IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN:2278-487X, p-ISSN: 2319-7668. Volume 26, Issue 8. Ser. 9 (August. 2024), PP 74-84
www.iosrjournals.org

The Relationship Between Active Methodologies As Teaching Strategies And Educators' Autonomy

Adna Rodrigues De Alencar[1], Argentina Mororó Castro[2], Danielle Taumaturgo Dias Soares[3], Fernanda Maria Diniz Da Silva[4], Fernângela Diniz Da Silva[5] Ilcimar Gomes Vieira Costa[6] Juvanildo Terra De Alencar Junior[7], Onete Raulino Da Costa[8], Rose Carla Cardoso Gomes E Silva[9], Rickardo Léo Ramos Gomes[10]

[1](Doctorate In Educational Sciences From Universidad Del Sol - Unades); [2](Master's Degree In Teaching, Specializing In The Teaching Of Human And Social Sciences, From The Graduate Program In Teaching - Posensino – Uern/Ufersa/Ifrn); [3](Master's Degree In Teaching, Specializing In The Teaching Of Human And Social Sciences, From The Graduate Program In Teaching - Posensino – Uern/Ufersa/Ifrn); [4](Ph.D. In Education From The Federal University Of Ceará); [5](Phd In Letters From The Federal University Of Ceará); [6](Specialization In Clinical And Institutional Psychopedagogy From The Vale Do Acaraú State University); [7](Doctorate In Educational Sciences From Universidad Del Sol - Unades); [8](Currently Pursuing A Doctorate In Education Sciences From Del Sol University (Unades); Https://Orcid.Org/0000-0002-1975-7009); [9](Specialization In School Management From The Vale Do Acaraú State University); [10](Doctorate In Biological Sciences - Ficl; Master's In Phytotechnics - Federal University Of Ceará)

Abstract

Background:

In the evolving landscape of education, there has been increasing recognition of the importance of teaching methodologies that not only enhance learning outcomes but also empower educators. Active methodologies, in particular, have gained prominence as tools that can significantly influence educators' autonomy and the overall effectiveness of the learning process.

Materials and Methods:

This article adopted a qualitative approach, using bibliographic research to explore the relationship between active methodologies and educator autonomy. The general objective is to demonstrate the direct relationship between these methodologies and teaching autonomy.

Results:

The research findings indicate that the benefits of active methodologies include transforming learning into a meaningful and effective experience. These approaches foster conceptual changes through student participation and engagement, promote comprehensive education by integrating and applying various active methods, and replace traditional teaching centered solely on lectures. Additionally, they facilitate knowledge generation and autonomous learning while motivating students to engage actively in their learning process.

Conclusion:

It is emphasized that, based on the key authors supporting the research, nineteen active methodologies were presented and substantiated. This action demonstrated the significant impact that active methodologies can have on students' learning.

Keywords: *Active Methodologies; Educator Autonomy; Teaching Strategies; Professional Development*

Date of Submission: 15-08-2024 Date of Acceptance: 25-08-2024

I. Introduction

Contemporary education faces significant challenges that demand the adoption of new pedagogical approaches, particularly regarding the role of the educator and student autonomy. In this context, active methodologies emerge as effective strategies that promote more engaged and participatory learning, allowing educators to become facilitators of the teaching process.

This article adopted a qualitative approach, using bibliographic research to explore the relationship between active methodologies and educator autonomy. The general objective is to demonstrate the direct relationship between these methodologies and teaching autonomy, while the specific objectives include discussing educational transformations and teaching autonomy, highlighting the importance of active methodologies for this autonomy, emphasizing the relevance of meeting spaces to foster it, commenting on professional development interventions that prioritize autonomy, and briefly explaining the main active methodologies.

Based on the authors who underpinned the research, nineteen active methodologies were presented and discussed, highlighting the significant impact these approaches can have on student learning. The article is organized into four sections: Introduction, which outlines the objectives of this research; Materials and Methods, which highlights the methodology employed for the bibliographic investigation; Theoretical Framework, which provides a content analysis involving more than thirty-six direct and indirect contributions; and finally, Conclusion, which indicates the fulfillment of the research objectives and suggests ideas for potential future research within the discussed theme.

II. Material And Methods

This research adopted a qualitative approach, utilizing bibliographic research procedures. Scientific journal articles that were both qualified and up-to-date, as well as other relevant scientific studies published between 2002 and 2024, were selected. These works addressed the relationship between active methodologies as teaching strategies and educator autonomy.

Regarding the qualitative approach, Sousa and Santos (2022, p. 03) assert that: "The qualitative approach is understood as a set of actions aimed at new discoveries and studies in a specific area, consisting of a methodological process of investigation that employs scientific procedures to find answers to a problem[1]."

The main authors who theoretically supported this research were: Baranauskas and Martins (2014), Campos and Gomes (2022), Bernardino and Santos (2023), and Link, Quadros, and Lopes (2024), who explored the relationships between active methodologies, autonomy, and continuous teacher training.

The bibliographic research was conducted using scientific databases such as Google Scholar, SciELO, and CAPES Journals, employing keywords such as "active methodologies," "teaching autonomy," "teaching strategies," and "teacher training."

The collected data were analyzed using the content analysis technique, seeking to identify the main themes, concepts, and relationships between active methodologies and educator autonomy, as proposed by Bardin (2011)[2]. The results were organized into sections of the scientific article and discussed in light of the adopted theoretical framework.

III. Literature Review

In education, active methodologies have gained prominence because they promote more engaged and participatory learning, placing the student at the center of the educational process. These strategies, which include games, simulations, and problem-based learning, focus not only on the transmission of information but also on helping students better understand and think critically. Active methodologies help create a dynamic and meaningful learning environment, as they encourage students to work together and interact. The following theoretical framework will discuss the most important concepts, advantages, and disadvantages related to the application of these methodologies in modern schools.

