


INTEGRATED CURRICULUM AND ORGANIZATION OF TEACHING PRACTICE: ANALYSIS FROM THE TECHNICAL COURSE IN ENVIRONMENT OF IFMA, BURITICUPU CAMPUS

 <https://doi.org/10.56238/arev7n4-268>

Submitted on: 03/25/2025

Publication date: 04/25/2025

Aliny Alves Viana Carneiro¹, Raimundo Santos de Castro².

ABSTRACT

This article analyzes the organization of teaching practice in the context of the curriculum integrated in the Technical Course in Environment at IFMA, Buriticupu Campus. The research, motivated by the author's experience as a teacher at the institution, seeks to understand how teachers articulate their pedagogical practices with the principles of Professional and Technological Education (EPT) and the integrated curriculum. The study highlights the trajectory of EFA in Brazil, from its welfare origin to the search for omnilateral education, and the importance of polytechnics and the unitary school as conceptual bases. The research also addresses the challenges of implementing the integrated curriculum, such as the need for continuing teacher training and overcoming disciplinary fragmentation. From the perception of teachers, the article reveals a scenario of challenges and possibilities in the construction of an emancipatory pedagogical practice, which promotes the integral formation of students and prepares them to act in a critical and transformative way in society.

Keywords: Integrated Curriculum. Teaching Practice. Professional and Technological Education. Omnilateral Training.

¹ Master in Professional and Technological Education from IFMA, São Luís Campus – Monte Castelo; Professor of Languages at the Federal Institute of Education, Science and Technology of Maranhão, Buriticupu Campus
E-mail: aliny.carneiro@ifma.edu.br

² Doctor in Teaching of the North and Northeast Education Network (RENOEN), Associated Institution State University of Maranhão. Full Professor of the Department of Mathematics at IFMA, São Luís Campus – Monte Castelo.
Email: raicastro@ifma.edu.br

INTRODUCTION

Professional and Technological Education (EFA) in Brazil, as a living organism, has adapted and transformed over the years, responding to the constantly changing socioeconomic and political demands. This trajectory, marked by challenges and advances, culminated in the implementation of the **integrated curriculum**, a proposal that seeks to break with the historical fragmentation between general education and professional training, aiming at a truly comprehensive and omnilateral education. This article focuses on the intricate web that involves the **organization of teaching practice** in this context, having as a lens of analysis the Technical Course in Environment of the Federal Institute of Maranhão (IFMA), Buriticupu Campus.

The motivation for this research emerges from the author's own experience as a professor at IFMA, Buriticupu Campus. Throughout her career, she was faced with the challenges of articulating her pedagogical practice with the precepts of EFA and the integrated curriculum, highlighting the need for a theoretical and practical deepening on the subject. The gap in the initial training of many teachers, who enter EFA institutions without specific preparation to deal with the particularities of this teaching modality, reinforces the urgency of investigating how teachers organize themselves and build their pedagogical practices in this scenario. The author felt the lack of support and guidance when she joined the institution, which pushed her to seek answers and reflections on the subject.

The Technical Course in Environment, chosen as the *locus* of the research, presents itself as a fertile ground for this investigation. Being one of the oldest courses on campus, with seven classes of integrated high school already offered, it reflects the transformations that EPT has undergone, as well as society's demands for professionals capable of dealing with contemporary socio-environmental challenges. The course in question also stands out for its relevance in the local context, where the unsustainable exploitation of forest resources and agrarian and environmental conflicts require the training of professionals with a critical and transformative view of reality.

The research seeks, therefore, to understand how the teachers of this course organize their pedagogical practices, having as a background the complex relationship between teacher training, the integrated curriculum and the conception of EFA that permeates the institution. From the perception of the teachers, it is intended to unveil the challenges, contradictions and potentialities of the implementation of the integrated curriculum in the Technical Course in Environment. The research is anchored in the

understanding that EFA is not limited to mere preparation for the labor market, but is constituted as an omnilateral education project, committed to the integral formation of the individual and to social transformation. The integrated curriculum, in this context, emerges as a privileged instrument for the realization of this project, by articulating work, science, technology and culture in the construction of significant and emancipatory pedagogical practices.

