

## THE INTERDISCIPLINAR EDUCATION CENTER (CENTRO DE FORMAÇÃO INTERDISCIPLINAR)

*Paiva, Roberto Do Nascimento, PhD*

Universidade federal do oeste do par  (ufopa), Brazil

---

### Abstract:

At the federal university of western par  - ufopa, brazil, the center for interdisciplinary education - cfi and the interdisciplinary education 1, at which students acquire during their first academic period, a general training of multi and interdisciplinary nature that meets knowledge to the world of reality reflected through the local reality. It is academic and citizenship offered by specific instance. Regarding the interdisciplinary training 1 - first component of the first general cycle interdisciplinary undergraduate - is based on knowledge articulated through five interdisciplinary modules, for which it produced a collection of modular books namely: logic, languages and communication - llc; origin and evolution of knowledge - oec; society, nature and development - snd; amazon integrative studies - eia, integrative seminars with interaction with a real base, sint / ibr. Through reading and studying these modules interdisciplinary students come into contact with a range of information, content and concepts that will guide their understanding of the amazon region of brazil and the world and establish a research and a scientific exploration to present in internal academic conference at oral communication and banners; since then the student may choose an academic course that will determine his entire professional career.

---

**Key Words:** Interdisciplinarity, education, training, methodology, multidisciplinary

### Introduction:

The interdisciplinary education centre (cfi) is part, as an integral institute of the federal university of western para (ufopa), promotes and welcomes students, broadly, the interdisciplinary education 1, at which students acquire during the their first academic term, a general training of multi and interdisciplinary nature that meets the global knowledge of reality reflected through the local reality. It is academic and citizenship offered by specific instance - the interdisciplinary education centre (cfi).

Regarding the interdisciplinary education 1 of cfi, the first component of the first cycle, undergraduate general - is based on knowledge articulated through five interdisciplinary modules. These learning modules are: logic, languages and communication - llc; society, nature and development - snd; origin and evolution of knowledge - oec; integrative studies in the amazon - eia; seminars integrators - sint and interaction with a real base - ibr. These modules will be conducted by multidisciplinary teams working over the construction of interdisciplinary knowledge that comprise the curriculum of the courses of ufopa, always having the technological mediation appropriate to the purposes of curriculum integration, allowing permanent access to course content. Exclusive teaching materials will be used, with unpublished texts, produced by local expressive authors. They learn at the introduction to "study the science" of their subjects, offering also critical discussions, organized in each of the aforementioned disciplinary modules.

This organization is part of the rationale that if you want to give this cycle curriculum: beginning at the time of a first semester, concurrently with knowledge of philosophy and scientific methodology and the factors involved in development issues and its relations with society and nature, especially oriented integrative studies of the amazon, the students, based on the principles of logic and semiotics, the science of symbols and representations should also develop skills in communication through languages, portuguese language and mathematics, which should expand to more specific aspects of scientific writing, statistics and initial knowledge about the information and communication technologies (tics), as fundamental today.

Thus, from the understanding of the importance of signs and representations that semiotics brings us to the meaning of language, gestures, verbal or written communication in general between living beings, we enter the principles of formal logic, essential for development any cognitive process, especially the scientific basis. Two languages will be developed in this early study in ufopa: the most basic fundamentals of mathematics that will enable the student, if appropriate, will develop deeper knowledge in this area as structuring knowledge, especially for the more empirical sciences, as well as instrumental bases for a good expression in portuguese, especially writing. It is also essential that the student acquire knowledge more generic ufopa on information and communication technologies (tics) as they are the basis of a qualified life from the point of view of some domain information in these current times. We know how important it is that the student, if it proves to be of interest, develop skills to deal specifically with the technology available in their world.

**Main text:**

The sequence of studies, the interdisciplinary education starts with the module logic, languages and communication who happens to be complemented by introductory studies in statistics and acquiring some competence for writing academic-scientific texts, hence the module to be completed with the unit teaching guidance on methodology: basic guidelines for project preparation, standardization and bibliographic aid in the writing, a presentation to the principles and standards of written communication for the sciences, which is already being developed by the students with the presentation of written texts throughout their university course.