Educational Transformations and Teacher Autonomy

The concept of autonomy refers to an intrinsic process of confidence that enables the full development of individual potential. Although it is inherently a personal phenomenon, autonomy necessarily requires the presence of external agents who act as motivators and/or challengers, driving the individual's will to power and leading them to become an agent of transformation both personally and collectively. Therefore, autonomy is typically a social phenomenon and has been studied from various perspectives, such as psychological, social, feminist, educational, cultural, economic, among others.

However, Aguiar and Barguil (2024, p. 03) caution that:

Although widely advocated in pedagogical discourse and projects, the experience of teacher autonomy remains a highly controversial issue in educational practice. This is due, among other factors, to the contradictory agenda of the school institution, which simultaneously contributes both to social reproduction and the maintenance of the status quo, as well as to the development of a critical perspective on reality, thereby supporting its transformation[3].

From an educational standpoint, autonomy arises from the contributions of theorists such as Simón Rodríguez and Paulo Freire, who promoted popular education as a means of transforming society through the literacy of the oppressed, enabling them to know themselves and develop socially. In this perspective, autonomy refers to a process of transformation within the student.

However, considering that the educational process involves constant interaction between student and teacher, it is necessary to reflect on: Why foster teacher autonomy? In what sense is teacher autonomy discussed? What are the connections between autonomy and the art of teaching? How can one identify whether a teacher is immersed in a process of autonomy?[4]

Starting from the idea that, in the educational process, learning problems in a specific subject are linked to the actions of the participants in the educational system, particularly teachers, it is imperative to direct our

analyses toward didactic-pedagogical issues. This approach aims to contribute to the improvement of teaching practices by offering more effective didactic strategies, thus making knowledge more accessible. This highlights the need for both teachers and students, although within an educational system, to engage with knowledge more actively, with the goal of constructing fundamental concepts, transcending abstractions, procedures, and learning how to apply them.

Teacher autonomy is defined as a process experienced by the teacher/educator, in collaboration with their colleagues and researchers, that allows for the problematization of teaching practices, enabling the teacher to take ownership of their practice and, thereby, transform their reality. Despite the forces that influence their practices, every teacher who assumes a leadership role in their daily life finds in active methodologies a crucial learning strategy. This strategy often results from teachers' perceptions of what does or does not work with their classes[5].

This implies that teacher autonomy seeks to cultivate attitudes of leadership, critical inquiry, and mastery of the art of teaching, enabling innovations in pedagogical practice, making the teacher the protagonist and architect of their own reality. These studies promote a stance of leadership, confidence, and improvement in teaching practice, emphasizing the importance of teachers taking control of their own professional development.

Soares and Feuerschütte (2021, p. 04) argue that: "the leadership expressed by teachers in the academic environment refers to the set of skills demonstrated by those who continue to teach but whose influence extends beyond the school setting[6]." In aligning with this thought, we believe that it is precisely under these conditions that a teacher becomes an educator.

However, while these studies are valuable, they tend to focus on didactic-pedagogical transformation, overlooking contributions from social, epistemic, and cognitive perspectives. Therefore, it is understood that teacher autonomy must be analyzed in relation to the professional development of the educator, considering their empirical, popular, academic, and professional knowledge.

It is expected that, at a later stage, the teacher will reflect on the meanings and applications of their work. Ultimately, they should establish more strategies or tools that empower them to be agents of change, both in their personal life and environment. In other words, an educator who questions and analyzes the foundations and processes underpinning teaching knowledge, who recognizes diverse forms of reasoning and values learners' experiences, fostering the emergence of multiple contextualized rationalities and altering their relationship with the knowledge of their profession, is a professional engaged in a process of autonomy. This autonomy, in turn, implies a process of educational transformation, as it requires a shift in the teacher's attitude toward knowledge and practice, as well as the development of new capacities, skills, and competencies that make the teaching experience more rewarding[7].

It is often mistakenly believed that educational transformations are achieved through the quantity of content covered and the teaching methodology used. However, it is teacher autonomy that enables a deeper analysis of the teaching process, highlighting the significance of what is taught in relation to content and the development of the educator's creative and innovative capacity to change their reality through their own initiative. Santana and Masseana (2024, p. 15) remind us that:

Most teachers did not receive training focused on developing autonomy, exploring new teaching methodologies, or reflecting on and improving their practice. Therefore, it is necessary to invest in initial and continuing education courses that enable collaborative and reflective work among individuals. Additionally, strategies should be devised to enable teachers to investigate their own practice, develop their autonomy, and improve their pedagogical work[8].

Thus, it is argued here that teacher autonomy is a process experienced by the educator in collaboration with others, with the aim of understanding, accepting, and participating in an innovative approach centered on practices rather than abstract concepts. This autonomy is not something granted but rather a phenomenon produced through teacher reflection and consolidated in action and achievement, promoting the transformation of reality[8].

The Importance of Active Methodologies for Teacher Autonomy

The use of active methodologies by educators requires a prior process of training and investigation, which aids in the reflection, analysis, planning, and organization of educational activities. This is because, in many situations, teachers may not be aware of or implement active methodologies that could positively impact the quality of education and encourage students to construct knowledge through reflection, analysis, and creativity.

By employing active methodologies, there is an improvement in communication skills, development of competencies, interests, and meaningful learning, as well as knowledge construction, reorganization of routines, stimulation of situational critical thinking, and strengthening of teamwork and assertive decision-making, among other aspects. These effects are beneficial and have a significant impact on both educators and students, as both participate in a learning process. Active methodologies demand that teachers possess competence in designing and executing didactic-pedagogical situations.

In agreement with this discussion, Ayres and Cavalcanti (2020, p. 54) assert that: "To develop the complex range of skills required by future professionals, the implementation of active learning methodologies is appropriate, as they problematize real-world situations[9]."

