skills, such as reading, writing or artistic production. It stimulates active learning, creativity and practical application of knowledge (Bacich; Moran, 2018).
Exploratory teaching	Approach that encourages students to investigate, experiment, and discover concepts through observation and practice. Develops curiosity, autonomy, critical thinking and scientific investigation skills (Bacich; Moran, 2018),

Source: Prepared by the authors (2025).

Therefore, active methodologies are flexible pedagogical support resources, which can vary according to the intentions of the teachers and the educational context. In the plans analyzed, it was identified that teachers use them as a strategy to organize teaching sequences that encourage student involvement, combining diversified approaches ranging from practical and cooperative activities to the use of motivational tools, such as music, videos and games. This can materialize in learning products, reflecting, creativity, innovation, retention and understanding of content, such as literary pieces, models, videos, presentations, concept maps, among others (Pereira, 2025).

Figure 1

Motivational Tools

Source: Pereira (2025).

Finally, it should be emphasized that there are no ready-made models for its application. The use of active methodologies implies careful planning, constant adjustments and commitment to teacher training. In EFA, it is in the daily work, permeated by contradictions, technical demands and socio-political dimensions, that the teacher must seek strategies capable of integrating theory and practice and promoting the critical and active participation of students (Rosenau; Strapasson; Canziani, 2023).

3 METHODOLOGY

This research was exploratory in nature, which according to Gil (2017) is adequate to deepen the understanding of phenomena that are still little studied, such as the representations of pedagogical practices present in the investigated teaching plans. The

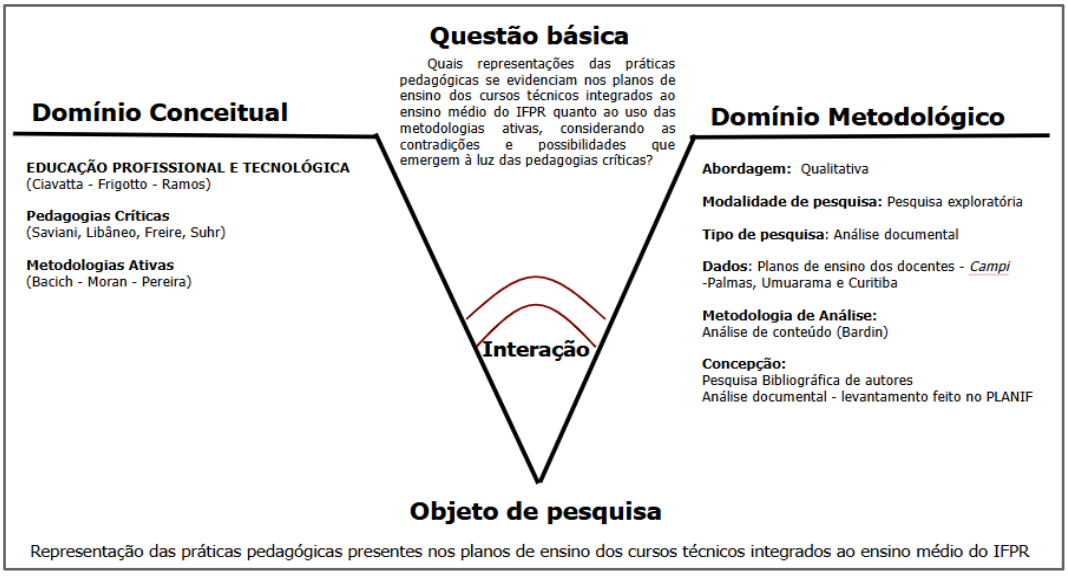
qualitative approach was adopted because it values the perspectives of the subjects of practice, in this case, the teachers, allowing us to understand their conceptions and the meanings attributed to the methodologies used. Thus, the qualitative analysis favored the identification of the meanings constructed in practice, as expressed in the teaching plans.