With that, we hope, to begin more specific steps in its course ufopa, students, trained in the most universal languages, already have a good preparation for communication throughout their experiences, whether they are academic or not. We are imbued with the desire to concentrate on complex issues that require an interdisciplinary approach each other and so that we can avail ourselves of various sciences, we need to create a set of rules and attitudes toward research, to select information, analyze it, synthesize them, argue and counter-argue, negotiate meanings, cooperate so that we can participate in the social world, including therein citizenship, work and higher studies. We seek an answer to the following demand: "objectify such as interdisciplinary skills without a systematic and organized with the logic, language and communication?».

Initially, we will focus on "language". The language has been studied philosophy, psychology, sociology, epistemology, history, semiotics, linguistics, anthropology, archaeology. At the moment we are studying the language, we realize that it is interdisciplinary, but for that, we consider them as the human ability to articulate meaning in arbitrary systems of representation, which vary according to the needs and experiences of life in society. Therefore, the main reason of any act of language is the production of meaning.

Historically, research on language suggest that it is a social phenomenon, a 'primary reality', once assimilated, involves individuals and causes mental structures, emotional and perceptual are regulated by its symbolism. Given this understanding of the arbitrariness of language can allow us to see ourselves themselves and the world, as well as the classifications that are absorbable by our cognition.

Thus, we have a summary of research areas semiological offering the researcher an overview of the lines in which the semiotic acts and their contributions to communication studies. Further, the subject 'formal logic' present succinctly the logic as a general theory and on formal notions of deductive consequence and consistency, and these notions derived (equivalence). We realize that the first-order logic to deal with these notions only formal language of first order and a formal language that is first order, from the point of view of their logical semantics, the fields of its possible interpretations are fields to which individuals belong only and if, from the point of view of their logical syntax, quantifiers bind only to the individual variables.

The following "elementary mathematics" will show that the positions of analytical logic would be the foundation on which mathematical knowledge could be justified, or knowledge would be the court's reasoning combinatorial synthetic rather than analytical character of the laws of logic, or also, the mathematical knowledge does not need a foundation exogenous, since the mathematical activity has the immediacy of intuitive evidence kantian time.

Let us dwell on the study of portuguese as a language and method of analytical thinking in order to understand the text, which does not always prove dircurives the strategies and resources used to say something, the more we realize that conceal the truth or reality, so as for knowledge of information and communication technologies (tic) we seek to understand the principles of these techniques and technologies, associate them with scientific knowledge, the languages that support them and the problems they purport to solve, either through statistics, or through the scientific methodology.

Module interdisciplinary society, nature and development addresses issues related to these topics in three major themes: power, state and society, development and environment, and cultural diversity. Thus, these texts provide the essentials for the new students in ufopa start building a general framework regarding the area of knowledge through an analytical reading that students do throughout the school year. The theme development and environment discusses the concept of developing and presenting a history of the views and proposals of various authors on the subject, starting from the period in which they are built the foundations of this concept (the enlightenment), to discuss the emergence of academic debate on the issue, circa 1930s, discussions in north america and europe in the 1940s on the advanced economies, the great controversy of the 1950s and 1960s on the development models, centered on eclac (economic commission for latin america), and growth from the 1960s, the debate about environmental preservation, which contributed to the construction of the concept of sustainable development, fundamental today. It addresses the following issues of ethical development and appreciation of traditional knowledge about nature (indians, maroons, locals, fishermen and others), highlighting the contribution of anthropology to the debate about the latter. Then discusses the various notions of 'nature' that mediate the discussion on the relationship between society and the environment today, the significance of the amazon in the international context, forms of economic exploitation that prevailed in that territory (livestock, timber, soybeans, mining ) from the 1970s, their relations with deforestation and subsequent institutionalization of environmental concerns, which becomes the object of public policies and international agreements. The interdisciplinary theme "social conflicts in brazil in the early republican period," deals with the major social conflicts occurred during the period of the first republic, the countryside and the city, bringing thus some important references for understanding the formation of brazilian society. To discuss labor relations in urban areas and on issues related to the creation of worker rights, emphasizes the organization of the working class and goes beyond the historical period stated in the title, with considerations on the subsequent period marked by the figure of getulio. With a historical approach, are discussed: the war of c anudos: the vaccine revolt, the contested war, and the revolt of the whip. These are conflicts that were closely related to the consolidation of political and social order and republican brazil with the emphasis at the time the notions of modernity and progress. Other references of importance for the study of brazilian reality is provided by interdisciplinary theme "geography of brazil", which addresses the vocation of interdisciplinary areas of history and geography, for issues relating to transformation of geographical space are presented by them in historical perspective. At the beginning of his presentation addressing the colonial period, discussing the relationship between territorial expansion, ownership / occupation of land and the establishment of power relations. Further, touching on issues such as the reconfiguration of space structures caused by the transition from agro-export model for the urban industrial relations with the changes in the territorial division of labor and the state apparatus in the twentieth century, introduce the concept of semi-periphery, discuss the formation of supranational economic blocks such as mercosur and the territorial diversity of the brazilian territory, especially in the amazon context. The interdisciplinary theme of "science economics: elements of an introductory overview", make a brief introduction to economic science. Previously indicate their connections to the spheres of power relations and ideology. Present ideas and concepts relevant to this matter, as the ideas of balance and efficiency, and expose the proper method of study in economics. The interdisciplinary theme "ethics, society and citizenship", put in historical perspective the idea of citizenship, exposing his concept in classical antiquity (greece and rome) and after the bourgeois revolutions, emphasizing the importance of the concept of the public to the idea of citizenship with an overview of the differences between this concept and the state. For this, we take as example the public school and traveled briefly along the path of classical reflections on the modern state, from machiavelli to marx. The interdisciplinary topic

