RCMOS – Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. São Paulo-SP.
Year V, v.1, n.1, Jan/July 2025. | submission: 08/03/2025 | accepted: 10/03/2025 | publication: 12/03/2025

INITIAL TEACHER TRAINING: AN APPROACH TO PEDAGOGICAL PRACTICES IN THE BIOLOGY COURSE AT THE CUANZA-NORTE PEDAGOGICAL SCHOOL

INITIAL TEACHER TRAINING: AN APPROACH TO PEDAGOGICAL PRACTICES IN THE BIOLOGY COURSE AT THE CUANZA-NORTE PEDAGOGICAL SCHOOL

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SUMMARY

This study deals with the initial training of teachers. It analyses the Pedagogical Practices in the Biology course of the Cuanza-Norte Higher Pedagogical School, which aimed to analyse the strategies adopted by the Cuanza-Norte Higher Pedagogical School, in the pedagogical practices of the Biology course. Regarding the nature, the research was applied; considering the objectives, it was worked on the basis of a descriptive research; taking into account the form of approach, it is considered mixed; and regarding the procedures, it was worked on the basis of a field research. For the collection of data and other information, theoretical methods were used, such as analysis-synthesis, induction-deduction and historical-logical. Regarding the empirical methods, the following stand out: observation, questionnaire survey, interview survey, pedagogical test and, lastly, mathematical statistics. The population for this research was 360 students, with a sample of 108 students, corresponding to 30% of the population. The results show that there are no clear and defined strategies for pedagogical practices in the Biology course at the Cuanza-Norte Higher Pedagogical School, at least in documents, although there are some actions that do not significantly impact teacher professionalization, and there is an urgent need to work on the issue. In view of this, the participants in the process proposed some reflections that, due to the approach and justification, could serve to make a significant and qualitative leap in the training in Pedagogical Practices in the Biology course at the above school.

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Keywords: Initial teacher training; Pedagogical Practice; Biology Teaching.-

ABSTRACT

This study addresses the initial training of teachers. It analyzes the Pedagogical Practices in the Biology course of the Cuanza-Norte Higher Pedagogical School, which aimed to analyze the strategies adopted by the Cuanza-Norte Higher Pedagogical School in the pedagogical practices of the Biology course. Regarding the nature, the research was applied; considering the objectives, it was worked on the basis of a descriptive research; considering the form of approach, it is considered mixed; and regarding the procedures, it was worked on the basis of a field research. To collect data and other information, theoretical methods were used, such as analysis-synthesis, induction-deduction and historical-logical. Regarding the empirical methods, the following stand out: observation, questionnaire survey, interview survey, pedagogical test and, lastly, statistical-mathematical. The population for this investigation was 360 students, with a sample of 108 students, corresponding to 30% of the population. The results show that there are no clear and defined strategies for pedagogical practices in the Biology course at the Cuanza-Norte Higher Pedagogical School, at least in documents, although there are some actions that do not significantly impact teacher professionalization, and there is an urgent need to work on the issue. In view of this, the participants in the process proposed some reflections that, due to the approach and justification, could serve to make a significant and qualitative leap in the training in Pedagogical Practices in the Biology course at the above school.

Keywords: Initial teacher training; Pedagogical Practice; Teaching Biology.-

1. INTRODUCTION

This research takes an approach to the initial training of teachers, more specifically to pedagogical practices in the Biology course at the Escola Superior Pedagógica do Cuanza-Norte.

The choice of this theme is justified by the fact that I am one of the teachers of the Pedagogical Practice curricular unit in the Biology course and by the fact that some elements are observed in the training process of students and future Biology teachers trained by ESPECN that require some reflection, so that the praxis can be improved, thus contributing to the quality of the trainee and the provision of future services inherent to teaching. However, one of the particularities of this study focuses on the need for reflection, by the teachers assigned to the Department of Teaching and Research of Natural Sciences, on the need for qualitative teacher training for teaching Biology.

This time, and to better support the choice of the theme, it is worth mentioning that based on the unsystematic observations and informal dialogues with some of the participants in the process, namely, the head of the department of teaching and research in natural sciences, teachers and students of the Biology course at the Escola Superior Pedagógica, linked to training in pedagogical practice, it was noted that there are numerous concerns regarding the excessive theorizing and lack of practice inherent in the professionalization of teachers related to Biology knowledge, in general, and to didactic-pedagogical knowledge in particular; few simulated actions that allow a direct connection between theory and practice, listed in the skills, content and attitudes, that students must assimilate during the training process, which makes/will make them distance themselves from the educational reality. Furthermore, it is noted that the curriculum and programs of the subjects of the Biology course are very extensive, leaving aside the essential, valuing theory to the detriment of practice.