This article proposes, therefore, to contribute to the debate on the organization of teaching practice in the integrated curriculum, shedding light on the experiences and perceptions of teachers of the Technical Course in Environment at IFMA, Buriticupu Campus. It is hoped that the results of the research can foster reflection on teacher training in EFA and the construction of pedagogical practices that effectively promote the integral formation of students, preparing them to act in a critical and transformative way in society. From the analysis of the specific reality of the course in Environment, the study seeks to deepen the understanding of the challenges and possibilities of implementing the integrated curriculum, offering subsidies for the construction of policies and practices that strengthen EFA as an emancipatory and transformative education project.

PROFESSIONAL AND TECHNOLOGICAL EDUCATION IN BRAZIL: FROM ASSISTANCE TO EMANCIPATION

Professional and Technological Education (EPT) in Brazil has walked a long and winding path, from its origins marked by a welfare bias to the search for an integral and emancipatory education. In the beginning, EFA was intended for the training of the popular classes, with a focus on preparing labor for the labor market, perpetuating the educational duality that separated propaedeutic education from technical training. This utilitarian conception of EFA, which saw the individual as a mere resource for the productive system, was gradually challenged throughout the twentieth century.

The discussions around omnilateral education and polytechnics, driven by thinkers such as Marx, Gramsci and Saviani, brought to light the need to conceive EFA as an integral education, which would promote the full development of the human being in all its dimensions. Omnilateral education, as defined by Marx and Engels, sought to break with the alienation and fragmentation of the individual, providing him with access to the cultural and scientific goods of humanity and enabling him to act in a critical and transformative way in society. Polytechnics, in turn, proposed overcoming the dichotomy between manual

and intellectual work, emphasizing the mastery of the scientific and technological foundations of the production processes, in order to enable the worker to understand and transform the reality of work.

The creation of the Federal Institutes of Education, Science and Technology (IFs) in 2008 represented an important milestone in the consolidation of EFA as a public policy, anchored in the principles of integral education, polytechnics and unitary schooling. The IFs, with their proposal to offer professional and technological education at all levels and modalities, integrating teaching, research and extension, materialized the search for an education that transcends the mere preparation for the labor market, aiming at the formation of critical, autonomous citizens capable of intervening in reality.

In this context, the implementation of the integrated curriculum emerges as a key element for the realization of this proposal. By breaking with the fragmentation between general education and professional training, the integrated curriculum seeks to articulate work, science, technology and culture, providing students with a deeper and more critical understanding of reality. The implementation of the integrated curriculum, however, requires overcoming challenges such as resistance to change, lack of resources and the need for continuing teacher training.

The present research is inserted in this scenario, seeking to analyze the organization of the teaching practice within the scope of the curriculum integrated in the Environmental Technician course at IFMA, Buriticupu Campus. From the perception of teachers, it is intended to identify the challenges and potentialities of the implementation of the integrated curriculum, contributing to the debate on teacher training and the construction of a professional and technological education that promotes the integral formation of students.

CONCEPTUAL AND EPISTEMOLOGICAL BASES OF EPT: FOUNDATIONS FOR FOR: OMNILATERAL MATION

A deep understanding of the conceptual and epistemological bases that underpin Professional and Technological Education (EFA) is crucial to unravel the complexity of teaching practice, especially in the context of the integrated curriculum. EFA is structured on a set of interdependent pillars: science, culture, technology and work, which are intertwined in the search for the omnilateral formation of the individual.

Polytechnic, as elucidated by Saviani (2003), transcends the mere accumulation of technical skills. It refers to the mastery of the scientific and technological foundations that permeate work processes, allowing the individual not only to perform tasks, but to understand the logic and implications of their actions. Polytechnics, therefore, promote the integration between theory and practice, between scientific knowledge and productive work, enabling the individual to critically analyze reality and to intervene in a conscious and transformative way.

The unitary school, idealized by Gramsci (1982), is opposed to the historical division between manual and intellectual labor, which segregated education into two distinct models: one aimed at the intellectual elite and the other at the working class. Gramsci's proposal is that of a school common to all, which promotes an integral education, integrating humanistic and scientific, theoretical and practical knowledge. The unitary school, therefore, constitutes a space for overcoming educational duality, preparing students to act in a critical and transformative way in society, regardless of their social origin.