The methodological path was organized in two main stages: literature review and document analysis. The literature review enabled the construction of the conceptual tripod composed of: (a) Professional and Technological Education (EPT), supported by the references of Gaudêncio Frigotto, Maria Ciavatta and Marise Ramos; (b) Critical Pedagogies, based especially on Dermeval Saviani, José Carlos Libâneo, Paulo Freire and Inge Renate Frose Suhr; and (c) Active Methodologies, supported by the theoretical contributions of José Moran, Lilian Bacich and Máriam Trierveiler Pereira.

The survey was carried out on platforms such as SciELO and CAPES Journal Portal, as well as books, dissertations and digital materials, ensuring a solid theoretical foundation for the analysis. To support the organization of the methodological path, the Gowin diagram ("Gowin's V") was used, which articulates theoretical foundations, procedures and research objectives. This instrument allowed an integrated view of the stages of the investigation, as shown in Figure 2.

Figure 2

Planning of the Research.



Source: The authors (2025, adapted from Rosenau, 2017 from Novak and Gowin, 1983)

Gowin's "See" of knowledge is a heuristic instrument developed to assist in

understanding the structure of knowledge and the process of scientific construction (Novak and Gowin 1983). Rosenau (2017, adapted from Catapan, 2001), used this heuristic for research planning purposes, allowing us to visualize the articulation between theoretical foundations, methodological procedures and analytical processes.

The documentary research had as its main source the Teaching and Work Plans registered on the PLANIF Platform, referring to the technical courses integrated to high school at the Umuarama, Curitiba and Palmas campuses of the IFPR. Access to the system considered filters such as campus, course and year, adjusted according to the availability of documents.

Table 2

Plans collected from the PLANIF system

CAMPUS	YEAR	QUANTITY
Palmas	2023	46
Umuarama	2023	82
Curitiba	2024	310

Source: Prepared by the authors (2025).

In the selection of documents, it was decided to use the most recent plans available. However, the *Campuses* Palmas and Umuarama did not have published records for 2024, so the documents for 2023 were analyzed. To avoid redundancies, when the same professor taught more than one component using identical or very similar methodologies, his name was counted only once within each course. Specialized educational service plans were also excluded, in order to ensure greater precision in the representativeness of the pedagogical practices investigated. All selected documents were organized in an analytical matrix built in an electronic spreadsheet, prepared specifically for this purpose.

The data were analyzed through the Content Analysis proposed by Bardin (2016). The pre-analysis involved the floating reading of the planes organized in the analytical matrix, allowing the delimitation of the *corpus*. Then, the material was explored, deepening the concepts of critical and non-critical pedagogies and active methodologies. Subsequently, the data extracted from PLANIF were coded and categorized. The categories were defined *a priori*: Non-Critical Pedagogy (PNC), Critical Pedagogy (PC) and Active Methodologies (MA), with PNC and CP broken down into the subcategories Traditional, New School, Technicist, Liberating and Historical-Critical.

4 RESULTS AND DISCUSSIONS

The result of the data analysis is presented below, based on the conceptual categories defined in the methodology: Non-Critical Pedagogy (PNC), Critical Pedagogy (CP) and Active Methodologies (AM). The initial analysis focused on the first two categories, PNC and CP, which were broken down into the following subcategories:

Non-Critical Pedagogies: Traditional, New School and Technicist

Critical Pedagogies: Liberating and Historical-Critical

In the group of Non-Critical Pedagogies, the following indicators were identified:

- Traditional: emphasis on content transmission and memorization
- Technical: impersonality, search for efficiency and control, with a focus on operational objectives and reinforcements
- New School: valorization of "learning by doing" and the methods used.