To achieve this, it is essential to investigate students' prior knowledge, as this knowledge serves as a starting point for the educator to direct their pedagogical practice toward the desired learning outcomes. Next, it is necessary to promote understanding through classroom discussions, reciprocal teaching, and information organization, using some of the previously mentioned methodologies that foster the development of the ability to learn how to learn. Furthermore, it is crucial to develop competencies that involve skills, abilities, knowledge, and attitudes in a specific context.

According to Machado and Zanella (2023, p. 02): "The foundation of competence cannot be reduced to simplified knowledge distinct from skills, but rather presents itself as a necessity for the integration of disciplinary knowledge and skills for an interdisciplinary approach to different areas and their respective components[10]." This foundation is achieved through the application of active methodologies, which break with traditional paradigms in knowledge construction, incorporating participatory approaches from the beginning of the learning process, proposing contextualized problems, and identifying processes[11].

Active methodologies aim to develop individuals who are aware of their reality, capable of promoting social and personal transformations, seeking reconciliation between humanity and their immediate environment through dialogue and inclusion. Today, it is essential for educators to adopt these methodologies in their classrooms, encouraging student participation so that they take responsibility for thinking, dreaming, and creating conditions that allow them to play an active role in society. This implies that students become proactive in seeking solutions, valuing and connecting with their surroundings and their identity as citizens, as well as developing skills that ensure a better quality of life.

To achieve these goals, the contemporary educator must be a change agent, cultured, ethical, and up-to-date. In this context, teacher autonomy seeks to promote the development of teachers' creative and innovative potential, bringing problems, discussions, activities, and dynamics into the classroom that facilitate the learning process. This results from the educator's ability to identify and analyze the use and purpose of teaching knowledge, allowing them to take ownership of their practice and adapt to any changes proposed, whether through research or educational institutions.

Carmo and Abreu (2020, p. 05) assert that:

It is evident that the process of valuing teaching knowledge aligns with the construction and strengthening of their autonomy and professional identity, grounded in everyday experiences. These, consequently, express a know-how that cannot be disregarded. However, in this context, it is also necessary to consider that the present scenario is characterized by an emphasis on the technical rationality model, which aims to homogenize and regulate educational practices and their subjects, with productivity as its driving force, thereby revealing the intentions of neoliberal capitalism[12].

It should be noted that the process of teacher autonomy should not be interpreted as the assumption of power aimed at dominating, separating, or subjugating the student. On the contrary, it requires the educator to act as a generator and facilitator of knowledge, as well as an enhancer of students' skills; to possess autonomy in their pedagogical practice; assertiveness in their decisions, both individual and collective; to be open to learning, improving, or changing their perception in a democratic manner; to have access to information, resources, and various options for choice; and to be the protagonist of their own development, adopting strategies that best suit the context and specific situation[11].

Thus, active methodologies serve as a means to foster the autonomy of educators, even for those outside the field of education, as they seek to develop meaningful learning through constructive and innovative experiences created during occasional teaching practices.

Spaces for Interaction to Foster Teacher Autonomy

Spaces for teacher interaction are places or activities that allow educators to adopt reflective attitudes toward themselves, enabling them to understand how the environment (including experiences, regulations, and the educational system) influences them and, consequently, how this affects their practice and interactions with others (students, mentees, colleagues, or other professionals). This justifies the adoption of certain social practices.

In this context, it can be stated that the goal is to form, define, and transform a reflective teacher capable of continuously examining and reexamining their practical activity and, more importantly, themselves within the context of their professional practice. Furthermore, it is crucial to emphasize that the reasons for self-reflection are not limited to "external" and "impersonal" aspects, such as practical decisions made, behaviors observed in the classroom, or pedagogical knowledge acquired, but also involve more "internal" and "personal" aspects, such as attitudes, values, dispositions, and affective and emotional components[13].

On this topic, Tardif and Moscoso (2018, p. 04) express the following opinion:

[...] a professional cannot be content with merely following 'recipes' or 'applying' theoretical knowledge acquired prior to the action taken, as each professional situation they encounter is unique and requires reflection in and on the action, an action partly constructed by the professional who must make sense of it, precisely what Schön (1993) calls problem setting. Thus, professional experience and competencies contribute to managing practice and making it more autonomous[14].

In this way, the aim is for the teacher to transform their approach to their work, reflecting on what they do, how they do it, and why they do it. The objective is to promote self-questioning, interrogation, and investigation of their foundations, conditions, and motivations. To achieve this, public lectures on topics of collective interest, such as philosophy, epistemology, hermeneutics, and ontology, can be organized to establish epistemic foundations and provide a holistic and critical view of teaching.

Additionally, teachers can make notes about themselves, write and exchange anonymous letters, or engage in public (intended for all educators on motivating or general interest topics) or private (in the style of "secret friend") treatises that allow for mutual description and the exchange of advice on life experiences or other topics of interest. This discursive approach not only teaches grammatical, orthographic, and syntactic rules but also reveals personal practices, social behaviors, or political actions in which the individual deconstructs, constructs, and reconstructs themselves, possibly with the support of Information and Communication Technologies (ICTs).

Professional Development Interventions that Favor Teacher Autonomy

Studying the nature of teaching knowledge is essential for fostering teacher autonomy, as it involves deepening the questioning of what it means to teach, not to seek conditional elements or those that have led to personal or professional failure, but to develop in teachers the potential, skills, knowledge, expertise, and attitudes necessary to promote meaningful, creative, constructive, and innovative learning.

In this way, some obstacles related to teaching practice that generate resistance to change or the mechanization of old models are eliminated, operating as the teacher's subjective biases, which are reflected in their practice and in the way they conceive, produce, distribute, and consume scientific knowledge. It is argued that the intervention measure can be incorporated from the teacher's training, as indicated by Garcia, Aporta, and Denari (2019, p. 25): "[...] in continuing education, the teacher's own school environment, while a student at the time of training, should be observed to meet the particular aspirations of these teachers[15]."

