

**PROJECT-BASED LEARNING AND THE CHALLENGES OF THE 21ST CENTURY** <https://doi.org/10.56238/sevened2024.037-146>

**Aurisélia Rocha Azevedo<sup>1</sup>, Elenilda Teles Frota<sup>2</sup>, Flavia Azevedo Albuquerque Fontenele<sup>3</sup>, Francisca Antonia Araujo de Vasconcelos<sup>4</sup>, Manoel Flávio Coutinho<sup>5</sup>, Maria de Lourdes Rocha da Silva<sup>6</sup>, Maria José Coutinho de Melo<sup>7</sup> and Tereza Cristina Fernandes França<sup>8</sup>.**

**ABSTRACT**

The work addresses the need to train proactive individuals and protagonists of their own life, career and goals, in the face of the current scenario of society and the world. To this end, it proposes a new way of teaching that integrates various media, the curriculum and pedagogical practice, based on the Constructivist perspective, aiming to strengthen the student's protagonism and form critical and participatory citizens, capable of solving problems in collaboration with their peers. The importance of active learning methodologies is highlighted, such as Project-Based Learning (ABProj.), which places the student at the center of the educational process, encouraging their active participation, critical reflection and resolution of real problems. AABProj. It allows the integration of different disciplines in a project, enhancing the student's knowledge and developing skills such as teamwork, critical thinking, time management and articulation of different contents. The profile of the teacher who teaches through projects must be able to work in a team, listen to and accept divergent opinions, manage their actions and attitudes, and articulate knowledge with colleagues from different areas to solve problems collaboratively.

**Keywords:** Active methodologies. Project-based learning. Collaboration. Teamwork.

---

<sup>1</sup> Doctorate student in Educational Sciences  
Universidad Del Sol - UNADES  
E-mail: auriselias@gmail.com

<sup>2</sup> Master's student in Educational Sciences  
Universidad Del Sol - UNADES  
E-mail: elenildatf@gmail.com

<sup>3</sup> Specialist in Public Education Management  
Federal University of Juiz de Fora - UFJF  
E-mail: flaviaazevedo1@yahoo.com.br

<sup>4</sup> Specialist in Teaching Methodology  
Vale do Acaraú University - UVA  
E-mail: frangeografia46@gmail.com

<sup>5</sup> Master of Science in Education  
Flórida Christian University  
E-mail: mflavioc@yahoo.com.br

<sup>6</sup> Specialist in Institutional Psychopedagogy  
Athenaeum College  
E-mail: lurdinharochaa@gmail.com

<sup>7</sup> Specialist in Teaching Methodology  
Vale do Acaraú University - UVA  
Email: mazecoutinho@yahoo.com.br

<sup>8</sup> Specialist in Teaching Methodology  
Vale do Acaraú University - UVA  
Email: tcristinaf@yahoo.com.br



## INTRODUCTION

The need to replace the old vision of static and safe knowledge with a changeable knowledge, which adapts to changes and has the flexibility to reinvent itself and adapt to different contexts and unpredictability, means that education also needs to change its way of creating knowledge, using methodologies that make the student a more flexible being, active, thinking and who knows how to relate to their colleagues in a collaborative way, acquiring subsidies to continue learning throughout life.

The globalized world full of new technologies will also require professionals capable of being creative, critical but also humanistic and concerned with social and environmental issues that will guarantee life on earth and the possibility of peaceful coexistence between people of different creeds, races and nationalities.

Traditional education no longer encompasses the infinity of skills and abilities that the modern citizen needs to have to remain active and productive in the labor market, for this reason the school needs to change its way of doing education, so that it can meet the demands of society, changing the theoretical character for a more dynamic and active conception of doing education.

From this perspective, we present this study on active methodologies, more precisely on project-based learning as a way to involve students in an action in which the various knowledges can be used to answer everyday questions, together with a team that works collaboratively, critically and consciously, forming the citizen aware of his role as a transformer of society.

The objective of this work is to reflect on project-based learning as a lever for meaningful learning, understanding the challenges to be faced by educators to put this methodology into practice in the school model that is currently presented, and the profile necessary for the teacher to carry it out successfully.