In the Critical Pedagogies group, the following stood out:

- Liberating: selection of generating themes, problematization of reality and establishment of a dialogical relationship between teacher and student
- Historical-Critical: critical reading of reality, articulation between prior knowledge and elaborated knowledge, and historical-political understanding of the contents

The active methodologies and motivational tools present in the plans were initially generically grouped in a single column, and were later separated for a more detailed analysis. The interpretation of the data demanded constant returns to the *corpus*. First, the non-critical pedagogies of New School, Traditional and Technicist were analyzed; then, the critical pedagogies: liberating and historical-critical. The results revealed differences in the application of the methodologies: in the plans aligned with critical pedagogies, the strategies adopted favored dialogue, reflection and problematization of reality; In the non-critical planes, its use was often restricted to decontextualized dynamics, without explicit pedagogical objectives

In traditional practices, expository methodologies predominated, with active strategies employed only in a complementary way. In the escolanovista proposals, the focus on "learning by doing" was highlighted, in practical and collaborative activities. In technical practices, the emphasis was on efficiency, targeted execution and the development of specific skills. In turn, the liberating and historical-critical pedagogies presented practices based on

dialogue, problematization, collective work and critical reading of reality, mobilizing active methodologies as a means of promoting engagement and critical awareness among learners.

Table 3

Documentary analysis of the teaching plans of the integrated technical courses

Campus	**Integrated Technical Course in:**	**PNC**	**PC**
Palmas	Food	16	07
Palmas	Legal Services	14	09
Umuarama	Buildings	29	05
Umuarama	Informatics	20	04
Umuarama	Chemistry	18	06
Curitiba	Administration	30	09
Curitiba	Accounting	37	07
Curitiba	Electronics	32	08
Curitiba	Mechanics	32	13
Curitiba	Oil & Gas	32	10
Curitiba	Informatics	32	08
Curitiba	Photographic Processes	23	08
Curitiba	Digital Game Programming	25	04
Total		340	98

Source: Prepared by the authors (2025).

Of the thirteen courses analyzed, 438 teaching plans were considered, of which 340, corresponding to 77.6%, were classified as belonging to non-critical pedagogies, and 98 or 22.4%, as linked to critical pedagogies. With regard to the use of active methodologies, 86.07% of the plans associated with non-critical pedagogies and 100% of those linked to critical pedagogies incorporate active practices in their planning.

Figure 3

General results - Analysis Matrix

PNC	TOTAL	MA	FM	SEM MA/FM
TRADICIONAL	51	33	11	16
ESCOLANOVISTA	236	229	164	2
TECNICISTA	53	38	28	9
TOTAL GERAL	340	300	203	27
PC	TOTAL	MA	FM	SEM MA/FM
LIBERTADORA	35	34	31	0
HISTÓRICO-CRÍTICA	63	62	55	0
	98	96	86	0

Source: Prepared by the authors (2025).

The values presented in the MA and FM columns should not be interpreted as sums, since in several cases the same teaching plan simultaneously contained active methodologies and motivational tools. This overlap reveals the diversity of the pedagogical practices adopted. Within this panorama, it is observed that the plans classified as New School represent 53.9% of the total number of documents analyzed, surpassing the sum of the liberating critical and historical-critical subcategories.

In this sense, some considerations pertinent to the results should be highlighted, since the dichotomy of teaching techniques does not depend on the classification into New School, Traditional or Technicist currents; The real challenge is to reframe its application. "Any technique, therefore, understood as mediation, must be recognized within its limits and without the certainty that it is a guarantee of success in teaching and learning in the formation of broad human capacities" (Araújo; Frigotto, 2015, p. 72).

It can be said that the scope of active methodologies in the promotion of cooperation, autonomy and emancipation constitutes a set of complementary effects, whose effectiveness depends directly on the intentionality that guides the pedagogical process. Thus, such methodologies, often associated with a neoliberal logic, do not have an intrinsic or determined meaning, and can be appropriated by different political and pedagogical projects (Rosenau; Strapasson; Canziani, 2023).

Thus, it is important to remember that integrated education "[...] it requires criticism of reductionist perspectives of teaching, which are committed to developing some human activities to the detriment of others [...]" (Araújo; Frigotto, 2015, p. 63). In this sense, active methodologies can be resignified in order to promote learning in a critical scope and aligned

with the educational project proposed by the IFPR, which values the integral formation and emancipation of the subjects.