Schuhmacher and Schuhmacher (2023, p. 7) mention Bachelard's (1996) study, stating:

When categorizing the epistemological obstacles that hinder scientific progress, Bachelard (1996) delves into educational issues, introducing the concept of the pedagogical obstacle, which constitutes a barrier to the student's appropriation of knowledge—obstacles that teachers face in their daily professional practice, manifested by conflicts and barriers that hinder the teaching and learning process[16].

This means that the teacher's interventions should help to recreate new ways of grasping knowledge, allowing for reflections in practice and involving students in their progress and setbacks. When the intervention process is developed from a constructivist perspective, the goal is to foster understanding, improvement, modification, and the awakening of creative capacity through discovery and experimentation, taking into account the prior knowledge of teachers and students. Therefore, a teacher must be able to coherently create and apply strategies that they deem appropriate to invigorate the educational process and address their daily classroom routine, enabling them to understand and meet the fundamentals of teaching in relation to the "what," "how," and "why" of teaching, responding according to the teacher's political, pedagogical, and epistemological conception.

Main Active Methodologies

Active methodologies are understood as the methods, techniques, and strategies that educators use to transform the teaching process into activities that encourage active student participation and promote learning. Active methodologies involve collaborative work between teachers and students or among students themselves, with or without the use of support materials, aiming to achieve a deep understanding of the content based on real learning situations that seek to develop action-oriented competencies and objectives[17].

For the implementation of active methodologies, three components are necessary: a setting, which consists of the location where the class takes place—it does not necessarily need to be a classroom and can include spaces such as surgical centers, fields, or companies; the actors, referring to the participants in the educational process, including teachers, students, and other members of the school community; and, finally, a reality to be faced, which involves a problem or characteristic to be evaluated, critiqued, or analyzed based on guidelines provided by the teacher or contained in the curriculum.

Educators are encouraged to select the most appropriate active methodology, as it is crucial to consider its usefulness, that is, to understand its purpose or what is intended to be achieved with this tool, which implies keeping learning objectives in mind. After this selection, educators should then develop the most appropriate

strategies that are relevant to the objectives, the theme, the situation, or the reality to be analyzed, ensuring that these approaches are innovative, as this is the essence of active methodologies. It is important to note that there are various active methodologies, each with distinct characteristics that teachers use to cultivate specific competencies, which are constantly re-evaluated[17]. Below are comments on some active methodologies widely applied in various educational settings.

Case Analysis

This methodology assesses real situations, assisting in decision-making and the development of critical thinking. For its implementation, it is necessary to select cases that are pertinent and compatible with the student's prior knowledge, conduct a general approach to analyze key facts and context, and promote reading and understanding to generate solution proposals.

As Soares et al. (2022) state, problematization methodologies favor the development of critical thinking and the connection with the prior knowledge that students have on a given topic to be addressed in the classroom[18]. The Case Analysis methodology is an active teaching approach based on problematizing everyday situations, forcing students to make decisions based on conclusions drawn from partial information, ideologies, and accumulated knowledge up to that point[18].

Illustration Analysis

This approach involves using images as a learning tool in the classroom. It is especially useful when a physical object for study is not available and can be applied at the beginning of a new unit or topic, as well as at the conclusion, serving as a synthesis of the content. For its implementation, the teacher presents the image, the students observe it and formulate questions, while the teacher responds and explains the illustrations. Mata et al. (2020, p. 03) highlight that:

One way of communication and transfer of what has been learned, that is, teaching what one knows, is done through the use of images. Images can serve instructional functions as educational resources to be used by teachers as a means to enhance the teaching and learning process, as they can be more attractive and dynamic, aiming to meet the expectations of students who, today, live in a media society[19].

Images can be categorized into: Descriptive (to clarify complex concepts), Expressive (to explore values and emotions), Constructional (to detail parts or elements), Functional (to illustrate relationships between objects or systems), and Algorithmic (to demonstrate steps or components).

Analogy

This technique involves using similarities to evaluate a topic. The process includes: Design of the Analogue (where it is essential to define the characteristics of the object of study, conduct a projective exploration, and anticipate possible difficulties), Comparison of the Analogue (which involves the presentation of the topic, characterization, comparison, and identification of limitations), and Evaluation (which consists of presenting relationships, correcting the analogue, and identifying learnings and difficulties in the process).

Almeida and Diniz (2020, p. 06) share the following understanding:

Teaching with analogies can be associated with teacher training as reflective practitioners. This is because several teaching strategies with analogies, such as the FAR guide (Focus-Action-Reflection), present the concept of reflection as one of the essential components for the proper use of the resource[20].

Team-Based Learning/Collaborative Work/Cooperative Learning

Cooperative learning is an educational philosophy that stems from an educational practice where students participate in small group activities and share knowledge with each other. This knowledge is composed of resources, opinions, and ideas that are distinguished by their positive interdependence qualities. Cooperative learning can be used in a variety of educational situations and at various levels of education, from preschool to graduate school, regardless of the specific discipline or curriculum plan[21].

Campos and Gomes (2022, p. 10) state that "Cooperation is a highly necessary factor for promoting cognitive growth and will result in the understanding that when learners work cooperatively, everyone can achieve the common goal[21]."

Inquiry-Based Learning

"Inquiry-based learning" goes beyond the mere reproduction of predefined content and the results obtained from internet searches, focusing on conducting scientific research rather than simply reviewing what has already been learned. This approach differs from the conventional methodology of dealing with curriculum topics.

