

# ANALYSIS OF PROFESSIONAL PRACTICES IN THE BACHELOR'S DEGREES IN MATHEMATICS AND SPANISH LANGUAGE OF THE POPULAR UNIVERSITY OF CESAR FROM THE PERSPECTIVE OF THE TENURED PROFESSOR, ADVISOR AND PRACTITIONER.

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## Summary

*The preceptor must be qualified, accredit some pedagogical update, have studies corresponding to their bachelor's degree or related work area, identify the subject, the topic(s), the educational intention of the pedagogical action. The following aspects will be considered in the work of the advisor: the orientation strategy and how to implement it, the ability of the family counselor to help, the objective of the private sessions of normal and remedial groups, the special activities that are organized in the school (retreats, gatherings, visits, meetings with parents). Perform the definition and analysis of each item, specific calculation and weighting of the score. Provide tools to managers so that they know how to analyze and discuss the reports. Give suggestions to the advisors so that they can elaborate their self-criticism. Encourage self-analysis of one's own role. The purpose of this paper is to show the results of a research that sought to analyze professional practices, based on the opinions of the different actors of the Professional Practices (hereinafter P.P) that are carried out in the Bachelor's Degrees in Spanish Language-Literature and Mathematics of the Popular University of Cesar; on this occasion we will focus on them from the position of teachers, tutors and advisors, student practitioners. The concern that began this work focused on the professional practices carried out by students who wish to dedicate themselves to teaching. It is considered a fundamental part in the training of future teachers, since it enables them to insert themselves into a school reality, allowing them to take the disciplinary knowledge they learned over the course of the years that the career lasts as propitious to use on a daily basis.*

**Keywords :** Professional Internships, Bachelor's Degrees in Mathematics and Spanish Language, Popular University of Cesar.

## 1. INTRODUCTION

With respect to the Bachelor's Degree in Mathematics and the Bachelor's Degree in Spanish Language in charge of the Faculty of Basic Sciences and Education, the development of this research has been considered pertinent in order to analyze from the perspective of the three university actors (tenured, advisor and practitioner) the professional practice in both degrees, as well as from the perspective of the academic authority, to optimize the pedagogical processes aimed at identifying and specifying the authentic purposes of education oriented towards the



integral academic-scientific and human formation of the student. To this end, training in the disciplines themselves and the acquisition of the necessary knowledge to teach is essential, as a starting point to propose the development of the competencies required to be a teacher in a school discipline.

Professional practice in the bachelor's degrees in Mathematics and Spanish Language is a training space for the development of specific skills in the corresponding areas. For the development of internships in both degrees, university policies have revolved around the implementation of the Internship Regulations for Mathematics Courses and the Practice Regulations for Language Courses, with the regulatory support of each of the Departments constituted in the respective Academic Unit. Institutionally, students carry out internships in the official institutions of the City of Bogotá and the circular cities formed by the Colombian Association of ACI Universities.

### **1.1. Context and Justification of the Study**

Therefore, the National Congress of Educational Research states that "research is the key to advancing in the understanding of knowledge, and in the generation of new knowledge, therefore, all expressions of the scientific discipline must find a sufficiently solid support in educational research" (2007, p. 12). Thus, the knowledge, understanding, acting and reflection that are advanced from the processes of Professional Practices cannot be alien to the research processes that allow the construction of knowledge and therefore identify the problems associated with the practice, in order to seek strategies to improve these institutional tasks or of interest for research on training.

This research process arises from concerns that are based on the questioning and permanent analysis of the practices of the Faculties of Education and Engineering, specifically the professional practices of the Bachelor's Degrees in Mathematics and Spanish Language, which have always been apprehended as key processes for teaching and learning. It is therefore necessary to delve into how the practice is assumed as a key reference for training in human talent schools. In the same way, it has been a process in which the changes made in the curriculum have been evaluated and reflected, mainly in the designs of professional practices configured in the themes of ICT (Information and Communication Technologies), strengthening of Research, Innovation, and in the development of productive Pedagogical Projects. from the Educational Project of the Faculty-PEF.