The methodology is built on the bibliographic research of the idea of renowned authors who have already made considerations about project-based learning, seeking to conceptualize and characterize it, in addition to a reflection on the challenges of the teacher in conducting this methodology and the profile of the same in the face of the innovations that this practice requires.



## PROJECT-BASED LEARNING AND ITS IMPORTANCE FOR MEANINGFUL LEARNING

### PROJECT-BASED LEARNING (ABPROJ.): CONCEPT AND CHARACTERISTICS

The current moment that the world and society as a whole are going through, demands people who are proactive and protagonists of their lives, their careers, and their goals and dreams. Thus, education needs to form the individual who is able to adapt to the new desires of today's life, capable of performing the multiple roles that he will need to perform throughout life, as well as knowing how to live and collaborate with his peers, whether at school, at work or in society.

In order to develop a new way of teaching, which integrates the various media, the curriculum and the pedagogical practice in a Constructivist perspective, combined with the need to strengthen the student's protagonism and design an education that delivers to society critical and participatory citizens, capable of solving problems in collaboration with other people, have made education theorists formulate several theses and studies to solve these issues.

For Becker (2012), constructivist pedagogy has shifted the focus from the teaching process to "mediation", which occurs in the interaction between the learner and the object of study. In this approach, both hereditary factors, curriculum, culture and people in the circle of coexistence interact in learning. Certainly, when changing the focus of learning, it is necessary to change the methodologies and the curriculum design of schools, so that they can handle this new demand.

This active form of learning, better known as "active methodology" provides greater participation of the student in the educational process, favoring greater criticality and reflection on what he is doing, always linking his studies to the problems of the reality that surrounds him, even consciously intervening in this reality. For Dewey (2002), the use of social problems for the student to solve as a team is the most coherent way of learning, because education should work with the experience of real experiences, instead of simply transmitting abstract themes to students.

Thinking about an educational methodology that is active also requires that education systems and schools think about the use of new technologies, a critical approach to content selection, the best way to work as a team, cooperation, interaction and the responsibility of the student in the face of the active construction of their knowledge. The student's protagonism is essential for him to enhance his school performance and be able to develop learning that enables him to experience citizenship.

In recent years, many active methodologies have been used in order to develop competencies, skills and attitudes that are consistent with the autonomy required by



companies and the market. All these skills must be acquired in the school, which has increasingly sought to implement methodologies that facilitate students to develop, always seeking to meet the demands of the globalized world, which seeks proficient, creative people who know how to relate and work as a team.

As a way of placing the student at the center of the learning process in school practice, based on the National Common Curriculum Base (BNCC), Project-Based Learning (ABProj) has been widely used, this active methodology leads the student in the search for solutions to problems of their reality and experience, usually grouped in teams that study all possible content to try to find solutions that solve the problem. This methodology is a comprehensive pedagogical strategy, as it includes several other methodologies and technologies in the way of seeking knowledge and achieving objectives.

A ABProj. it is very easy to integrate different knowledge from multiple disciplines in the same project, which enhances the student's knowledge, as he observes that a problem cannot be solved in just one discipline, but needs knowledge from several areas to be solved, which facilitates the understanding that knowledge is not fragmented or divided, but that each area of knowledge has its contribution to the solution of that problem.

The profile of the student who studies through projects needs to be a person capable of working well in a team, of knowing how to listen and accept divergent opinions, thinking critically with their peers in order to find the best solution through their active participation in the learning process. This student still needs to know how to control time, manage his actions and attitudes and know how to relate different contents in the same project, always articulating the theory with the reality he wants to transform.

These skills and abilities are trained and acquired also in the development of the proposal, because in addition to finding solutions to the problem in question, the student also develops his potential. Ruthes & Cunha (2008) state that project-based learning is active and collaborative, as it emphasizes teamwork and action while developing skills and acquiring knowledge. At the moment when a student is reading, discussing, giving his opinion and deciding, he is at the same time building his autonomy and forming himself as a social and cultural subject and developing his citizenship.

For Abrantes (1995) the main characteristics of a work with a project are:

- Intentional action: students work around solving a real problem, which gives meaning to every study carried out.
- The responsibility and autonomy of the students: by working as a team, the students are responsible for the choices made throughout the project. Cooperation between them is essential to the final result.