"biocultural diversity: conversations on anthropology (s) in the amazon," has as its guiding idea of the emphasis on diversity, applied to the human species. Explains why it is not valid concept of race - and follow the evolutionary trajectory of hominids, since its emergence in africa until the appearance, in the same continent, the current human species. Also provide information about archeology, emphasizing the importance of science, along with anthropology, the study of amazonian peoples.

Upon completing this module interdisciplinary, student-reader will have made contact with a large number of questions, which can enrich the set of references that already has. The information presented here and also invite inquiries for continuous deepening the topics discussed, the reader will certainly feel encouraged as you look through the texts.

The interdisciplinary topic origin and evolution of knowledge - oec base the philosophical approach to the development of scientific thought to the amazon and, therefore, in the word "origin, evolution, and knowledge." when speaking of "origin" in etymology, the greek language proposes ways. Arkhe the prefix, "origin" is taken as the starting point of knowledge (episteme). Believe it or not, the important thing is not to think about the "origin" as absolute truth, but as a historical construction of thinkers in their respective contexts, always in search of the truth, whatever it may be. So do not think that "evolution" is necessarily a passage from worst to best, as if the past had no more to teach future generations. The "evolution" contemplates successive manifestations of thought over time. Many of these are continuities, others oppositions toward their predecessors. That is, why even inquire the writings of homer, hesiod, parmenides of elea, plato, aristotle, aurelius augustine, aquinas, copernicus, descartes, galileo galilei, isaac newton, sören kierkegaard, albert einstein, cesar lattes , milton santos and many others recognized international or national wisdom lies in the following fact: they still bring us all questions, aporias, paradoxes, problems of knowledge that encourage us to think about today, the past and future in a course without pretensions finalization. For this to account for a range of thinkers, scientists can baste the history of science in its various hues, philosophy of science, epistemology and methodology, you will find elements to discuss pressing issues and current of western thought. Here, power would ask: why not present the same texts of their respective thinkers? Thinking about it, the respected writers of texts module interdisciplinary origin and evolution of knowledge presented at the end of their approaches sufficient references to start a search with commitment and rigor. It is important to note that a written form not from answers but questions. To that end, students should readers take as guidance the answers do not usually found in texts pamphleteers, religious, commercial or political. That is, you have your hands on texts that purport to put some issues on the table and invite them to a dialogue in which the only scope is to bring them to a philosophical debate, both for teaching, research is focused on , and thus extend the fruits to their peers near and far. The philosophy is more geared towards a knowledge that builds hard, dedication which often requires us too. Dedication that we find in the manual work of artisans in the composition of our narratives. That is, it is not restricted to the separation between intellectual and manual labor, as advocated by karl marx and friedrich engels in theses on feuerbach (marx and engels, 1998): "the philosophers have only interpreted the world in various ways; than if it is to transform it. " not only philosophers, but everyone participated and continue to participate in changing the world, ever, each in their own way. It is important to note here, mainly because the knowledge is not confined to the walls of the school formal institution, he constantly produces everywhere, whether in a casual conversation at the bar, on the porch, within a market or even the soliloquies pillow. That is, everyone thinks the world and make their own way in its locus, tops, niche, community, ethnic group, social group, be it where you are, whether in big cities or even in the far reaches of communication, external to the universe digital. Is still interesting to note that there is a near consensus among historians of thought in stating that the origin and evolution of knowledge or, in other words, the famous "greek miracle" occurred from a breakup or astonishment (aristotle, 1969) between logos (thought, language, speech, study, reason, concept, reasoning, among other interpretations) and doxa (opinion, common sense) as the last element of intuitive was not already contained in the first. Now doxa also composes myth, orality, plot, principle, and there is no logos mythical intuition, and vice versa: no myth without conceptualization logic, mainly because intuition is to see, do with reason (cf. Jaeger, 1989). God (teos) is the one who sees everything, omnipresence, omniscience essential to (from latin omni: all, all). We did not observe and understand the world without contaminating it with our culture. Take into account it is very important to approach the other (alter). Note that the conflitarmos is constantly