In fact, regarding the reported shortcomings, it was considered pertinent to develop this investigation, starting from the definition of the following**scientific problem:**What strategies have been adopted by the Cuanza-Norte Higher Pedagogical School for the pedagogical practices of the Biology course?

In view of this, it is particularly determined how**object of study:**the teaching-learning process. It is then established as**field of action:**pedagogical practices.

To answer the scientific problem, the following was developed**general objective:**to analyze the strategies adopted by the Cuanza-Norte Higher Pedagogical School for the pedagogical practices of the Biology course.

Some tasks must be developed to achieve the general objective, and these are the following:**specific objectives:**

- ✓ Systematize the theoretical foundations that address pedagogical practices and their importance in the teacher training process, using various research sources;
- ✓ Diagnose the current state of approach to pedagogical practices in the Biology course at the Cuanza-Norte Higher Pedagogical School;
- ✓ Describe the strategies adopted by the Cuanza-Norte Higher Pedagogical School for the pedagogical practices of the Biology course;

We believe that with this research, we will help to didactically and methodologically assist Biology course teachers, as well as students, to adopt new mechanisms and approaches to current teaching, if the suggestions and reflections brought by the participants are observed and contextualized in the initial training of potential teachers.

2. LITERATURE REVIEW

This section presents the terms and concepts that support the research. This initiative was taken taking into account the various meanings that the terms can present, which influences their compression for the intended context.

2.1. Pedagogical Practice in Initial Teacher Training

To speak of Pedagogical Practice is to deal with the alpha of initial teacher training, while the omega will be limited to the professional internship process, which constitutes the tip of the iceberg of this training. Both the beginning and the end need to be orchestrated in a single direction, triggering actions that enhance the solid acquisition of knowledge with a view to its correct application in a practical sense. However, it is necessary to distinguish here between pedagogical practice as a curricular unit and the same as an action of educational practice.

Thus, as a curricular unit, it is important to highlight Veiga (2003, p.16) when he states that**Pedagogical Practice**"is a curricular unit, guided by objectives, purposes and knowledge inserted in the school context in order to guarantee the teaching of fundamental contents and activities in the student's training process". In turn, from the point of view of teaching action, the**Pedagogical Practices**, as stated by Giroux (1997, p. 55), "are

planned and routine activities that are developed in the school setting with the aim of enabling the student's transformation from a professional point of view".

Assuming that students/trainees need training that creates a scenario that simulates educational reality, it is clear that the routine activities of the Pedagogical Practice curricular unit are extremely important for the training process, as they bring trainees closer to reality, develop in them indispensable skills for teaching performance, making them skilled and creative to deal with the most diverse situations in the educational teaching process.

Regarding teacher training, it is worth mentioning that there are at least two types, namely initial and continuing. The first type is provided with undergraduate training and the second type begins with entry into the teaching profession and continues continuously throughout the entire period of professional activity. (Carvalho, 2014).

Regarding initial teacher training, several authors defend the idea that it is a process through which a set of distinct tasks are developed, aimed at developing technical skills for the performance of the teaching profession in its most varied contexts and complexities (Barros & Jorosky, 2015; Campos, 2001 and 2002; Carvalho, 2014; Estrela, 2002; García, 1999; Romanowski, 2007).

Campos (2001), for example, believes that initial teacher training is a stage of training that aims to begin the construction and development of the professional identity of the future teacher. A year later, in his work Policies for the Training of Teaching Professionals in Autonomous Schools, the same author adds that initial teacher training aims to provide teachers with the basic scientific and pedagogical information, methods and techniques, as well as the personal and social training essential for the exercise of the teaching function. Campos (2002). In turn, and from the same perspective, Estrela (2002, p. 18) emphasizes that initial teacher training is "a process of preparation and development of the person, in order to perform and achieve professional achievement in a school serving a historically situated society".

In summary, according to what was mentioned above, we understand that initial teacher training is a systematized process of knowledge transmission, comprised of a set of phases aimed at transforming the individual's personality. If we consider what happens in the training process, we realize that all the actions developed change some of the trainee's characteristics, from the way they reflect and problematize educational situations to the way they create strategies to counter adverse situations.