- The reality: Students will engage in a real problem, the solution of which may benefit them and their socio-cultural context.
- Problem solving: The central objective of the project is to solve or propose resolutions to a problem that requires action to solve.
- Realization in phases: Choice of the objective, formulation of questions, planning, execution, evaluation and dissemination of results.

The project, as a work methodology at school, transforms the act of studying, which was previously solitary and individual, into a group experience with cooperation, sharing, research, debate, change of mind and construction of knowledge and skills useful for life and for the community. The use of new technologies for research and investigation also provides another skill to students. Knowledge can be multiplied through the search for solutions to the problem by learning to use new sources of information, developing in a scientific and technological way.

### THE CHALLENGES OF TEACHERS TO IMPLEMENT ABPROJ

The teacher working in this context of new technologies and active methodologies needs to be prepared to encourage their students to develop investigative activities, to raise hypotheses and seek to answer them through research and scientific experiment, building knowledge that mobilizes them to actively participate in the society in which they live, if possible, modifying it for the better, while collaborating with their colleagues in a reflective and critical way. All these issues are necessary and require a professional who has these skills and abilities, in addition to working in a school that provides them with the necessary means to achieve their goals.

Some issues, however, are fundamental for the educator to be able to truly be this master of active methodologies, and do a job that really generates effective learning results in the school where he teaches. The first and most important challenge that the teacher needs to overcome comes from his initial training, often based on the traditional way of teaching, which will not help him at all when using an active methodology, especially if the didactics studied and experienced in the years of training were based on traditionalism. Breaking paradigms and breaking with the model of classes in which he was trained becomes a great challenge for the teacher.

Another obstacle that may hinder the application of ABProj. by the teacher, it is due to the rigidity of planning by specific areas, which makes it difficult for colleagues from one area of knowledge to relate and plan with colleagues from other areas, causing the



articulation between disciplines and knowledge to be truncated. The division of areas and disciplines, which are often worked with different coordinators, on different days and with different approaches, makes it very difficult to work that intends to take a global approach to a given problem or phenomenon.

The rigidity of the annual syllabus of the disciplines and all the contents that are planned to be worked on in a given grade, do not always give the teacher the opportunity to build projects with their students, because sometimes the project leads to learning other than the foreseen ones, and schools, families and educational systems demand from the teacher that those planned contents be worked on in full, forcing an abbreviation of projects or a greater difficulty in leaving students free to seek diversified solutions. Prado (2003) reflects that not all the contents determined for a grade can be contemplated in the context of a project, which leads to the teacher needing other strategies for students to learn some concepts.

External evaluations, with the accountability of schools and teachers for the results, are often a cause of concern for educators who seek in the best possible way, to work on the knowledge provided in the reference matrix of these evaluations, trying to develop the matrix of competencies for which they will be charged at the time of the results, a situation that can facilitate the use of active methodologies to achieve these results, but it can also be a limitation of work with projects, often preventing the flexibility of time for the natural development of the study. Paraphrasing Amaro (2013), external evaluations can have a direct impact on the professional autonomy of teachers and on the control of pedagogical actions, often limiting creativity and reducing the possibility of integrating work with projects.

With the advent of the media and the consequent use in the school, the teacher needs to be qualified to work as an incentive for his students to seek knowledge autonomously, but the times and spaces of the classes, the way they are organized in 50-minute schedules, sometimes make it difficult to work with projects and with the media, if they go beyond class time or the use of technological means. Often, teachers are not familiar with all the possibilities they can obtain through these valuable mechanisms and end up not using them in their classes. Prado (2003) considers that in order to work with ABProj. From the perspective of integration between the various media, it is necessary to interrelate concepts and principles, which, without proper mastery, can weaken the initiative to improve the teacher's learning and practice.



## THE TEACHER OF THE ABPROJ ACTIVE METHODOLOGY

The profile of the teacher to work with ABProj. it must be that organizer, planner, encourager, intervener, reflective, open to dialogue, partner in research, the one who thinks about making his classes more active and also who opens himself to cooperative work with his teaching colleagues, realizing that the curricular components are a complex whole and that knowledge is not fragmented, but permeates the other areas and knowledge. This professional needs to be aware of the social and environmental relevance that a good project has and the change it can mean in the lives of their students.