with the other, from the first moments, inside and outside the womb, that we constitute ourselves as subjects (Lacan, 1998). That is, our identity is a social construct not a metaphysical entity, independent of our historical context. And the audience is social, the other, a construction of all. Nothing strange and distant to us than the Brazilian Amazon and its rich cultural miscegenation of all national and international looks, hungry discover it to such an extent that threaten, in an attempt to tame it, transforming culturally its inhabitants with values globalized (religion, money, politics, sexuality, monoculture) and therefore condemn it to a slow death, the account-drop. Far from a blind jingoism, reflecting on economic powers, we must rethink our country from Amazon, and taking as a point of comparison the destinies of our large cities, their wounds: flood, drought, traffic, pollution, hunger, poverty, epidemics, among other ills. That is, it is up to each of us to make this book a weapon of thinking and acting clearly ethical and always willing to dialogue, which does not proceed to the flow of our idiosyncrasies ego, but with the additional views and division of what we understand as sensible wisdom, lucid and critical above all. For this, it is necessary to go through the history of thought, from the questioning of myths to the sophisticated technology of today, and realize that the critical path, as the myths of power (science - know-how - and politics - praxis) have not been strong enough to overthrow the traditional knowledge ingrained in our way of speaking, look, listen and think. The module interdisciplinary origin and evolution of knowledge promotes, through texts, beyond the philosophical-scientific self-referral of the proposed approach, the historical contextualization. For this, we first reading of history and philosophy of science, weaving relations between philosophy and science. In the second phase, introduction to philosophy, part of the broad and narrow meanings given to philosophy, logic and ethics. This is an effort to expose the process of building critical of western thought from the notion of judgment with a view to understanding its various forms - gifts in ethics, aesthetics, science and the rules that control human activities. The third, philosophy, politics and society, joined into the intricate relationship between thinking / philosophical practice and social institutions, thus promoting the interdisciplinary challenge cycle training general ufopa, whose main scope is to build dialogue between instances of thinking in different areas of knowledge. Anyway, in philosophy of science and epistemology elements and history of science have specific approaches of scientific speculations, such as questions of verifiability, induction, falsification, paradigm, among others. Questions and borderline guys to practice and scientific thinking, which is essential to show we enter the traditional reading of knowledge: concepts and definitions, Tony Braga, in which text highlights that scientific research can not go back to the wisdom built locally although this is distinct in relation to methods and models paradigmatic academic and technological. Despite the differences, the traditional knowledge achieves goals that are nonetheless similarities with the store facing the sciences. The importance of traditional knowledge is the fact that it is used as a local search tool that allows us to understand the world, or as a shortcut to produce scientific knowledge, or supplement it from popular tips. That is, we must break the space-academic institutions and promote rapprochement with the seemingly distant cultures of our daily critical and practical.