2.2. Initial teacher training and the challenges of the 21st century

The technological advances brought about by globalization in the late 20th century and now in the early 21st century have highlighted the need for constant updates, adaptations and insertions of aspects that are adapted to the educational reality and initial teacher training of modern times, with a view to meeting demand. From this perspective, Andrade and Tomaz (2020), although not referring to the 20th century, are of the opinion that the purposes of initial teacher training are multiple and complex, having varied over the years and becoming even more evident in the 21st century.

Today, as Batista (2020) states, initial teacher training has been the scene of multiple transformations, both in terms of curricular configuration and in concepts that seek to place the student at the center of the process, as one of the active and participatory elements of their own learning. There are several current challenges for initial teacher training, from the adoption of practices that make future professionals reflective, creative and decision-makers (Alarcão, 2003; Andrade & Tomaz, 2020).

For Alarcão (2003), initial teacher training schools are called upon today to train professionals capable of developing quality teaching work based on the paradigm of a school for all, of stimulating the capacity for innovation, creation and intervention in decision-making and knowledge production processes and not a simple technician reproducing knowledge and/or monitoring pre-prepared programs, of experiencing a training process that has guaranteed them access to knowledge, know-how and know-how.

When looking at the author's ideas, it is clear that the current challenges of initial teacher training in the 21st century involve, among other aspects, innovation, creation, autonomy and decision-making for the creation of new knowledge that meets the current and future challenges of the global and challenging world. From this perspective, Boa ventura (2013) is of the opinion that,

> The new global scenario demands solid teacher training. The complex society in which we live requires teacher training that keeps the horizons of research open, so that teachers acquire a flexible transmission mentality, build alternatives in their classes, and avoid being prisoners of a methodological monism that is not very effective. (p. 10).

This scenario forces us to reflect deeply on what should be adopted for the initial training of quality teachers capable of meeting the current and future challenges of education. In order to train teachers, it is necessary to take reality into account and adapt practices to this reality, otherwise training will not meet the demand and requirements of the process.*priori*. The *posteriori*, it is necessary to consolidate practices, based on theoretical elements that allow the functional adaptation of the trainee and cooperation between institutions.

Criticality, organization, planning and reflection of content are indispensable ingredients for the initial training of higher education teachers, since the trainee at this level needs to be critical in order to enhance the search for new educational approaches, organizing such approaches in such a way that methodological planning stimulates learning. And, it is on the criticality, organization and methodological planning required today in initial teacher training that we rely on Freire's ideas (2012) when presenting nine (9) requirements for teaching/training as knowledge necessary for educational practice, such as the following:

1-Requirement for methodical rigor:it is understood here as being that teaching aimed at learning the issues indispensable to the formation of man and the desire to search for new, curious aspects, leading trainees to restlessness, scientific rigor in the search for information, humility and mainly persistence;

2-Research requirement:this requirement is aimed at one of the main teaching tasks, as it is based on the principle that there is no teaching without research and research without teaching, therefore it is necessary that the initial training of teachers is based on searching, on constant inquiry to find the new and contribute to scientific advancement;

3-Requirement to respect students' knowledge:here, attention is drawn to the need to look at the prior knowledge acquired and obtained by students in their communities and family environment and discuss with them the reasons for some of this knowledge in relation to the teaching of program content;

4-Requirement on criticality: It is understood here that criticality towards programmatic contents opens space for progress and autonomy in thought, hence allowing the creation of an epistemic rupture and a new way of thinking and acting on the object. The need for criticality in initial teacher training arises for the purpose of stimulating curiosity and developing the reflective capacity of the potential teacher;

5-Requirement in aesthetics and ethics: In initial teacher training, ethics and aesthetics go hand in hand, as teaching requires ethics to meet the requirements and apply didactic-pedagogical principles, while aesthetics contributes to the organization and clear understanding of systematized knowledge.

6-Requirement in the embodiment of words by example: It is understood here that example is the best way to educate and train future generations, since, in the teacher training process, the teacher must pass on the content correctly and act in accordance with what he/she propagates in his/her approaches. Here, the idea of "do what I say and not what I do" is denied. It is understood that the teacher is a reference, therefore, rigor and demand in the personification of words becomes necessary for the effective learning of students.