### **1.2. Research Objectives**

1. Record the number of hours of internships per subject generated in the bachelor's degrees attached to the Faculty of Humanities and Education. 2. To evaluate the contents of the internship subjects from the dual training approach. 3. To record the actions carried out by the subject holder, the assistant and the advisor of the interns in the corresponding academic units for the development of professional internships. 4. To analyze the support provided by the institution to the holders and advisors of the professional internship subjects and the way in which the groups are distributed. 5. To know the opinion of the holder, advisor and practitioner about the importance of the activities they carry out in the field of Professional Practice. 6. Evaluate the activities carried out by the holder, advisor and intern around the design, development, evaluation and registration of the subjects linked to the internship area.

- General objective: To analyze the professional practices of the Faculty of Humanities and Education from different points of view (tenured professors, advisors and interns).
- Specific objectives:

### **1.3. Methodology and Scope of the Study**

With the completion of the extramural internship, the student comes into contact with another scenario, not only educational, but also social, which will initially allow him to confront the conceptual models of knowledge and the educational and pedagogical techniques that he has learned in training, and with practical experience in the classroom, generating a clash between what he has experienced and the scenario in which he or she works. All of the above are nothing more than strategies and situations that allow the construction of their own knowledge based on reflecting on their doing in and for a given educational context. That is to say, the student, with the completion of the extramural internship, not only has the opportunity to come into contact



with an unknown environment that allows him to work in flexibilities of educational logics, but, in turn, he must enrich his pedagogical and research practice in contact with new relationships that, in addition, society demands preparation even Anchorage 104 Context Professional Practice and Extramural Internship outside the context. Although one of the functions of the University is general knowledge, it is also true that it must be oriented to the problems of its environment, in our case, to the questions that arise in the institutions where educators carry out their training.

In students in the 8th grade of basic education, which implies that in many cases, for future teachers, the first direct contact with students in the condition of "intern" is in institutions with almost no projection, either because there is no compliance with the minimum required or simply because the supervision focuses on paperwork rather than on monitoring and orientation to students. With the above, it must be said that demotivating experiences significantly affect the practitioner's stance towards teacher training and, in many cases, in the future towards the institution in which he or she was professionally trained.

## 2. THEORETICAL FRAMEWORK

Therefore, these practices are the stage for the application, contrast and refutation of the theoretical and practical knowledge acquired during the training process of professionals in training. In our bachelor's degrees in mathematics and Spanish language, the professional practice is articulated from different areas of student training in the bachelor's degrees in mathematics and Spanish language offered by the Faculty of Education of the University of Quindío. The Faculty offers two bachelor's degrees in the face-to-face modality, which entails that students carry out a couple of professional training practices in two different scenarios: internal and external, at different levels of training in which the student is linked to the educational work.

It is the educational space that allows the student to produce knowledge about professional practice, based on direct contact with reality, inside and outside the educational institution. These spaces are fundamental in the training of the student from the logic of competency-based training (Decree 272 Art 1°, 2007) and the model by cycles proposed by the University of Quindío (Institutional Development Plan 2009-2019). According to the curricular guidelines, professional internships "have a double purpose: to consolidate from practice the knowledge, skills and values developed in the course of academic training and to favor the approach of the future professional to the context in which he or she is expected to contribute. In the professional internships, students carry out intervention work, monitored by a teacher who assumes the role of advisor, in which they apply in an innovative, critical and creative way the knowledge and forms of their area of training in order to solve problems of the context".

- Professional internships

### 2.1. Professional Internships in Higher Education

There are four theoretical axes of the theoretical foundation used to describe and assess professional practices in the field of higher education: the visions on professional knowledge and the learning of professions seen in four moments of the recent history of education, the theory of situated knowledge and the theory of activity, the work-based learning approach and, finally, Problem Solving and Action Research. From the first axis, and resorting to the theories of intellectual development and the didactics of the disciplines, we emphasize that the historical tension between general knowledge and professional knowledge is well known. As a result of the rise of personalism that took place at the beginning of the twentieth century and the concomitant growing importance of the social sciences in the field of education, active pedagogies began to consider eminently the social dimension of learning, situated in the context of professional work.