It is widely recognized that the knowledge acquired during the learning process should not be viewed as an absolute truth; each individual has a spontaneous understanding of a particular subject, in contrast to the

"scholarly" explanation of a scientist or a dictionary, for example. Therefore, both learning and the way of conceiving learning are primarily focused on the questions that precede knowledge[22]. Any teaching or learning method through inquiry should provide opportunities to explore the perceived reality, even if informally.

Problem-Based Learning

This method begins with a problem presented by the teacher, allowing students to seek solutions and develop various competencies. The central premise is that students learn by investigating the nature of everyday phenomena and activities.

Carvalho et al. (2020, p. 03) in their studies recognize that: "This method allows students to investigate, analyze, debate, and propose solutions relevant to professional practice [...] through collaborative work. Today, PBL serves as an inseparable axis of theoretical learning, promoting interdisciplinarity and comprehensiveness in student training[23]."

This process includes: the presentation of the problem and the necessary conditions for its resolution, the identification of the students' needs to solve the problem, data and information collection, and the formulation of solutions or action proposals.

Project-Based Learning

This methodology allows for the acquisition of knowledge and skills through the development of projects conducted in real-world scenarios or situations related to student training. It serves to develop problem-solving skills, teamwork, and critical thinking.

Oliveira, Siqueira, and Romão (2020, p. 20) observe that:

Project-Based Learning is a teaching method that seeks to teach curriculum content using real and meaningful situations for students, with them working cooperatively, developing a final product as a result of their studies and efforts. Thus, the essential skills and competencies for the challenges of the 21st century, such as creativity, teamwork, problem-solving, and critical thinking, are developed[24].

Project-based learning encompasses three phases: Initiation (which involves naming the project, setting objectives, a schedule, a mentoring system, and an assessment format or defining learning pathways), Design and Implementation (which includes problem diagnosis, objective definition, strategies, actions, and expected outcomes), and Final Phase (which consists of result evaluation and functions).

Learning in Simulated Environments

This technique recreates aspects of everyday life in a controlled and supervised manner, where mistakes are seen as learning opportunities. This approach is effective in developing problem-solving skills, learning procedures and social interaction techniques, and reinforcing the limitations of traditional methods.

França (2016, p. 08) states that: "In the simulated environment, one of the challenges is to motivate users to explore their knowledge as well as acquire new knowledge to meet the challenges that will be presented[25]." For its implementation, it is necessary to observe the context, intervene in the representation, determine the consequences of actions, and specify the physical forms of representation.

Service Learning

This approach proposes a real-world engagement through the provision of a service to meet community needs. It is used to understand the context, integrate disciplinary learning, generate creative solutions, mobilize activities and/or personal and institutional resources, and foster the exchange of experiences and the development of capacities. Castro and García (2021, p. 15) emphasize that:

The pedagogical approach of service learning, from its more critical perspective, undoubtedly opens a powerful avenue to address both teacher training and improve the here and now, contributing to the development of transformative processes that enable the construction of more democratic, just, equitable, and supportive contexts[26].

Service learning acts as a bridge between various disciplines in sequential courses, enabling the creation of a continuous project across subjects that remains viable over time. The use of service learning is also intentional and meaningful in this context, as this type of contextual proposal aims to break down the barriers between the University and society[26].

Peer Learning

This methodology aims to share knowledge, generating contrasts and dynamism in learning about a particular topic. It requires stimuli for reading, collaborative activities, and the resolution of quantitative problems, allowing for effective management of time and available resources. According to Lima (2024, p. 05),

Peer learning encourages students to engage, commit, and stay attentive during the lecture, as the activity will require them to possess the knowledge necessary to discuss with their peers when applying the questionnaires,

which must involve all students in the classroom, unlike methodologies where only a few students engage or ask questions[27].

For its implementation, it is necessary to: formulate questions at the beginning that relate to the content, analyze these questions within a maximum of 2 minutes, generate an individual response, and promote peer discussion for a maximum of 4 minutes, followed by a review of the answers to observe how students work and to generate explanations that contrast previous knowledge with new knowledge, in addition to linking the current lesson with the next one.

Lectures

This methodology aims to facilitate the understanding of the topics covered during a class. It promotes the use of technical language and provides essential, concise, and relevant information. Lectures consist of two stages: the superstructure, which includes the beginning, development, and conclusion, and the macrostructure, which involves recognizing the general content, understanding the theme, identifying the main ideas, synthesizing the content, clarifying the objectives, highlighting relevance to the student's education, and identifying aspects that must be mastered by the student.

Bernardino and Santos (2023, p. 06) clarify that:

Given the characteristics of the lecture method, this type of teaching approach, among many other objectives, aims to share fundamental knowledge, provide an overview of specific content, establish a foundation for learning, and thus clarify doubts and questions that students may have[28].

For its effectiveness, it is crucial to evoke prior knowledge, refer to experiences or knowledge familiar to all, formulate key questions, and verbally articulate what is known.

Flipped Classroom

This pedagogical model alters the traditional classroom structure, where content is prepared by the student autonomously at home before each class through a series of activities (such as essays, questionnaires, presentations, among others) provided by the teacher. In this way, the student has the freedom to choose the type of material that best suits their learning style and can progress at their own pace, building their knowledge through the search and synthesis of information, integrating it with communication, research, critical thinking, and problem-solving skills.

Silva, Vasconcelos, and Moura (2021, p. 541) report that "[...] the flipped classroom methodology was proposed by Eric Mazur in the 1990s as an approach to bridge the gaps between the traditional teaching model and contemporary society connected to technologies[29]."

The student must appropriate the information and transform it into meaningful and applicable knowledge, assuming, in some situations, the role of a collaborator and, in others, that of an expert. In a class that adopts this approach, the first minutes after the home study are dedicated to a discussion of the studied content, where students present their questions, and the teacher interacts with the class until a resolution is reached. Subsequently, activities are proposed that can be carried out either in the classroom or in the laboratory, possibly including problem-solving or other activities related to the content[30].