7-Requirement to pay attention to risk, accept new things and reject any form of discrimination: Here, attention is drawn to the need to look at the risks associated with training and educational practice, as well as the search for strategies to overcome them. In turn, the acceptance of the new with rigor and reflection is part of the requirements of modern education, as long as it is a new that values the old and opens space for a new way of thinking about educational practice. However, today we seek to seek more inclusive educational practices, allowing everyone to have access and rejecting any form of discrimination in access to and enjoyment of education.

8-Requirement for critical reflection on practice: It is understood here that in initial teacher training, a critical component of practice is needed to allow for the involvement of the dynamic and dialectical movement between being, thinking and doing. This knowledge is extremely important for teacher training because it allows trainees to critically reflect on practice yesterday, today and what can be done for the better tomorrow.

9-Requirement for recognition and assumption of cultural identity: The issue of the cultural identity of trainees is essential for contextualizing and understanding the meanings they attribute to education. However, it is important to note that the cultural identity, individual and class dimensions of trainees must be respected in educational practice and is an aspect that should not be disregarded under any circumstances.

The requirements presented by Freire are current and active in the initial training of teachers and, in addition to them, Campos (2002) raises some extremely important questions regarding the challenges of initial teacher training in the 21st century, such as "What qualifications are necessary for teaching performance in schools?" What institutions are suitable for ensuring training leading to these qualifications?" What characteristics should the curricular structure of courses have with a view to the professional qualification of teachers and what are the conditions for access to them?", and finally, "What public funding should be allocated to teacher training?

In our view, these questions presented by Campos are important, as they allow us to reflect on fundamental issues of initial teacher training, analyzing what was, is and what we intend to educate for the future. In a world of uncertainty and unpredictability, it is necessary to invest in education and in the teacher, which is why Cunha (2025) states that in this context, being a teacher, which is a profession different from all others, namely in terms of ethics, solidarity and relationship with the future, implies not only maintaining until the end the pleasure of educating one's students, but also guiding them to find their social place that today

they need to be confronted with problems whose answers they do not know, in a search that will help them from an early age to build bridges to understanding the unknown.

The application of active learning methodologies according to Bacich and Moran (2018) are also challenges for initial teacher training in the 21st century, as they allow students to be involved in activities that stimulate research, the search for solutions to educational problems as well as collaboration, and the promotion of more meaningful and lasting learning. In view of these training needs, Cunha (2025) states that,

> there is an urgent need to build a school of research and search, a school that involves students in tasks that involve various possibilities and choices; processes of interconnection and mixing; processes that with each movement become more challenging, demanding and in-depth. (p.03).

It is now understood that schools need to somehow look beyond what happens in the classroom and on its premises, as they need to ensure coherence with what life outside their walls offers and which is the real situation of all those involved in education.

The UNESCO report (1996), according to Delors*et al.,*describes in chapter IV, the 4 pillars on which education in the 21st century should be based, on which schools should organize their actions aimed at the teaching-learning process of the new generations, namely:

Learn to know: it is related to the acquisition of classified and codified knowledge that allows individuals to obtain knowledge to solve everyday life problems, it is understood that the school must create teaching conditions that allow each student to be interested in learning more and better, using deductive logical reasoning and memory;

Learn to do: is a pillar that is not separate from learning to know, as doing is associated with acquired knowledge. Learning to do is linked to the individual's professional performance and, in this regard, the school is called upon to promote a set of actions that allow the student's development in the theoretical-practical aspect, to do justice to the application of the theoretical knowledge acquired;

Learning to live with others: this pillar is the main element of emphasis in contemporary education. As it renews humanity's hope of living in harmony, despite the differences between beings. This pillar guides the school to act in the field of students' attitudes and values, in order to

combat conflict and prejudice, guide education towards peace, tolerance and understanding among all.

Learning to be:is an important pillar for/in the development of science, since education must contribute to the overall development of personality. In short, man needs to equip himself with values, attitudes and habits that value the being. The school is called to develop actions with the purpose of developing the spirit, the body, sensitivity, the aesthetic sense and personal responsibility.

You**4 pillars of education**proposed by UNESCO in 1996 are fundamental for a broader, more critical and inclusive educational approach, especially in the context of the 21st century. These pillars reflect the need for an education that goes beyond the simple acquisition of knowledge, preparing individuals for the challenges of a constantly changing world.

It is understood that the 4 pillars proposed by UNESCO are more than an educational vision; they are a response to the demands of a world that is constantly changing, in which education must be multidimensional, inclusive and capable of preparing students for complex and interconnected challenges. They promote a holistic education that is not limited to technical aspects, but also involves ethical, social and emotional issues, fundamental for human development and the construction of a more just and sustainable society.