The issue of professional practices in higher education has been widely studied in the national and international context, both from the perspective of the political and legal spheres, as well as in studies of the proposals advanced by higher education institutions. Some of these studies approach practices from the notion of problem situations in which the student is able to apply, to issue critical and ethical judgment, and to transform the methodologies and tools of mathematical knowledge into social and communicative practices that respond to the specific needs of their



context. Identify the theoretical line and concepts related to professional practices in higher education, specifically in the bachelor's degrees in Spanish Language and Mathematics.

## **2.2. Importance of Professional Practices in Teacher Training**

Varsavsky names a theoretical classification in relation to the names assigned to the practices. It calls "early practices" those carried out at the beginning of teacher training within the framework of the career; "Career practices" in the middle of the professional training process, show stable characteristics and typical of the future space intended by the teacher (primary education, initial education, secondary) and "practice in practice" materialized in common edges with transitions to a space of professional practice that we locate generally, although not exclusively, at the end of the training period in the educational context itself. Plotti's proposal to assume practices as the co-constructive axis of the practical subject to be taught by the teacher is interesting. Practice is inseparably theorized and theoretical.

The importance of the practicum or professional practices that students carry out from their insertion in the remote past highlights that it is an approach to the field of action where they hope to practice. Guided practice is the real alternative that the teacher has to practice his work through a proactive and situated approach. Currently, this possibility of professional learning provides the necessary tools so that, based on them, the student is in a position to respond to the complex situations of teaching.

## **2.3. Models and Approaches in the Realization of Professional Internships**

The Academic Council of the Academic Unit will be made up of representatives of the different departments that constitute it, as well as representatives of the teaching, non-teaching and student faculties in accordance with the regulations. Teacher training adapted to a new reality, under the slogan of innovation to effectively reach the student, not only involves all pedagogical, psychological, technical, didactic knowledge, as well as ethical values and cultural sensitivity, but also requires a constant investigative attitude to try to get to know this new consumer of teaching. To do this, it is necessary to take into account the multiple factors that influence the integral development of the personality and, consequently, in the teacher's planning that helps the student in the construction of knowledge, guides learning effectively and adequately evaluates learning and development.

The Faculty of Humanities and Education Sciences (FaHCE), in the province of Buenos Aires, aims to train research teachers and professionals committed to the transformation of the educational and social reality, with a solid scientific foundation, a deep cultural sensitivity and a clear conception of professional ethics, strengthening the bond that links us with education and the history of our country.

The structure of professional practices in each of the careers of the Faculty of Humanities and Education Sciences, as it was one of the first faculties created at the National University of La Plata (the University Reform Law of 1918 abolished the faculties; when the Faculty of Humanities was created, the institutes and related laboratories became dependent on this creation). The intermediate qualifications of the teaching staff, integrated in this case into the bachelor's degree, also influence the structure: excitement of information or meeting, for the intern, the arrival at the institution where he or she will carry out his or her training internship. During the first meeting, the student acquires information about the organization of the institution.

## **3. RELEVANCE OF PROFESSIONAL INTERNSHIPS IN BACHELOR'S DEGREES IN MATHEMATICS AND SPANISH LANGUAGE**

Blanco and Onrubia, in their article Learning activities in the university classroom: effective practices from the students' perspective, conclude that teachers in engineering areas focus fundamentally on a teacher-centered learning model (content transmission, focused on the teacher's explanation, questionnaires with questions of a single intellectual level, tasks inappropriate to the student's level, tests with little variety) and those in areas of natural and exact sciences have evolved (as an area) to a student-centered learning model (with student-



centered activities, where they plan, select, execute, monitor, evaluate, and reflect on their learning).