The academic focus is to provide initial conditions for a good scientific training to the student entrant in relevant dialogue with the teacher, which includes knowledge of scientific methodology guidelines, conditions necessary to encourage dialogue knowledge of philosophical, scientific and local / traditional especially in the Amazon region.

Module interdisciplinary studies in integrative Amazon - EIA covers a broad spectrum of knowledge formation on Amazon since its "discovery" until recent days, when the objects of study of "science" is no longer the mere functioning of ecosystems natural and bodies that inhabit them, and began to consider the presence of the human being as the great agent of change. The first topic presented shows that our scientific story begins with the arrival of the Europeans, who brought with clerks, responsible for detailed description of the riches to be exploited in the region. Even if the intention was not that the work of the clerks gave the kickoff for the formation of scientific knowledge about the Amazon. Still makes mention of natural and cultural assets in the region, as well as the problems arising from the exploitation of these riches at different times in our history. Then, on the theme "the geological formation of the Amazon," Ronaldo Mendes makes us understand the incredible changes in the landscapes of Amazonia occurred in a few billion years of history. The perspective of geologic time scale shows that, although there have always been a huge momentum in

the region, is the disproportionate rate at which changes occur arising from the action of man, and nothing can compare to it in the period preceding its emergence. The module itself is of amazonian environments themselves, their main characteristics, interactions and ecological relationships between them. We emphasize that the observed features in the amazon biome suffered and suffer the effects of recent anthropogenic. In the interdisciplinary theme "the history of interaction between men and environment at amazon," portrayed the occupation of the amazon territory since pre-colonial times to the present day. Easy to read, the text leads us to imagine how the populations overlapped each other, and mostly makes us realize the differences between these populations with regard to the impacts of their occupation on the environment. After reading this, the reader will surely ask: how was it possible in the past the survival of a huge indian population in this region, leaving as few marks on the environment when compared to the developmental model encouraged by governments in recent decades? In "globalization of the amazon: riches and interests", the amazon region is viewed from the perspective of international interest. Even after centuries of exploitation, amazon still has a huge diversity of natural resources (some of them not yet revealed), so it was inevitable that this region appeared on the world stage as one of its most important icons. Be motivated by the need to meet the demand for natural resources or the growing desire to preserve them, brazil plays an important role in this scenario, with the challenge to reconcile these two aspects. Finally, the interdisciplinary theme "social conflicts in the amazon", comes the issue of conflict as the result of the occupation of the region and the differences between social groups involved in this process. The text shows that the solution to the conflicts in the region depends on the development model applied in the country, nay, the results of this model. If the results favor the reduction of social inequalities, conflicts certainly decrease at the same rate.

For the closing of this acquisition phase of interdisciplinary knowledge, students are grouped in "seminars integrators" with the aim of gathering information and knowledge, according to the academic interests of the students, this approach will be on the integration of knowledge in the penalty area education and its relations with other areas of knowledge. The themes for this program must address: education for the twenty-first century; education in brazil; interdisciplinarity in education, education, science & technology, environmental education, education & healthcare, education & culture, education in the amazon, including considering the different conditions (city field floodplain) and the community school of the student-teacher. At the end of that time, students and teachers should prepare a field survey, an interaction with a real base - ibr, to integrate the theoretical knowledge to a crop of local reality, whether in rural or urban areas, in order to participate in study introductory that reality under the guidance of teachers. Express and disseminate the study to the community, whether academic or not through an integrated extension to community action. Attend the scientific closure of the first half, when the work will be presented through oral communication and banners.

### **Conclusion:**

Preparing students - and in anticipation, his teacher - to understand and know how to use that knowledge advances brought to its survival and better quality of life implies someone decides that they know how to organize their thoughts and expressions through logic and rationality communicative and that this will have decisive interference in their ability to study and learn about the world in which he lives. This is the purpose that we should be able to print in our process of development of human resources in higher education, especially teachers, to be able to understand and apply the relationship between what they are studying philosophies, methodologies, science, semiotics, and logic languages, portuguese and initially elementary mathematics and its applications, eg, a descriptive statistics, and knowing seize the advantages of technology for communications that might establish. It brings together well we have to equate between modules oec and llc.