2.3. Pedagogical practices in the training of Biology teachers

Training teachers of Biology or any other science is complex. This complexity is related to the change in the way we teach and learn. The biggest challenges in teaching today go far beyond previous challenges. In this sense, the approaches taken by Biology teachers must be based on modern methodologies and techniques that encourage students to learn so that social transformation can occur.

It is also essential to mention that teaching Biology content is quite complex, taking into account its characteristics and specificities. As a result, there is an urgent need to train quality teachers to meet the demand and requirements of the Angolan Education System.

In order to meet this need, Carvalho (2014, p. 31) highlights two stages of Biology teacher training, justifying them as follows:

- ✓ **1st Initial Stage**: occurs with undergraduate training;

✓ **2nd Continuing education**: which is the one that begins with entry into the teaching profession and continues continuously throughout the entire period of professional activity.

Both stages are important, but the second stage allows the Biology teacher to constantly overcome challenges in the educational and personal teaching process. The basic skills acquired in undergraduate education are extremely important, as they form the basis for the success and successful transmission of Biology content, provided that pedagogical practices enhance such skills and abilities. Therefore, the objectives, content, methods, means, teaching procedures, didactic principles and forms of teaching organization must be continually addressed in pedagogical practices, so that trainees learn and understand the particularities of Biology teaching. Regarding the second stage, it is understood that continuous training must be an integral part of the evolutionary process of teaching and the teacher's professional development.

Through practices in Biology, learning becomes more meaningful, because, as it is the science of life, there are aspects that, when well worked on in theory and developed in practice, give more meaning to study and life. In this regard, Cachapuz (2005 p. 91) explains that "teaching natural science content at the beginning of schooling contributes significantly to the demystification of various natural phenomena, as well as opening the possibility for questions about natural life".

In this regard, regarding pedagogical practices for the training of Biology teachers, Baptista (2015, p. 587) emphasizes that in science teaching, "pedagogical practices must be committed to promoting intercultural dialogue, that is, between the culture of science and the cultures of students". This commitment to pedagogical practices allows students to recognize the content they study as knowledge that manifests itself in their daily lives, but which at the same time has its origins in historical, social, cultural and technological aspects intrinsic to humanity.

3. METHODOLOGICAL PROCEDURES

This section refers to the methodological options that helped in carrying out the research. Here, in view of the study under analysis, we present the methodological options, namely: the type of research, the population, the sample, the sampling techniques, as well as the methods and techniques that were applied throughout the research process.

Therefore, regarding its nature, this research is considered applied, since, according to Cervo and Bervian (1983, p. 128), applied research "is that which aims to contribute to common ends. practical, seek solutions to concrete problems and seek to transform them into actions

concrete the results of the work". In the context of this research, the intention is to search for solutions that contribute to the pedagogical practices of the graduates of the Biology course at the Cuanza-Norte Higher Pedagogical School.

Considering the research objectives, we worked on the basis of descriptive research, which, according to Gil (2007, p. 19) "aims to describe the characteristics of a given population or phenomenon, or the establishment of relationships between variables. It involves the use of standardized data collection techniques: questionnaire and systematic observation".

This research sought to address the pedagogical practices of the Biology course at the Cuanza-Norte Higher Pedagogical School, since descriptive research becomes indispensable, since the facts linked to the phenomenon were described as they occur.

The description also included the presentation of the strategies adopted by the Cuanza-Norte Higher Pedagogical School for Pedagogical Practice in the Biology course, as well as the characteristics of the Practice discipline programs at the four levels, serving as a basis for finding new elements and more appropriate solutions for the current training of Biology teachers.

In turn, concerning the approach, this research is assumed to be mixed, that is, qualitative-quantitative. In this regard, Kauark*et al*(2010, p. 26) define qualitative research as being "that which considers that there is a dynamic relationship between the real world and the subject, that is, an inseparable link between the objective world and the subjectivity of the subject that cannot be translated into numbers.

In the same vein, the same authors define the quantitative approach as being "one that can be quantified, which means translating opinions and information into numbers to classify and analyze them, requiring the use of statistical resources and techniques (percentage, mean, mode, median, standard deviation, correlation coefficient, regression analysis). (*Idem* 2010, p. 27).

The qualitative-quantitative approach, for this research, enhanced the association of methods and techniques, which together determined to a greater extent the acquisition of knowledge during the investigative process, contributing to the finding of reliable results.