That said, in view of such findings raised in the analyzed plans, it is worth reflecting on important points that emerged as a result of the data analysis:

1. There is a movement against banking education in the IFPR courses analyzed.
2. Most teachers adopt diversified active strategies, materialized in active methodologies or motivational tools, or both.
3. It is noted that critical pedagogical practices are a reality among some teachers according to the numbers presented, however they are a minority as the numbers revealed.
4. The need to broaden the debate and reflection on the alignment with the critical assumptions of the institution and its materiality.
5. New studies that contemplate the investigation on the influence of the training of teachers who work in EFA and the impact on their educational guidelines.
6. The understanding that strategies such as active methodologies are complementary and not the core of the process.
7. The relevance of bringing provocative and controversial studies within the area of education, such as active methodologies in a critical context.

It is noteworthy that the classifications adopted have an analytical character, based on the predominant characteristics of each plane, without implying rigidity or exclusivity, since "they are not always mutually exclusive, nor are they able to capture all the richness of concrete practice" (Libâneo, 1999, p. 21). Thus, the predominant core of the methodologies described in each plan was considered for classification purposes.

5 CONCLUSION

The results indicate that 86.07% of the plans of the IFPR integrated technical courses analyzed incorporate diversified methodologies, including active methodologies and motivational tools. In qualitative terms, it is observed that most professors seek strategies that go beyond the mere transmission of content, favoring greater student participation. However, such strategies are not always aligned with the foundations of critical pedagogies, which can limit their formative potential. When applied intentionally and critically, active methodologies favor protagonism, cooperation, engagement, and meaningful learning, converging with the principles of Professional and Technological Education.

This finding shows that the technique, although necessary, has less relevance in the face of the pedagogical conception that guides the educational process, which is the determining factor for a practice capable of methodologically situating the critical formative project. This research, as a result, establishes a direct relationship with the finding of Araújo and Frigotto (2015, p.76) when they state that it is necessary to "consider different methodological possibilities for the experimentation of the integrated teaching project and we maintain that there is no single technique more appropriate for the implementation of integrated teaching, because to consider this possibility would be to succumb to a methodological determinism". This understanding reinforces that the focus of pedagogical work should not reside in the adoption of a specific technique, but in the coherence between the formative principles and the practices developed.

The findings reaffirm that the use of active methodologies, by itself, does not guarantee a critical and integral education, since no teaching technique automatically ensures the development of human capacities. As Araújo and Frigotto (2015) argue, techniques constitute mediations between teacher and student and remain subordinated to the ethical-political purposes that guide the educational work. Thus, the same strategy, whether directed study, lecture, debate, or any active or non-active procedure, can serve both hegemonic reproduction and human emancipation, depending on the formative project that guides it (Libâneo, 2022).

It is emphasized that the challenge that is imposed on EFA is not the adoption of an "ideal method", but the construction of practices that are aware of their limits and potentialities, capable of integrating different teaching procedures without succumbing to methodological determinism (Araújo; Frigotto, 2015). The results show that, although there is a consistent movement of overcoming banking education in the courses analyzed, this transformation occurs in a partial and asymmetrical way, marked by the predominance of non-critical practices. The methodological diversification identified in the plans demonstrates that most teachers seek to expand student engagement through active methodologies and motivational tools, even though such resources are not always linked to the critical formative purposes that underlie the IFPR's educational project.

It is verified that critical pedagogical practices are a reality among some teachers, but remain in the minority, which reinforces the need to deepen the institutional debate on the alignment between conceptions and practices. The findings also point to the urgency of studies that investigate the role of teacher training in EFA and its impact on methodological

choices, recognizing that strategies such as active methodologies are complementary and do not constitute the core of the educational process. In this sense, bringing to light provocative discussions and theoretical controversies, especially about the place of active methodologies in critical perspectives, becomes fundamental to sustain an integrated, intentional education committed to human emancipation.

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