The concept of omnilaterality refers to the integral formation of the individual, to the full development of his or her potentialities in all dimensions of life. EFA, by being based on omnilaterality, seeks to break with the fragmented view of the human being, promoting an education that contemplates not only the professional dimension, but also the social, cultural, political and ethical dimensions. Omnilaterality is materialized in the articulation between the conceptual bases of EFA - science, culture, technology and work - and in the construction of pedagogical practices that promote the development of critical thinking, autonomy and the ability to intervene in reality.

THE ARTICULATION OF CONCEPTUAL BASES IN TEACHING PRACTICE

The understanding of these conceptual and epistemological bases is fundamental for the teacher to be able to organize his pedagogical practice in the context of the integrated curriculum. The articulation between science, culture, technology and work must be present in all stages of the educational process, from planning to evaluation. The teacher needs to be able to contextualize knowledge, relating it to the reality of the world of work and to the demands of society, in order to promote meaningful and transformative learning. Teaching practice in EFA, therefore, requires a constant dialogue between theory

and practice, between the specific knowledge of the area and the demands of the social context, aiming at the integral formation of students.

Teacher training plays a crucial role in this process. It is necessary for teachers to have access to spaces for continuing education that allow them to deepen their knowledge about the conceptual bases of EFA, the integrated curriculum and teaching methodologies that favor the articulation between general education and professional training. Teacher training should be seen as a permanent and dialectical process, which accompanies the transformations of the world of work and the demands of society, enabling teachers to develop innovative pedagogical practices, contextualized and committed to the omnilateral education of students. Continuing education, therefore, is not limited to the updating of specific knowledge, but also involves critical reflection on pedagogical practice and the development of new teaching and learning strategies.

In short, the conceptual and epistemological bases of EFA, anchored in polytechnics, the unitary school and omnilaterality, provide the foundations for the construction of a professional and technological education that transcends mere preparation for the labor market. The articulation between science, culture, technology and work, mediated by the pedagogical praxis of the teacher, enables the formation of critical, autonomous individuals capable of intervening in reality, contributing to the construction of a more just, democratic and sustainable society.

THE CURRICULUM INTEGRATED INTO HIGH SCHOOL: CONTRIBUTIONS TO AN OMNILATERAL EDUCATION

The **integrated curriculum** presents itself as a beacon to illuminate the path towards the realization of omnilateral training, breaking with the traditional dichotomy between general education and professional training. It weaves a web that intertwines knowledge and practices, providing students with an understanding of reality that transcends superficiality, enabling them to act critically and transformatively for the benefit of their needs and aspirations.

In the perspective of Ramos (2019), the integrated curriculum goes beyond the mere juxtaposition of content. It proposes to create bridges between different areas of knowledge, promoting a **holistic and contextualized view of reality**. The student, immersed in this web of interconnected knowledge, is invited to construct meanings, to

question and problematize, to go beyond the phenomenal appearance of things and to understand the power relations and contradictions that permeate society.

The implementation of the integrated curriculum, however, does not occur spontaneously. It requires overcoming fragmented pedagogical practices and building a **dialogical and interdisciplinary learning environment**. Interdisciplinarity, in this context, is not reduced to the mere juxtaposition of disciplines, but is configured as an epistemological attitude that seeks the integration of different knowledges in the construction of a broader and more complex knowledge. The contextualization of knowledge, in turn, implies relating it to the students' reality, their experiences and the challenges of the world of work, making learning more meaningful and relevant.

Work **as an educational principle**, as Ramos (2014) points out, plays a central role in the curricular organization of integrated high school. It is not limited to training for the labor market, but constitutes itself as a founding category of human experience, through which the individual relates to the world, produces knowledge and transforms reality. Work, in this perspective, is inseparable from science, technology and culture, and the articulation between these dimensions is fundamental for the integral formation of the student.

The integrated curriculum, therefore, is configured as a privileged space for the construction of an emancipatory education, which promotes the omnilateral formation of students and enables them to act in a critical and transformative way in society. The overcoming of fragmented pedagogical practices, the promotion of interdisciplinarity and the contextualization of knowledge, and the centrality of work as an educational principle are key elements for the implementation of the integrated curriculum and for the construction of an EFA that contributes to the formation of critical, autonomous citizens committed to social transformation.