The population for this research was 360 students of the Biology course at the Cuanza-Norte Higher Education School from the 1st to the 4th year, based on statistical data, and from this sample 108 students of the referenced levels were selected, corresponding to a percentage of 30% of the population universe. However, taking into account

Given the nature of the research and its scope, it was considered pertinent to include certain teachers trained by the school and who are already teaching, in order to obtain information from them that is considered useful in terms of pedagogical practice. The table below shows the respective distribution of the number of students per year:

Table 1: Sample distribution by academic level

		Frequency	Percentage	Percentage valid	Percentage cumulative
Valid	1st Year	16	14.8	14.8	14.8
	2nd Year	30	27.8	27.8	42.6
	3rd Year	34	31.5	31.5	74.1
	4th Year	28	25.9	25.9	100.0
	Total	108	100.0	100.0	

Source: Author

Regarding the methods and techniques, it is important to note that several were used, however, some of them with some relevance are presented here: the analysis-synthesis method that was used to research and analyze all the theoretical/scientific foundations surrounding teacher training, with particular emphasis on Biology, as well as the statistical-mathematical method, which, among other aspects, facilitated the translation of the research problem into numbers, thus contributing to the perception of the data collected, as well as allowing us to calculate percentages and consequently prepare tables, using, for this purpose, the SPSS platform, version 2.0, which allowed the insertion, extraction and analysis of all the results of the surveys and the pedagogical test applied to the students.

As for the techniques, the following stand out: documentary analysis, unsystematic observation, questionnaire survey, interview survey and pedagogical test. All of these were essential to obtain the research results.

As for**document analysis**, it is worth noting that it is a data collection technique that allows the location and analysis of institutional or non-institutional documents, as long as they contain useful information for the topic under study, facilitating the systematization of knowledge based on the achievement of reliable results. For Moreira (2005, p. 24) "document analysis can also be conceptualized as a set of intellectual operations, aiming at the description and representation of documents in a unified and systematic way to facilitate their recovery".

Thus, for this research, this technique allowed us to locate documents from the institution linked to training and Pedagogical Practices in order to assess their impact on the problem being addressed.

Regarding the**questionnaire survey**, it is important to say that it is a research technique, widely used for data collection, using a set of previously selected questions linked to the topic being addressed in a given sample group, to obtain opinions or ideas from them. For further support, Ramos and Naranjo (2014, p. 144) state that "it is a technique for acquiring information of sociological interest through a previously prepared questionnaire, through which one can know the opinion or evaluation of the subject selected in a sample on a given subject".

The technique was applied to students from the 1st to 4th year of the Biology course at the Cuanza-Norte Higher Pedagogical School, with the aim of gathering their opinions regarding the pedagogical practices experienced in the Biology course.

The survey was conducted at different times of the day, in this case, morning, afternoon and evening, and at alternate times, judging by the organization of the institution, in relation to the levels and periods of activities. Thus, students in the 2nd and 4th years responded to the survey in the morning, while those in the 1st and 3rd years responded in the afternoon. Students selected from the population participated, constituting a sample of 108 students, both male and female, who responded to the questions presented. The survey presented 4 questions subdivided into two types: closed and multiple choice.

4. PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

This section presents the main results obtained from this investigation, among which the following stand out:

4.1. Results of the document analysis

Among the various ESPECN documents that were the subject of analysis, the one that stands out is **RPPEC**-Regulation of Pedagogical Practices and Curricular Internship at the Cuanza-Norte Higher Pedagogical School.

The Regulation of Pedagogical Practices and Curricular Internship of the Cuanza-Norte Higher Pedagogical School is a document that reflects the strategies and requirements adopted by the institution for Pedagogical Practices and Curricular Internship, constituting one of the most interesting documents for our approach.

After analyzing the document, it was realized that it is quite superficial, and that the

it deals with the end and not the beginning, that is, it gives greater emphasis to the curricular internship, being

This is the last phase of the process after all the Pedagogical Practice activities have been completed. Therefore, there is an urgent need to adopt concrete strategies for Pedagogical Practices given their importance for teacher training, as Lemes attests*et al.,*(2011, p. 03) that pedagogical practice is extremely important, as it is what allows "relating theory and practice, promoting the teacher's commitment to the search for constant improvement in teaching. One of the points that makes this improvement possible is the availability that the teacher has to improve his/her daily practice".