At the beginning of the class, the teacher formulates specific questions to guide learning, facilitating the understanding of content (by synthesizing and solving problems). During the class, students participate and collaborate in groups in the execution of practical activities proposed by the teacher. They interact with each other and provide mutual support, promoting active, participative, autonomous, communicative, and collaborative learning. After the class, students continue to apply the acquired knowledge, following the teacher's guidance.

Debate

The objective of this practice is for students to confront different points of view on a topic through structured discussion. This activity helps develop argumentation skills, explore unfamiliar topics, and enhance public speaking skills. Link, Quadros, and Lopes (2024, p. 03) assert that:

By mastering the technique of debate, teachers can more effectively retextualize content, as this practice stimulates the critical analysis of various perspectives and arguments. This skill is essential for retextualization, as it enables students to reformulate and adapt texts with greater knowledge and accuracy. Moreover, debate allows for the critical discussion of different viewpoints, which is crucial for improving writing and argumentation skills[31].

To conduct a debate, it is important to: define a topic, seek information from reliable sources, provide supporting materials, divide the class into two groups (pro and con), establish rules, roles, times, and turns, define the argumentation or stance, and organize the group internally by assigning functions and responsibilities. The debate is structured in five stages: introduction, argumentation, interval, counterargument, and conclusions.

Design Thinking/Creative Problem Solving

This methodology focuses on the creative and collaborative resolution of problems. The identification of requirements, design, and interaction of solutions are all components of this approach. It relies on identifying issues and demands, as well as seeking ways to support effective and applicable solutions. The primary goal is to develop students' logical and critical thinking.

Basic predispositions from the socioconstructivist perspective are applied, such as: "the motivation to explore new territories, openness to new ideas and proposals, creative thinking, and a set of metacognitive skills"[32].

Additionally, students develop self-learning skills and teamwork competencies, such as empathy, assertive communication, and knowledge sharing. Design Thinking enables students to create appropriate responses and solutions to problems. This framework includes steps like problem planning, definition, design, prototyping, and evaluation.

Question-Based Learning

This method promotes critical thinking and assesses learning. Besides considerations like time, writing, and technical language, it encompasses the definition of objectives and questions to assess students' knowledge or reflective and critical ability; the identification of key moments for developing essential questions (Introduction, Development, and Conclusion); and the formulation of questions that consider interest, attention, and the authenticity of real-world problems.

Question-based learning emphasizes the importance of the student's role in the learning process, encouraging active engagement with an idea or topic, rather than passive listening to the teacher[33].

Gamification/Game-Based Learning

This approach uses game mechanics to reward specific actions, aiming to consolidate knowledge, enhance skills, and develop competencies. As an educational strategy, games help students internalize knowledge in a playful manner and address problems such as demotivation and lack of attention. Gamification employs methods to reward individuals for achieved goals, such as accumulating points, advancing levels, earning prizes, rewards, rankings, challenges, missions, or tasks.

Rocha and Cabral Neto (2022, p. 03) clarify that:

The main objective of gamification is to encourage non-game system users to adopt player behavior. To this end, their engagement occurs at an emotional level, aiming to motivate them, not just entertain or compensate them as in video games and reward programs[34].

Additionally, it uses dynamic techniques to motivate users to achieve their goals through rewards, status, achievement, and competition. Thus, certain mechanical techniques should be explored more than others, depending on the desired dynamic. Gamification involves applying metrics, goals, and rewards to achieve educational objectives.

Role Playing

This is an active method that applies knowledge in real-world situations. The process is divided into three stages: 1. Design and Planning: At this stage, the objectives, concepts, and instructions to be followed are defined. 2. Execution: This includes structuring and assigning roles, specifying the procedure, time, and rotation, as well as defining the teacher's role. 3. Evaluation: It involves adjusted grading, detailed feedback, and evaluations based on the roles played. Role-playing is a learning methodology that uses guided reflections and everyday personal situations (simulations) in an educational context, that is, in a relatively controlled environment[35].

As it aims to improve different types of interpersonal relationships and develop effective communication skills, this approach is applicable in the fields of healthcare, education, and business.

Graphic Organizers

By using these visual resources, content is organized in a clear and accessible manner. It is common for these resources to be applied at the end of a class or unit, with the central concept positioned at the center or top, from which a list of concepts derives, establishing relationships at different levels and degrees.

Estrela et al. (2022) state that this active method is valuable and meaningful for promoting learning, especially because it allows students to quickly grasp the connections between various concepts, data, and ideas, which would be extremely difficult to assimilate solely through oral communication or reading. Additionally, this approach enables students to interact more with the information, giving them greater control over their learning[36].

Concept maps (which help define relationships and hierarchize concepts), mind maps (which facilitate the visualization of ideas and the combination of resources), and argument maps (which visually organize a discussion) are examples of this type of resource.

One Minute Paper

Regarding this active methodology, Silva Filho and Lopes (2018, p. 16) state that,

Although the text is an important means for students to assess their learning, the teacher will not evaluate it. For this reflection, it is not essential to provide content or information about the studied subject; the focus should be on how the discipline impacted the student's human and mental development[4].

This technique can be applied at the end or middle of a school term, especially at the conclusion of a class, allowing the collection of information, knowledge assessment, classroom environment improvement, brief surveys, or evaluation of the impact of different activities, with the goal of improving planning and organizing work strategies. It is noteworthy that to implement this approach, it is necessary to define an objective, formulate at most two questions, ensure the activity is anonymous, and give students 1 to 5 minutes to write their responses on a sheet.

The benefits of active methodologies include transforming learning into a meaningful and effective experience. These approaches promote conceptual changes through student participation and engagement. They foster holistic education by integrating and applying various active methods. Moreover, they eliminate traditional teaching centered solely on lectures, facilitating knowledge generation and autonomous learning. They also stimulate students' motivation to engage in their own learning process.