The fundamentals, the original roots of our rationality and narratives are in philosophy and its influence on scientific thinking that humans develop knowledge about the world in which he lives. Through elementary logic is that all this will be structured rationality and express themselves to their peers, through the languages that adopt. All this will be mediated by symbols that developed and we can understand better with some knowledge of semiotics for us teachers, not necessarily as a subject area to be covered by primary but essential for teacher training. However, we also need to understand the limitations and applications of this form of rational knowledge over other forms of knowledge, as

varied between societies and individuals seemingly simplest, but often develop extremely complex knowledge. This dimension of other knowledge, knowledge of more natural, popular and strong ethnic base, we also need to develop in our analysis and teaching materials and we did not even from there maybe we can penetrate more easily into the realm of humanities and social sciences and the relationships that have come with the natural sciences, in order to build - more effectively - the relations between human beings, their cultures and environments that interest us both in the amazon and in the world today!

A second level of abstraction utility interdisciplinary education 1 (f1) of the cfi: philosophies and languages to knowledge about the realities, especially amazon (or, oec and even snd, llc and eia). The "second level of abstraction of interdisciplinary interest" for f1 in cfi: the foundations of human thought and knowledge for developing dialogue between the natural and social sciences. The fact is that we insist on scientific reflection between nature and culture, through the academic contribution, collaborate in achieving harmony between them, without which as the main issues facing the world today, almost all anthropogenic in nature and resulting in large problems that need to be overcome, lest our self-destruction. The greatest difficulty is to achieve some level of dialogue between the natural sciences and social and human as their methodological and scientific bases are very different: the first in an empirical tradition very experimental, the second basic ethnographic methodology. Surely a more thorough synthesis between them is not easy, but neither is it impossible. We must accustom ourselves to dialogue overcoming differences diachronic and synchronic reaching the similarities that can be achieved on the basis of common themes, projects, cooperative and collaborative facing the same problems. It is as if we had experts (their science) with her two two instruments (the methodology of each) to look at the same phenomenon (the specific problem) and present together (the team) the solution for a given situation. From careful observation of both, there will be moments in the same case in which the contribution more scientific empiricist offer good prospects for a greater understanding of the problem, there will be times when this can only be obtained through interviews, questionnaires or living in deep within the community. Not every one is "talking to you", but "both talking about something," the theme, design or common problem that has ... The task is even much simpler when we think of the amazon and the problems it presents. After all, aspects such as uncontrolled migration, the uncontrolled growth of cities, deforestation, forest fires, finally, all sorts of human and environmental degradation we have seen, of various types and causes, closely related to human beings and their societies with the environment in which live, what makes these sciences should provide some level of integration. In the case of f1, it is sought by both the snd module - the theoretical and methodological bases more universal - as eia, knowledge facing the region. Sint already presents what is most common among them, integrating the sciences of responsibility of each academic unit. Finally, in the case of ufopa, there is the second interdisciplinary training (f2), where the level of interdisciplinarity being developed now is more focused in different areas of the same large area of knowledge, that specific one of their own institutes, what exactly are themed to better foster the interdisciplinary approach.

It is possible, necessary and useful that ufopa, the center for interdisciplinary education can develop an academic policy, expressed by their structures, curricula and integrated programs of teaching, research and outreach focused on the interdisciplinary approach.

### References:

- Paiva, R. N & Pacheco, T. J. Orgs. *Lógica, Linguagens e Comunicação – LLC*. São Paulo, Acquerello, 2012.
- Peleja, J. R & Moura, J. M. *Estudos Integrativos da Amazônia – EIA*. São Paulo, Acquerello, 2012.
- Gama, J. R. & Leão, A. S. *Sociedade, Natureza e Desenvolvimento – SND*. São Paulo, Acquerello, 2012.
- Matos, M. F. & Morais, A. S. *Origem e Evolução do Conhecimento – OEC*. São Paulo, Acquerello, 2012.
- Lameirão, S. & Nascimento, E. *Seminários Integradores – SINT*. São Paulo, Acquerello, 2012.
- Farias, D. & Mulholland, T. *O Brasil Em Questão*. Brasília, Unb Editora, 2006.