On the other hand, it is of utmost importance to offer students spaces to approach culture, for example: courses aimed at the knowledge and management of the language (study of its linguistic properties, theoretical foundations on speaking, listening, reading and writing), its historical and socio-political context; to know how to accept and respect their ways of being and seeming, their manifestations, to handle and take advantage of this ideological richness, the literary constructs (metaphorical, abstract) according to the professional needs of the moment. In the discipline of Mathematics, its academic practice tends to the consistency of procedures and the validity of results, the understanding of their mechanisms and their logical justification. It is expected that what is considered essential for students to become future mathematicians is what guides the professors of the postgraduate degree in mathematics to define criteria for research on the modality of Professional Practices. In addition to the previous discipline, we find the proposal of C. Alsina where he proposes a set of mathematical knowledge necessary to address the situations that a technician or a professional belonging to a specific discipline must face.

#### 4. ACTORS IN PROFESSIONAL PRACTICES

In relation to the Practicum in Spanish Language, the action of a supervisor or advisor defines this figure of the teacher-tutor who guides students in their contacts with the system at different levels. The contents of the training in the Practicum are varied. There are agreements between the teacher responsible for the Practicum, the specific person in charge of this module and the coordinator between the teaching staff of the degree to guarantee its quality. However, each teaching can make its own contributions if it deems it appropriate. Knowing how the accompaniment and evaluation of the practices is carried out is especially disturbing. The collection of the data we have analysed has been mainly through a closed questionnaire of computer analysis, administered by the students of the courses that we present to you.

Precise, and virtual feedback. The referents of the Ti and Ta Professional Practices are the tenured professors and advisors, respectively. The latter participate in a double leadership of the PP; they accompany their students during the Professional Internships, but their role begins much earlier, by presenting and suggesting proposals that can be consolidated in the specific fields of training. Carrying out these actions requires certain specific knowledge and skills: training in specific content for the development of professional practices, knowledge of the level and identification with the professional profile of the specialist, as well as skills for intervention in professional scenarios. Although the Tenured Teacher (DTi) plays a decisive role in the articulation between the specific knowledge of his discipline and professional practice, the desirable professional profile is characterized, according to this author, by his ability to organize effective action guidelines, individualize teaching, mediate appropriately between knowledge and students, assuming affective commitment and a project of cooperation with others.

##### 4.1. The Tenured Teacher

The analysis of the answers described below organizes the data both from the traditional curricular perspective and from the perspective proposed by Gimeno, considering three ways of looking at the curriculum: 1) a written program (training project of the bachelor's degree), 2) in teaching practice, 3) in the action of evaluating learning.

This brief paper describes partial results of the research in the Education Curricular Project with the answers of the Tenured Professors linked to the Bachelor's Degree in Mathematics and the Bachelor's Degree in Spanish Language. In a related document, the results of the Mathematics Advisors in the last cycle of Professional Practice were presented.

In this training process, we ask ourselves: how do your teachers understand the bachelor's degrees in Mathematics and Spanish Language at the Popular University of Cesar? What is the relationship between what is studied in undergraduate degrees and what is observed in schools? This uncertainty surrounds the doctoral thesis proposal and it is interesting to explore the perspectives





of the three actors involved in the development of Professional Internships: Professors, Internship Advisors and Student Practitioners.

As teachers of the Faculty of Education, from the process of training students, we consider all the factors that intervene in their educational process, knowing that this takes place not only at the University, but also in the field of action of the discipline, such as the school.

#### **4.2. The Professional Internship Advisor**

The development of their professional academic practice is focused on the pedagogical and evaluative accompaniment of the same. According to the Consulting Planning, the professional internship advisor has a basic resource, which is the written material called "Consulting Planning", which will provide all the pertinent information to plan the meetings of the assigned groups during the practice consulting. On the other hand, there are two situations that occur normally during the development of the school year: students who excel and those who need some type of support. In both cases, the advisor has a job to fulfill. On the one hand, it must establish and disseminate its selection criteria, which must also be inclusive, providing the same opportunities for those students with or without support. On the other hand, assuming a leading role in the prediction of those students who could possibly increase performance, committing to the corresponding advisors to carry out the pertinent actions.