However, there are some challenges associated with these methodologies, such as the demand for an intense class pace by the teacher, difficulty in covering the entire curriculum content, students' resistance to active methodologies, especially at the beginning, the need to reformulate the traditional evaluation model, and the possibility of disorganization, indiscipline, and time waste when instructions are unclear and not properly implemented. When implementing active methodologies in a classroom, it is essential to follow these steps: evaluate the program to be taught, considering its relevance, challenges, goal achievement, and difficulties. Develop strategies to better understand the students. Create an innovation proposal that aligns with the learning objectives.

IV. Conclusion

The objective of this work was to demonstrate how active methodologies are linked to educators' autonomy. Throughout the text, changes in education and teachers' autonomy were discussed, highlighting the importance of active methodologies as tools to provide teachers with greater autonomy.

Furthermore, it was emphasized that meeting spaces are essential for promoting educators' autonomy and for supporting professional development interventions that prioritize this autonomy. Based on the main authors who supported the research, nineteen active methodologies were presented and substantiated. This action demonstrated the significant impact that active methodologies can have on students' learning.

The intention of the research is to serve as a high-quality scientific reference for other researchers working on this subject, contributing to advancing the understanding of the topic at hand. It is proposed that future investigations explore how active methodologies can be applied in various educational contexts, examining how these methodologies help educators in their continuous development and assessing how effectively they assist students in becoming self-sufficient in diverse learning environments.

References

[1]. Sousa, J. R. De, & Santos, S. C. M. Dos. (2020). Content Analysis In Qualitative Research: A Way Of Thinking And Doing. Pesquisa E Debate Em Educação, 10(2), 1396-1416. Issn: 2237-9444. Https://Doi.Org/10.34019/2237-9444.2020.V10.31559.

[2]. Bardin, L. (2011). Content Analysis. São Paulo: Edições 70.

[3]. Aguiar, D. C. V., & Barguil, P. M. (2024). Autonomy And Teaching In The School Routine Of Sobral: Effects Of Accountability. Estudos Em Avaliação Educacional, 35, Article E10373. Https://Doi.Org/10.18222/Eae.V35.10373.

[4]. Silva Filho, A. L. Da, & Lopes, F. M. N. (2018). The Paradox Of Brazilian Education: An Antagonistic Relationship Between The Principle Of Reality And The Principle Of Performance. Revista Diálogo Educacional, 18(59), 1022-1040. Issn: 1981-416x. Https://Doi.Org/10.7213/1981-416x.18.059.Ds02.

[5]. Mayer, L. F., & Koerne, R. M. (2022). Pedagogical Practices And Teacher Autonomy In The Context Of Elite Bilingual Education. Educação E Pesquisa, 48, Article E246542. Https://Doi.Org/10.1590/S1678-4634202248246542por.

[6]. Soares, G. L., & Feuerschütte, S. G. (2021). The Expression Of Leadership In Teaching Practice: A Study With University Professors Of Administration Courses. Gestão Universitária Na América Latina - Gual, 14(1). Issn: 1983-4535. Https://Doi.Org/10.5007/1983-4535.2021.E73094.

[7]. Tardif, M. (2002). Teaching Knowledge And Teacher Training (F. Pereira, Trans.). Petrópolis: Vozes. (Original Work Published 2002). Isbn-10: 8532626688.

[8]. Santana, K. De S., & Masseana, E. P. (2024). Teaching Autonomy: What Is Researched In Science Teaching. Actio, 9(1), 1-22.

[9]. Ayres, R. M. S. De M., & Cavalcanti, M. F. R. (2020). Competencies Development And Active Methodologies: The Perception Of Business Management Students. Administração: Ensino E Pesquisa, 21(1), 52-91. Https://Doi.Org/10.13058/Raep.2020.V21n1.1668.

[10]. Machado, C. R., & Zanella, D. C. (2023). The Concept Of Competence And Its Insertion In Education. Thaumazein, 16(32), 83-96. Https://Doi.Org/10.37782/Thaumazein.V16i32.4755.

[11]. Chan, C. K. Y., Fong, E. T. Y., Luk, L. Y. Y., & Ho, R. (2017). A Review Of Literature On Challenges In The Development And Implementation Of Generic Competencies In Higher Education Curriculum. International Journal Of Educational Development, 57, 1-10. Https://Doi.Org/10.1016/J.Ijedudev.2017.08.010.

[12]. Carmo, N. P. Do, & Abreu, W. F. De. (2020). Knowledge And Teaching Autonomy: A Dialogue Between Comprehensive Elements For Teacher Training. Margens - Revista Interdisciplinar, 14(23), 25-41. Https://Doi.Org/10.18542/Mri.V14i23.5778.

[13]. Sánchez-Tarazaga, L. (2016). The Frameworks Of Teaching Competencies: Contribution To Their Study From European Educational Policy. Journal Of Supranational Policies Of Education, 5, 44-67.

[14]. Tardif, M., & Moscoso, J. N. (2018). The Notion Of The Reflective Professional In Education: Current Status, Uses, And Limits. Cadernos De Pesquisa, 48(168), Apr-Jun, 2018. Issn: 1980-5314. Https://Doi.Org/10.1590/198053145271.

[15]. Garcia, R., Aporta, A. P., & Denari, F. E. (2019). Teacher Training And Computational Technologies: A Literature Review. Ambiente: Gestão E Desenvolvimento, 12(3), 33-45. Https://Doi.Org/10.24979/346.

[16]. Schuhmacher, V. R. N., & Schuhmacher, E. (2023). Digital Technology In Higher Education: How Do We Overcome Obstacles? Revista Exitus, 13(1), Article E023022. Https://Doi.Org/10.24065/2237-9460.2023v13n1id2205.