4.2. Results of the questionnaire survey applied to students of the Biology course at the Cuanza-Norte Higher Pedagogical School

It is worth mentioning that the survey was applied to students of the Biology course at all levels, that is, from the 1st to the 4th year, with the aim of gathering their opinions regarding Pedagogical Practices from a general and specific point of view. Among the various questions asked, the following stand out:

Is the theoretical content contextualized with the educational reality?

		Frequency	Percentage	Percentage valid	Percentage cumulative
pale	Yes	53	49.1	49.1	49.1
	No	10	9.3	9.3	58.3
	To the times	45	41.7	41.7	100.0
	Total	108	100.0	100.0	

Source: Author

These results demonstrate that most of the activities developed had nothing to do with educational contexts, judging by the cumulative percentage, which amounts to 58.3% of the sample universe. Looking at these results and in view of the current challenges of the educational teaching process, there is an urgent need to change strategies, allowing practical activities to be closer to reality, making it easier for the trainee to discuss real issues that he or she will be able to encounter as soon as he or she is in the school where they are applied.

In this regard, Mecupale (2020, p. 02) argues that "higher education institutions play a role of utmost importance, as they are responsible, at the highest level, for training human resources, in order to be able to respond to the demands of a

modern society and thus contribute to the development of society, therefore, the theory must be problematized in the educational reality of the trainee".

What else would you like to see covered in Pedagogical Practice?

		Frequency	Percentage	Percentage valid	Percentage cumulative
Valid	Preparation of the lesson plan	33	30.6	30.6	30.6
	Practical Classes and simulated	39	36.1	36.1	66.7
	Only real situations of Education	19	17.6	17.6	84.3
	Other subjects	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: Author

The legitimacy of each of the choices is understood, as each of them contributes in a unique way to the teacher training process. For example, regarding the lesson plan, it is worth mentioning that, in the teaching-learning process, lesson planning is very important, as it helps us to foresee the actions to be developed to achieve the objectives, on the one hand; on the other hand, the elaboration process is not simplistic and requires a set of actions for this purpose. This corroborates Luckesi's (1994, p.121) thinking when he states that "teaching how to plan lessons in initial teacher training contributes to the development of skills that are indispensable for teaching practice, as well as in anticipating the quality of service to be provided by the future teacher".

As for the second option, 36.1% of respondents would like practical/simulated classes to be the main focus of activities in Pedagogical Practice. In our opinion, simulated classes are extremely important in the initial teacher training process, as they bring the trainee closer to the future reality and help to develop skills that are essential for managing the process and student learning.

Aware of the importance of simulated classes in the initial teacher training process and in the set of stages that must be developed, we agree with Barboza (2012, p. 05), when he states that the simulated class activity follows the following steps:

- ✓ Preparation of the lesson plan/teaching sequence;

- ✓ Presentation and discussion of the plan;
- ✓ Reformulation of the plan;
- ✓ Application of the lesson in a class;
- ✓ Evaluation of the intervention and self-assessment of the intern.

4.3. Results of the Pedagogical Test applied to students of the Biology course at the Cuanza-Norte Higher Pedagogical School

The pedagogical test was applied to 108 students of the Biology course at the Cuanza-Norte Higher Pedagogical School, with the aim of assessing their level of reflection on Pedagogical Practice. For analysis purposes, we selected interesting and relevant topics for teacher training, as well as the justifications that each student gave.

In view of this, for the questions asked, the answers were classified as satisfactory and not satisfactory, as shown in the tables below:

During all the Pedagogical Practice classes attended by you, tell us the topics you liked the most. interesting and why?

		Frequency	Percentage	Percentage valid	Percentage cumulative
pale	Satisfies	91	84.3	84.3	84.3
	No Satisfies	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: Author

This table presents the results of the question that sought to assess the relevance of all the topics covered in Pedagogical Practice by the students, where, of the 108 respondents, 91 of them, corresponding to 84.3% of the sample, responded satisfactorily. In turn, 17 students, equivalent to 15.7%, did not provide satisfactory answers, taking into account the model found for their classification.

In this sense, we ended up giving greater emphasis to satisfactory responses, due to the fact that many of them identified interesting topics for initial teacher training and with a real impact on the exercise of the function, such as:

- ✓ The laws that guide the Angolan Education and Teaching System;
- ✓ School and the Environment;
- ✓ School pedagogical process;

- ✓ The teacher's functions;
- ✓ Pedagogical strategy;

For this analysis, Pimentel's (2014) ideas are brought to the fore, when he states that the establishment of appropriate and attractive practices can stimulate students' interest, motivation, engagement and development.**,**on the one hand, on the other hand, when they are not correctly established and applied, they can harm the processes of understanding the content and the student's involvement with their own learning and future performance.