The concept of counseling defined in the Institutional Plan for Comprehensive Teacher Training (PIFDI) is related to a work carried out by a teacher who joins the field, is academically competent in the same discipline and who also has training in education, in academic, evaluative and investigative processes who are accompanied by training in the praxis of students. According to the regulations for the work of the students in the internship, the internship advisor, who must be a half-hour teaching career teacher, must accompany the beginning of the professional internship by providing guidance for the diagnosis of the educational scenario, through the following aspects: identification of the educational actors, characterization of the context, identification of the central problems and delimitation of the educational problem chosen as the object of study. Accompany the planning of the didactic intervention project corresponding to the professional experience and its implementation, at the various moments of the practice, through the following aspects: evaluate the relevance, coherence, clarity and internal solidity of the project.

#### **4.3. The Practitioner**

In a forceful way, we have that all participants agree that the student is thirsty for knowledge and what really matters to him is to receive novel experiences and typical of the context in which he develops (P1). It is clear that the student who becomes an intern is positive, proactive, an information seeker, participatory, and proud. In other words, all this increases their interest and availability to learn, but not autonomously. The teacher who leads students to autonomous work must take into account three aspects: 1) the degree of intellectual maturity of the student, 2) the nature of the content and 3) the reason why the student has decided to study this subject. In relation to the attitude of the vocational student, a lexicon emerges with which Sosié Dans et al. intend to assess the social and personal dimension of the student's attitude towards his vocation, as well as his attitude towards the acquisition of autonomy and initiative. It is composed of two subscales: Attitude towards the acquisition of autonomy and initiative.

As for the student who becomes an intern, P3 agrees with P2 when he mentions that, despite the fears, the intern is always enthusiastic about receiving information that generates the necessary strategies to enhance his teaching practice. Additionally, he mentions that although the practitioner hesitated at first in the course of the teaching practice, by the end of the observation he demonstrates authority and security in the group. They realize that it is not a matter of knowing more than they do, but of knowing the discipline and the material on the subject well to potentiate all the learning of their students. To the above, we can add the lack of familiarity with the institutional environment. This can manifest itself when the practitioner has not yet fully mastered the management of the environment, mainly attending to rules, schedules, specific roles, among others. This situation can lead to an inertia in the activities carried out by the teaching practitioner that does not favor, in most cases, a permanent reflection of his or her own process.



## 5. RESULTS AND ANALYSIS

In relation to the activities, materials and evaluation in both mathematics and Spanish, they state that they describe a set of activities and resources in general for the entire practice, and only some mathematics headlines give rise to the activities included in each intervention of the practitioner. In addition, these results are mainly due to the demands of the subject, for example, the holders with the first-year professional internships. A set of observations is incorporated in the following terms: a) field practice: observations, interviews, (pre)diagnoses, documentation, etc., and a visit to an educational space. Each intervention must be recorded in the textbook in the way that both the teacher and the researcher have preferred, and the reflection resulting from this intervention that each one has carried out.

In this section, the most relevant representations of the study are presented in relation to the different activities, materials and evaluation proposed to the interns; the forms used in the tutorials of the internships; the influence on the description of the work of the degree in mathematics or Spanish language taken by the interns, the subject for which it is competed or the type of school; and the school in which the work of the advisors and owners is carried out on a daily basis. Based on the results presented, we proceed to instrumentalize a model of daily life for the work of students-as-teachers, taken from Hoyos (2013). Likewise, we present a work option for any of those involved in the PP, which consists of an instructional model where the academic implications of each of those involved in the pedagogical diagnosis cycle are foreseen. This model was decided to be presented in general so as not to make specific reference to the literature of each discipline, since no specific effect was found on interdisciplinary interprofessional collaboration (relationship science) in each of the axes.