In short, the integrated curriculum presents itself as a challenge and a possibility for EFA. A challenge, as it requires the overcoming of traditional teaching models and the construction of new pedagogical practices. A possibility, as it paves the way for the formation of individuals capable of understanding the world in its complexity and of acting in a critical and transformative way in the construction of a more just, democratic and sustainable future.

THE PROCESS OF IMPLEMENTATION AND/OR CONSTRUCTION OF THE INTEGRATED CURRICULUM AT IFMA, BURITICUPU CAMPUS

IFMA, Buriticupu Campus, began its activities in 2007, offering technical courses integrated with high school. However, the construction of an integrated curriculum took place gradually, based on the discussions and training promoted by the institution. In 2018, the campus began a work to reformulate the course plans, seeking the implementation of the integrated curriculum. As of 2019, the pedagogical sector began to promote moments of collective planning for the organization and execution of integrative pedagogical practices.

THE IFMA CAMPUS BURITICUPU AND THE CONSTRUCTION OF THE INTEGRATED CURRICULUM: A TRAJECTORY OF CHALLENGES AND INNOVATIONS

IFMA, Buriticupu Campus, began its journey in 2007, opening its doors to the community with the offer of technical courses integrated with high school, planting the seed of a promising future in education in the region. However, the construction of a truly integrated curriculum, which would overcome the fragmentation between general and professional training, did not take place immediately. It was a gradual process, marked by challenges and advances, which demanded reflections, discussions and continuous training by the academic community.

The first years of the campus were marked by the expansion of the offer of courses and the construction of its physical infrastructure. However, the constant turnover of servers, many of whom came from other cities and even from other states, made it difficult to consolidate a consistent and lasting pedagogical project. The construction of the institution's Political Pedagogical Project (PPP), for example, was started and interrupted several times, as a result of changes in the staff.

From 2018, driven by the discussions and training promoted by the IFMA Rector, the Buriticupu Campus began a work of reformulation of its course plans, seeking the implementation of the integrated curriculum. The campus stood out for its proactivity, adopting as a model the Farroupilha Federal Institute, a national reference in the implementation of the integrated curriculum. The change in the organization of course plans from modular to annual in 2018 was an important step in this process, allowing for greater flexibility and curricular integration.

As of 2019, the pedagogical sector of the campus began to play a fundamental role in the construction of the integrated curriculum, promoting moments of collective planning and encouraging the implementation of integrative pedagogical practices. The pedagogical meetings, held at the beginning and in the middle of each school year, have become spaces for training and exchange of experiences among teachers, enabling the construction of a collective pedagogical project and the overcoming of disciplinary fragmentation.

The construction of the integrated curriculum at IFMA, Buriticupu Campus, is a process in constant movement, which requires overcoming challenges and the search for new solutions. The turnover of servers, the lack of resources and the need for continuing teacher training are some of the obstacles that need to be faced. However, the academic community's commitment to the integral education of students and to social transformation has driven the construction of an integrated curriculum that articulates theory and practice, contextualizes knowledge, and promotes the development of critical thinking and autonomy. The path is long and winding, but with each step taken, IFMA, Buriticupu Campus, gets closer to the realization of an emancipatory and transformative education project.

In short, the trajectory of IFMA, Buriticupu Campus in the construction of the integrated curriculum is marked by challenges and overcoming, reflections and innovations. The search for an education that integrates general and professional training, theory and practice, knowledge and action, has driven the academic community to tread a path of transformation, in search of the integral formation of students and the construction of a more just, democratic and sustainable society.

THE IFMA, BURITICUPU CAMPUS AND THE TECHNICAL COURSE IN THE ENVIRONMENT: A RESPONSE TO THE SOCIO-ENVIRONMENTAL DEMANDS OF THE REGION

The Technical Course in Environment at IFMA, Buriticupu Campus, appears in 2019 not as a mere coincidence, but as a direct response to society's growing demands for professionals trained to face the complex socio-environmental challenges that plague the region and the world. The course presents itself as a beacon of hope in a context marked by the unsustainable exploitation of natural resources, agrarian conflicts and the urgent need to rethink the current production and consumption models.

The implementation of the course reflects IFMA's vocation to promote regional development, through the training of qualified professionals and critical citizens, capable of acting in the transformation of reality. The Technical Course in Environment, in this sense, assumes a strategic role, by training professionals with a systemic and integrated view of the environment, able to propose innovative and sustainable solutions to the socio-environmental problems of the region.