A major change in the role of the educator who proposes to work based on constructivist theories and through active methodologies, such as ABproj. It is to stop being the transmitter of knowledge and become that partner of the student in the search for knowledge that best meets the objectives of the project, for this, the media are of fundamental importance. In addition to seeking knowledge, the teacher needs to facilitate dialogue among his students, motivate the group dynamics while also evaluating each intellectual and behavioral step taken by the group members in carrying out the project.

Teamwork is also an educational reality that needs to be discussed with the pedagogical team in order to facilitate holistic learning for students and that is effective in analytically responding to the problem to be solved, identifying the objectives and privileged contents in the execution of the project. Working with projects requires continuous pedagogical training based on an interdisciplinary philosophy, so that the educator can offer what he experiences, and carry out activities with his students, which he himself carries out with his peers.

Fernandes, Flores & Lima (2012. p.234) say about the profile of the ABProj actor professor. "teamwork, curricular coordination and articulation, sharing of ideas and experiences, joint decision-making are some aspects that participation in projects presupposes in terms of teaching work", the pedagogical experience of individual and solitary work, does not apply to the new model of methodology that needs the various areas of knowledge to explain a project or phenomenon so that students can build global concepts, and no longer divided into watertight processes.

The educator who wants to build meaningful learning, capable of changing attitudes, behaviors and values of his students, needs to contemplate the teaching and learning process as an opportunity for educational objectives, methodologies, content selection and evaluation to be tools for their intervention and social participation, ensuring that the human dimensions, social and political can be developed in the process.



## FINAL CONSIDERATIONS

The conclusion that is reached at the end of all the readings and reflections about the changes that education needs to go through to keep up with the great development that today's society is going through, both in technological aspects and in political, scientific and economic paradigms, go through the adoption of a teaching practice that makes the student the protagonist of his knowledge, hence the study of active methodologies and among them the ABProj.

Working with projects requires a structural change in the school, in planning, in the division of tasks, in procedures and in evaluation, which must adapt to the way of working in which the student will stop being passive to be a protagonist in decision-making, organization, research and at all times assume responsibility for the search for knowledge and for what he can do from what he has learned to benefit his life, your school or your community, always acting in cooperation with your team.

The role of the teacher is also reconstructed from the use of active methodologies, as he is no longer the master to be the tutor, that partner who is together in each phase of the project, encouraging, researching, stimulating dialogue and understanding of the team, always evaluating the step-by-step of the activities, while at the same time needing to talk to colleagues from other areas to organize the conditions that best provide holistic learning.

The theme is engaging and very necessary, opening up a range of possibilities for deepening this methodology, which can be increased with the use of new technologies and encouragement for teachers to seek constant training, to be open to changes that enhance their work of building an education that prepares for full citizenship.



## REFERENCES

1. Abrantes, P. (1995). Trabalho de projetos e aprendizagem da matemática. In Avaliação e educação matemática. Brasília: MEN/USU - GEPEM.
2. Amaro, I. (2013). Avaliação externa da escola: repercussões, tensões e possibilidades. Estudos em avaliação educacional, 24(54), 32-55.
3. Becker, F. (2012). Educação e construção do conhecimento (2ª ed.). Porto Alegre: Penso.
4. Dewey, J. (2002). A escola e a sociedade: a criança e o currículo. Lisboa: Relógio d'Água.
5. Fernandes, S., Flores, M. A., & Lima, R. M. (2012). Aprendizagem baseada em projetos interdisciplinares no ensino superior: instrução ao nível do trabalho docente.
6. Ludke, M. (2003). O trabalho com projetos e a avaliação na educação básica. In Práticas avaliativas e aprendizagens significativas (pp. 67-80). Porto Alegre: Mediação.
7. Prado, M. E. B. B. (2003). Pedagogia de projetos. In Brasil. Ministério da Educação. Pedagogia de projetos e integração de mídias (pp. 1-14). Brasília: MEC.
8. Ruthes, R. M., & Cunha, I. C. K. O. (2008). Gestão por competências - uma aplicação prática. São Paulo: Editora Martinari.