4.4. Results of the interview with the coordinator of Pedagogical Practices and Internships at the Cuanza-Norte Higher Pedagogical School

In order to gather opinions from the Coordinator of Pedagogical Practices and Internship regarding the main strategies adopted by the Cuanza-Norte Higher Pedagogical School, 4 questions were asked, divided into two categories. Here they are with their respective interpretations: in the category:**Context of Practices and Strategies,**where we seek to assess the participant's satisfaction with the programs and strategies taken by the school, two questions were asked as shown below: the first question,**(P1)**was to try to understand the coordinator's reflections on the satisfaction of the Pedagogical Practice program, taking into account current teaching needs.

The coordinator began by providing a framework for the teacher training curriculum, stating that the Pedagogical Practice course is part of the curriculum, and therefore includes a program for the discipline that observes in a staggered and hierarchical manner all the themes that will guide the discipline's activities throughout the semester and year. In this regard, he reported that as a result of the autonomy that higher education teachers have, the school has guided, through its departments, the creation of programs that meet the current needs of the process.

Regarding the satisfaction of current teaching needs, the coordinator stated that yes, since the programs in force at the institution meet the main objective of the subject, which is to put into practice the knowledge of teaching/giving classes at the end of the Pedagogical Practice classes as such, since Pedagogical Practice is an incomplete subject and its scope ends with the completion of internships.

Still in the same category, however, regarding the second question**(P2),**we sought to find out about the strategies adopted by the school for pedagogical practices. In this, the area coordinator mentioned that the coordination he heads adopted some strategies to achieve the objectives of the Pedagogical Practice subject relating to the division of the program into contents

theoretical, theoretical-practicaland**practical,**distributed in 1st, 2nd, 3rd and 4th year, respectively. Therefore, according to the coordinator, these strategies are distributed as follows:

THE**1st Year**includes 70% theoretical classes and 30% theoretical-practical classes, arguing that in the 1st year the curriculum includes the Didactics and General Pedagogy subjects, which help with the issues addressed in Pedagogical Practice, therefore, there is no need for excessive amounts of theoretical content.

THE**2nd Year**includes 50% theoretical classes and 50% theoretical-practical classes, justifying that this division in half occurs due to the intention of excluding theoretical classes in the following year, therefore, the student needs to adapt to practical issues.

Node**3rd Year**The activities are only linked to simulated classes throughout the year. However, for the 4th year, the Internship is safeguarded, so according to the internship regulations, students do at least 2 terms in the application schools assuming characteristics similar to those of a teacher.

In the second and last category, which deals with**models and improvement of practices**, we arrived at the third question**(P3),**where we intended for the participant to present one or more suggestions for improving pedagogical practices at the school and in this, the coordinator of pedagogical practices presented several suggestions, among which the following stand out:

That the Pedagogical Practice course be taught after the Didactics and Pedagogy courses, taking into account the teacher training curriculum, with Pedagogical Practice drawing on the knowledge covered in the aforementioned courses; that the designs of the Pedagogical Practice programs be directed towards the teacher's action and performance in the classroom.

CONCLUSION

The investigation inherent in the initial training of teachers focused on pedagogical practices in the Biology course at the Cuanza-Norte Higher Pedagogical School allowed us to reach the following conclusions:

In view of the literature review carried out on the subject, it became clear that Pedagogical Practices are a set of planned, coordinated and oriented actions towards the development of skills, abilities, habits, values, attitudes and basic competences.

for the performance of the teaching function, which is also considered the central axis in the professionalization process.

The diagnosis carried out throughout the research allowed us to assess that there are in fact shortcomings in several areas, from the creation of clear strategies for pedagogical practices in the initial training of Biology teachers, to the lack of routine actions that allow the trainee to be brought closer to the educational reality, as well as the excessive theorization of pedagogical practice and a very generalized curriculum grid.

In view of this, the participants in the process who were part of the sample presented numerous reflections that allowed us to draw conclusions about what is and should be done in future actions to improve pedagogical practice both from the point of view of the curricular unit and from the point of view of practical action. However, we obtained sufficient results that lead us to believe that new reflections should be made to improve pedagogical practices in the above school, in general, and in the Biology course, in particular.

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