The objective of the course goes beyond the mere transmission of technical knowledge. It seeks to train professionals who are able to interpret the environment in its complexity, understanding the interrelationships between the different elements that compose it and the implications of human actions on ecological balance. To this end, the integrated curriculum is structured around four fundamental axes: science, culture, work and technology, which are intertwined in the construction of an omnilateral education.

Science provides the theoretical and methodological framework for the understanding of natural phenomena and environmental transformations, allowing the future environmental technician to critically analyze reality and base his actions on solid scientific knowledge. Culture, in turn, enables the understanding of the different forms of relationship between human beings and the environment, valuing traditional knowledge and promoting respect for cultural diversity. Work, as an educational principle, connects theoretical training to professional practice, enabling the student to act in a critical and transformative way in the world of work. Technology, finally, presents itself as an instrument for solving environmental problems, as long as it is used ethically and responsibly, in favor of sustainable development.

The articulation between these four axes is materialized in the integrated curriculum of the course, which seeks to break with disciplinary fragmentation and promote interdisciplinarity. The student is invited to build bridges between different areas of knowledge, to integrate theory and practice, to contextualize knowledge and to develop a critical and reflective view of socio-environmental challenges. The training offered by the course, therefore, transcends mere preparation for the job market, aiming at the formation of conscious citizens committed to building a fairer, more democratic and sustainable future.

The Technical Course in Environment at IFMA, Buriticupu Campus, thus presents itself as a concrete response to society's demands for professionals capable of dealing with today's socio-environmental challenges. By articulating general and professional training,

theory and practice, science, culture, work and technology, the course proposes to train not only specialized technicians, but critical and transformative citizens, capable of contributing to the construction of a more sustainable future for all.

TEACHERS' PERCEPTION OF THE INTEGRATED CURRICULUM: BETWEEN THE IDEAL AND THE REALITY OF TEACHING PRACTICE

The implementation of the integrated curriculum, as a pillar of Professional and Technological Education (EPT), aims to build a comprehensive education that transcends the mere transmission of content, promoting the articulation between theory and practice, between general and professional training. However, the realization of this ideal faces complex and multifaceted challenges, which are reflected in teachers' perceptions of the integrated curriculum. The research carried out with the professors of the Technical Course in Environment at IFMA, Buriticupu Campus, revealed a scenario of nuances and contradictions, between the desire for change and the difficulties encountered in pedagogical practice.

UNDERSTANDINGS AND CHALLENGES IN THE IMPLEMENTATION OF THE INTEGRATED CURRICULUM

Most of the teachers interviewed demonstrated that they understood the essence of the integrated curriculum, recognizing it as a tool to articulate knowledge from different areas and promote a broader and more critical view of reality. However, this theoretical understanding does not always translate into effectively integrating pedagogical practices. The research revealed that many teachers still face difficulties in overcoming disciplinary fragmentation and in building interdisciplinary projects that articulate different knowledge.

The teachers' statements show the distance between the ideal of the integrated curriculum and the reality of teaching practice. Some professors report that, despite the institutional discourse around curricular integration, the disciplines continue to be taught in isolation, without dialogue between the different areas of knowledge. The lack of time for collective planning, the scarcity of pedagogical resources and the insecurity in relation to interdisciplinary methodologies are some of the obstacles pointed out by teachers.

TEACHER TRAINING AS A KEY ELEMENT: BETWEEN DISENCHANTMENT AND HOPE

The survey also revealed the importance of teacher training for the effectiveness of the integrated curriculum. Many teachers reported having arrived at IFMA without specific training in EFA and without the necessary knowledge to deal with the particularities of the integrated curriculum. The need for continuing education, which addresses not only the theoretical aspects, but also the integrative pedagogical methodologies and practices, emerges as a crucial element for overcoming the challenges faced by teachers.

Despite the challenges, the survey also revealed a sense of hope and a search for alternatives. Many teachers expressed the desire to build a more integrated and meaningful pedagogical practice, which promotes the integral formation of students and prepares them to act in a critical and transformative way in society. The need for teacher training, pedagogical resources and time for collective planning, although it presents itself as an obstacle, also points to paths to be followed in the construction of an emancipatory practice.