### 5.1. Perceptions of the Tenured Teacher

The central finding of this study shows the existence of significant distances between the perceptions of professional practice in relation to the work of the tenured teacher in relation to the activities. Consider, for example, that more than 50% of tenured teachers do not visit their advisors to give or receive information when it is considered a fundamental variable for the significant learning of the practitioner related mainly to the ineffective formative accompaniment offered, or in other words the episodic nature of the visits. This assumption in repetitive management or stability is maintained for all activities associated with professional practice, showing that a higher percentage of tenured professors feel or think that orienting themselves to launch a series of algorithms on how to do, organize and regulate professional practice is an effective vehicle for the practitioner to reach the effective application of the theoretical plane to the real world. instead of assuming a foundation in and from practice.

### 5.2. Experiences of the Professional Internship Advisor

As for the dubious legitimacy, that is, the plausibility, of the institutional work, "it established material-ideological dilemmas" and faced "problems of competition, leadership, hegemony builds, challenges, negotiates and writes a few days after the event" and also considered the institutional function as "essentially problematic; it is not given, it is in dispute." For this reason, he occupied himself with "building it... from political conviction, institutional self-definition, academic regulations and the historical slippage of institutional work". From a theoretical commitment, I understand the passage from action to conscious action. Hoping to achieve intelligent action, I articulated the passage from communicative action to strategic or instrumental action, back to institutionalization in a continuous cycle that permanently needs the revision of the place of theory and practice in institutional dynamics.

As a professional internship advisor, I focused on fulfilling the commitment assumed from teacher training and from professional practice. For this reason, not only were mechanisms established, I deployed the necessary resources that would allow me to transform my professional preparation based on the movement of my performance. Particularly, I tried not to establish distances between the forms of teaching, proceeding, finishing off by understanding that advisors and those advised can have similar problems. Although I understood that I had to follow a methodological process, I tried to exercise it following "a certain order"; but understanding that "if not, it is funded" in some



situations, that the process could be created "as the situation needs it". In addition, I not only advised but also tried to accompany the sector in the development of a political formation. With respect to political guarantees, the tools I took from the consulting practice were deployed within a theoretical-political framework, using "theoretical alienity" to guide the advisors. In practice, I was able to confer the quality of advisor for the very commitment to the training of future mathematics professionals.

### 5.3. Practitioner Opinions

What originated the problem, from my teaching experience in this pedagogical work, is the impossibility of matching the training received at the University with the requirements and desires for change experienced in the school as a place of practice. The distancing places the practitioner in a very passive position within a practice that demands him or her to be increasingly active not only in the face of the overaccumulation of his or her functions, in the arduous cycles that translate into the equivocal conviction that the management of the school and the group, combined with the methodologies offered by his or her first training; plus goodwill and personal effort and good relationship with its practitioners, will be sufficient in their training process.

## 6. DISCUSSION OF RESULTS

The teacher says that he or she is in charge of reviewing the lesson plan. To give an opinion that the activities are in accordance with the students "making pertinent observations and proposing corrections", (Advisor 3). The advisors mention that the interns participate little in the classes during the PCP "simply and give the class" (Advisor 3), they limit themselves to "only with the observation of the Planning" and their participation is minimal, but in relation to SPP "they already have greater confidence, they help to give the classes, they monitor the group, they take photographs at the end of the session on whether the learning is fulfilled" (Advisor 1). The teacher believes that the practitioners should not participate since they have not yet completed their training. So it can be inferred that although there is a willingness of the advisor (Advisor 5) perhaps the practitioner underestimates the work he does, about how he takes as a reference the material found on the web (Advisor 1) which decreases his participation, he does not get involved enough in the degree (Advisor 5) restricts the use and access to ICTs.

The results: The adjectives most used by the tenured teacher when observing the practice of the mathematics degree practitioner were regular with 9 resources, good with 5 resources, excellent with 3 resources and bad with 1 resource. As for the Spanish language degree, the adjectives regular and good were presented with 4 resources, while bad and excellent with 2, in each case. It can be observed that the most used adjectives were regular and good in both degrees, that is, apparently, the teachers consider that the practice of their students is at a satisfactory level of performance. The two teachers emphasize the theoretical approach, both in the PCP and in the SPP, indicating the basic sections that they must implement in their lesson plans and a gradual structure. The interns report that they have had few opportunities to "help" the students in both the PCP (2) and the SPP (6), two of the interns only follow the practices they do at school (19), 41% indicate that they make modifications following the suggestions of the advisors, but do not end by saying if they actually intervene during the class.