[17]. Rocha, J. (2020). Active Methodologies: The Key To School Change And Their Application In Times Of Pandemic. Innova Research Journal, 5(3), 2.

[18]. Soares, J. R., Et Al. (2022). Problematization Methodology With The Maguerez Arch: Teachers' Knowledge In Municipal Schools In Palmeiras Das Missões/Rs. Tear: Revista De Educação, Ciência E Tecnologia, 11(1). Issn: 2238-8079. Https://Doi.Org/10.35819/Tear.V11.N1.A5836.

[19]. Mata, M. S. Da, Xavier, A. F. Da S., Sondermann, D. V. C., & De Almeida, M. Das G. (2020). The Use Of Images In The Teaching-Learning Process: Reflections On A Media Resource From A Distance Learning Course. Domínios Da Imagem, 14(27), 292-316. Https://Doi.Org/10.5433/2237-9126.2020v14n27p292.

[20]. Almeida, H. A. De, & Diniz, R. E. Da S. (2020). Becoming Aware Of The Use Of Spontaneous Analogies: The Contributions Of Continuing Education Developed With Science Teachers. Ciência E Educação (Bauru, 26). Https://Doi.Org/10.1590/1516-731320200067.

[21]. Campos, S. D., & Gomes, R. L. R. (2022). The Importance Of Cooperative Learning As An Educational Philosophy. Revista Atlante: Cuadernos De Educación Y Desarrollo, 14(8), 33-47. Https://Doi.Org/10.51896/Atlante/Ahzg4752.

[22]. Baranauskas, M. C. C., & Martins, M. C. (2014). Inquiry-Based Learning: The Methodology. In J. A. Valente, M. C. C. Baranauskas, & M. C. Martins (Eds.), Inquiry-Based Learning (Abinv) (Pp. Xx-Xx). Unicamp/Nied.

[23]. Carvalho, M. W. Dos S., Et Al. (2020). Problem-Based Learning As A Teaching Method In Medical Education. Revista Docência Do Ensino Superior, 10, Article E019801. Https://Doi.Org/10.35699/2237-5864.2020.19801.

[24]. Oliveira, S. L. De, Siqueira, A. F., & Romão, E. C. (2020). Project-Based Learning In Math Teaching: A Comparative Study Between Teaching Methods. Bolema, 34(67), 764-785. Https://Doi.Org/10.1590/1980-4415v34n67a20.

[25]. França, D. T. (2016). An Intelligent System For Simulated Environments In Information Security Training (Master's Thesis). Ceará State University, Fortaleza.

[26]. Castro, A. Z., & García García, M. (2021). Critical Service-Learning In Initial Teacher Education Through A Curricular Itinerary. Holos, 2, 1-20. Https://Doi.Org/10.15628/Holos.2021.11986.

[27]. Lima, A. Do N. (2024). Peer Learning: Experience Report In The Subsequent Technical Course In Agriculture. Revista Signos, 45(1). Https://Doi.Org/10.22410/Issn.1983-0378.V45i1a2024.3790.

[28]. Bernardino, C. N., & Santos, A. M. Dos. (2023). A Proposal For A Comparative Study Between Expository Classes And Investigative Approaches In Physics Teaching. Revista Do Professor De Física, 7(2), 62-77. Https://Doi.Org/10.26512/Rpf.V7i2.50411.

[29]. Silva, B. R. T., Vasconcelos, A. K. P., & Moura, F. M. T. (2021). The Flipped Classroom (Sai): An Experience With Chemistry Teaching For The 1st Year Of High School In A Private School. Revista Insignare Scientia-Ris, 4(6), 538-551. Issn: 2595-4520.

[30]. Alexandre, S., & Borin Da Cunha, M. (2023). Flipped Classroom: A Didactic Proposal For The Teaching Of Physics. Revista Insignare Scientia-Ris, 6(6), 538-551.

[31]. Link, R. De F., Quadros, S. C. De O., & Lopes, B. J. S. (2024). Impact Of Debates In The Classroom: Text Production And Teacher Training. Revista On-Line De Política E Gestão Educacional, 28(00), Article E023007. Https://Doi.Org/10.22633/Rpge.V28i00.19111.

[32]. Latorre-Cosculluela, C., Liesa Orús, M., & Vázquez Toledo, S. (2020). Educational And Inclusive Experiences With Students With Adhd: A Theoretical Review. Voces De La Educación.

[33]. Kidman, G. (2020). How Inquiry-Based Learning Helps Prepare Children For The Real World. Innerself. Available At Https://Pt.Innerself.Com/Personal/Relationships/Parenting/21250-How-Inquiry-Based-Learning-Help-Prepare-Children-For-The-Real-World.Html.

[34]. Rocha, A. C. Da, & Cabral Neto, J. Dos S. (2022). Game-Based Learning: Teaching Quantum Numbers. Revista Ciências & Ideias, 13(1), 141-154. Https://Doi.Org/10.22407/2176-1477/2022.V13i1.1927.

[35]. Abeditehrani, H., Dijk, C., Neyshabouri, M. D., & Arntz, A. (2021). Beneficial Effects Of Role Reversal In Comparison To Role-Playing On Negative Cognitions About Other's Judgments For Social Anxiety Disorder. Journal Of Behavior Therapy And Experimental Psychiatry, 70, 101599. Https://Doi.Org/10.1016/J.Jbtep.2020.101599.

[36]. Estrela, A., Ferreira, P., Loureiro, C., & Sarreira, P. (2022). Graphic Organizers: Essential Tools In The Teaching And Learning Of Mathematics And Physical And Natural Sciences. In A. Dias & C. Loureiro (Eds.), Curricular Integration Practices In The 1st And 2nd Cycles Of Basic Education (Pp. 145-178). Lisbon School Of Education, Lisbon Polytechnic Institute. Https://Doi.Org/10.34629/Ipl.Eselx.Cap.Livros.162.