The effectiveness of the integrated curriculum in the Technical Course in Environment at IFMA, Buriticupu Campus, depends on the commitment of the academic community to build a collective project that articulates theory and practice, general training and professional training, science, culture, work and technology. It is in overcoming challenges and building new pedagogical practices that we find the possibility of forming critical, autonomous individuals committed to social transformation, capable of interpreting the environment in its complexity and acting ethically and responsibly in the search for a more sustainable future.

The teachers' perception of the integrated curriculum reveals a scenario of challenges, but also of possibilities. The need for teacher training, pedagogical resources and time for collective planning is an obstacle to be overcome. However, the desire for change and the search for an emancipatory pedagogical practice point to a promising future, in which the integrated curriculum can be materialized as an instrument of social transformation and integral formation of students. From the analysis of the specific reality of the Technical Course in Environment at IFMA, Buriticupu Campus, the research contributes to the debate on the implementation of the integrated curriculum in EFA, offering subsidies for the construction of policies and practices that strengthen EFA as an emancipatory and transformative education project.

It is essential that the institution invests in the continuing education of teachers, promoting spaces for dialogue and reflection on the integrated curriculum and teaching methodologies that favor interdisciplinarity and the contextualization of knowledge. In addition, it is necessary to ensure adequate pedagogical resources and time for collective planning, so that teachers can build interdisciplinary projects that articulate different knowledge and promote the integral formation of students.

Overcoming the challenges and realizing the potential of the integrated curriculum depend on the commitment of all actors involved in the educational process. It is in the construction of a collective project, which articulates theory and practice, general education and professional training, science, culture, work and technology, that we find the possibility of forming critical, autonomous individuals committed to social transformation, capable of interpreting the environment in its complexity and of acting ethically and responsibly in the search for a more sustainable future.

FINAL CONSIDERATIONS

The implementation of the integrated curriculum in the Technical Course in Environment at IFMA, Buriticupu Campus, represents an advance in the search for an omnilateral and polytechnic education. The survey revealed that teachers understand the importance of the integrated curriculum for the integral formation of students, but also pointed out challenges that need to be overcome for its effectiveness. Continuing teacher training, investment in pedagogical resources and the strengthening of collective planning are fundamental for the integrated curriculum to materialize as a transformative proposal in EFA.

REFERENCES

1. Andrade, M. M. *et al.* (2004). The profile of basic education teachers: 2001 census. Brasília: Inep.
2. Antunes, R. (1997). *Farewell to work?: essay on the metamorphoses and centrality of the world of work*. Cortez; Unicamp Publishing House.
3. Antunes, R. (2018). *The privilege of serfdom: the new service proletariat in the digital age*. Boitempo Editorial.
4. Antunes, R., & Zanella, L. D. (2016). For a universal and public polytechnic high school. *HISTEDBR On-line Journal*, 16(64), 25-36.
5. Araújo, R. M. L., & Frigotto, G. (2015). Pedagogical practices and integrated teaching. *Education in Question Journal*, 52(38), 61-80.
6. Arroyo, M. G. (2014). *Curriculum, territory in dispute*. Cortez Editora.
7. Azevedo, L. C. S., & Coan, M. C. (2013). Professional and Technological Education in Brazil: from the colony to the republic. *Revista HISTEDBR On-line*, 13(51), 1487-1502.
8. Barbosa Filho, F. H., Pessôa, S. A., & Afonso, R. (2009). Teachers' salaries in Brazil: the evolution in recent years. *New studies CEBRAP*, 84, 115-135.
9. Barros, R. P., Mendonça, R., & Santos, D. B. (2001). *The profile of Brazilian teachers at the end of the 90s*. Ipea.
10. Boff, L. (2018). *Sustainability: what is-what is not*. Limited Voices.
11. Bourdieu, P., & Passeron, J.-C. (1982). *Reproduction: elements for a theory of the education system*. Francisco Alves.
12. Brazil. (1999). *Law No. 9,795, of April 27, 1999. Provides for environmental education, institutes the National Policy for Environmental Education and provides for other provisions*.
13. Brazil. (2018). *Statistical Synopses of Basic Education – 2017*. Inep.
14. Carvalho, A. M. C. (2012). Continuing education of teachers: a rereading of the content areas. *Revista Diálogo Educacional*, 12(35), 57-76.