## 7. CONCLUSIONS AND RECOMMENDATIONS

At this time when the Academic Council of the Popular University of Cesar opens the discussion on the curricular reform of undergraduate programs, it would be propitious to discuss and rethink the role of professional practices and pedagogical orientations for teachers and students for the integral training of educators; in spaces for pedagogical dialogue and exchange of ideas with the purpose of broadening perspectives on the work of the programs, favoring coherence between pedagogical practices, ways of understanding and remaking the disciplines, and types of training. From this point of view, it is also necessary to deepen the theoretical analysis of the formative approaches from which the practices are being interpreted, if emphasis is placed on practical professional training, on the development of competencies, skills, or if, on the contrary, from the





theories of human formation and meaningful practice of knowledge the practices of the programs are addressed.

With the analysis of the information obtained during the development of this research, it becomes evident the need to: - Critically question in the bachelor's degrees about the type of relationship established with educational institutions, to identify the impacts that school teaching practices have on the shaping of the professional practice of the university practitioner. - Promote the space for categorization of professional practices, through situated, flexible and actively reflective questioning. - To propose a follow-up to the transformations of practices, from a deep clinical perspective on these processes of change.

Our research among the bachelor's degrees in Mathematics and Spanish Language of the Faculty of Education of the Popular University of Cesar has allowed us to identify the need to redefine and rethink professional practices from a critical evaluation that allows them to advance and evolve in order to fulfill their formative function based on meaningful know-how.

### **7.1. Synthesis of the Findings**

In the field of HEIs, the inclusion of social environments and professional practice in student curricula, from the perspectives of academic training, engineering and student research in most HEIs, has been developed in a limited way if we analyze the different documents that govern professional and student training in Colombia. In addition, in the regulations for visits to verify initial conditions and renewal of the qualified registration of undergraduate programs, especially with respect to the proposed pedagogical design that supports the practical work environment: the didactic strategies understood in their broadest sense, both of validation of knowledge, professional practice in the strict sense, social service and the corresponding professional praxis; while some postgraduate programs organize doctoral training nuclei or modules, whose characteristics are similar to those of the formative moments of the undergraduates, here called experiences.

The texts found in the theoretical category of the HEI show the importance that society, the institution and the laws have had and still have in the evolution of the formative role that teachers must fulfill to give professionalization to each of the future professionals in their specific place of action. Likewise, the teacher as a professional, who in addition to having to master the content he is going to teach, must do so from a knowledge that is conceived as sufficiently competent and formative, and not only to evaluate the teaching performance, but also to promote changes, where his knowledge is given from his relationship with the teachers in practice, with himself, with the contents and with the students.

### **7.2. Recommendations for Educational Institutions**

The formation of educational projects implies for the teacher to have assiduous contact with the reality in the school, to develop a scientific attitude for observation and intervention in real spaces and the analysis of the local context and to use this data for the design of strategies for the construction of professional knowledge and know-how. For this reason, it is necessary for the institution to form in its working group (teachers, parents, students...) a community of teachers who exchange their knowledge, who rely on the work of teaching, who have a systematic record of the situations, processes and results of their action and who permanently reflect to improve their educational action.

The proposals are based on the results found and are summarized below. The first recommendation for the institution involved in this research is that they should establish, through the IED team, the processes of accompaniment for the analysis, planning, development and evaluation of the Professional Practices, with a view to the formation of spaces for the professional growth of the teacher, being aware of the important role that must be fulfilled from their management in the development of educational projects in which internal and external and that respond to the educational needs that arise in the educational community, through the construction of networks that allow the transmission of scientific knowledge using the appropriate technique and associating knowledge with the needs, problems, values, circumstances, experiences and motivations of the teachers that subsequently take place in the classroom by the students.



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