

Technological Analysis of Pedagogical Practices in Colombian Public Schools: A Case Study of Valledupar in Mathematics, Spanish Language, and Natural Sciences

**Wilcar Damian Cifuentes Alvarez, Maria Alexandra Chirino
Kammerer, Freddy Enrique Sierra Carrillo, Roberto Antonio
Martínez Medina**

Universidad Popular del Cesar
Email: wilcarcifuentes@unicesar.edu.co

Within the framework of the institutional improvement of the Popular University of Cesar, and seeking to replicate what was done in 2012, by the Jorge Tadeo Lozano University of Colombia, which carried out a project called Pedagogies on the Move, which is presented as "an opportunity to reflect on and support the pedagogical work of schools". In 2013, significant progress had been made in the knowledge of 16 schools in 9 different regions of the country. The objective of this research is to understand the world of pedagogical practices within the regular classrooms of basic primary and secondary education of Colombian public schools in Valledupar, Cauca, Caldas, Córdoba, Santander and Valle del Cauca, in the fifth, sixth and seventh grades. It seeks to inquire about: The pedagogical logics - what it means to learn and how this process is promoted - that guide teachers; the pedagogical practices they carry out in classes of mother tongue (Spanish), mathematics or natural sciences. Under the epistemological and methodological approaches of ethnography, based on the assumption that the teacher is not a mere executor of pedagogical norms or curricular guidelines, nor a solitary subject who invents them, nor does he limit himself to listening to what his administrative superiors or his expert advisors tell him. In addition to this, that each teaching practice, for each one, is associated with its own pedagogical logic, the daily teaching practices in their own schools are made known.

Keywords: Pedagogical Practices, Ethnographic Research, Colombian Education.

1. Introduction

The following document on pedagogical practices consolidates the proposal for analysis and results of the homonymous research that has among its objectives to describe and understand

existing variations in the pedagogical practices of mathematics and science teaching and that, given the characteristics of the sample, are subject to conditions of the school institution and to the relationships of these with basic properties. Specifically, it studies how these practices are differentially deployed in school contexts with different socioeconomic profiles.

Pedagogical practices are part of a broader system, in which they are immersed, to a greater or lesser extent, "building and redefining themselves permanently". However, the understanding of such practices requires an analysis related to their context of action, which contributes to the interpretation of other pedagogical aspects, critical for the understanding of the role of the teacher. This argument places pedagogical practices between the hermeneutical didactics of which García Moriyón spoke, which starts from the text and places it in the context of them, in a global process that will end up bringing together all the aspects of curricular development and in which it includes the various discourses or expressions that are used to talk about these aspects. Consequently, the study of pedagogical practices requires a contextualization that measures the action of the subjects involved; Let us contribute to the limitations that arise when carrying out an analysis of pedagogical practices in context, which we cannot avoid as a researcher.

1.1. Definition and key concepts

Some authors refer to the pedagogical practices of teachers about what they do, that is, their routines, beliefs, criteria and personal styles to approach their instructional work, the relationship established by the professional with their knowledge and their work; of the problems and obstacles it encounters along the way and the answers it offers to them. However, the relationship with knowledge, the principles that guide pedagogical decisions, the methods of advancement in the intellectual plane of students, the orders of difficulty and even the dynamics of curricular designs contribute to the professional and particular identity of each school institution.

The adjective "public" is used to emphasize that the practices described do not focus exclusively on teachers, but rather highlight the policies and decisions that have been adopted at the macro level (i.e., from the Ministry of National Education and the Secretariats of Education) and that guide practices at the micro level (i.e., in classrooms) that seek to intervene in the teaching-learning processes. By taking an ethnographic approach, that is, looking at the cultures and values of the different actors, it seeks to highlight the complex relationships that occur between the socioeconomic, political, sociocultural and systematic factors that affect the development of pedagogical practices and the improvement of the educational conditions of each institution. In this sense, throughout the book we sought to show how practices are contextualized, that is, that they are constituted by these elements. As part of the macroculture, each school has its own culture that guides the actions of those individuals who make it up. Within the school there is a diversity of interests and orientations that confront each other, generating different micro cultures. On the other hand, the institution must interact with its macroculture, nourishing itself with resources and supporting institutional educational policies.

1.2. Importance of pedagogical practices in the educational field

Good pedagogical practices in basic secondary education help to train critical, proactive,

autonomous, entrepreneurial students, committed to their reality and their sociocultural context, with leadership, organizational skills, group work, collaborative work, argumentative and with competencies in accordance with the demands of this knowledge and learning society, required to continue university studies and for their daily lives. work and professional, to make decisions and face the challenges involved in their personal and intellectual growth, and also to consider the unstoppable opening and transformation of information and communication technologies to educational practices. Factors such as the rural environment in which the IEO San Pablo de Elías is immersed entails and implies a complex process of educational intervention that contributes to the sociocultural change of the region. The pedagogical work that must be carried out by a teacher concerned with the development of intellectual and formative processes must involve both students and the family and community fabrics built historically and socially.

Evaluation strategies in the classroom are usually based on the theory of behaviorism, which conceives the student as a subject that is molded by the teacher, and learning as a series of changes related to behavior, in which memory plays an important role since they are propositional structures on which logical operations are carried out. This type of learning is based on mechanical, repetitive, rote and information storage learning. In a classroom understood as the place where meanings and understandings are constructed, shared, confronted and reconstructed with respect to a given knowledge, event or social scenario, the student-teacher relationship is established to share knowledge and facilitate the student's understanding of a specific field of learning, promoting its personal significance in learning processes. Likewise, the living and daily use of a scientific language guarantees new communicative income to students, enriching in the same way the horizons of experiences of the future teacher. Generally, at present, a clear intertwining, a mutual enrichment and a bidirectional direction and validity are highlighted in the research.

2. Theoretical framework of pedagogical practices

The training of professionals in education, both in values and in disciplinary knowledge about didactics, pedagogy and different areas such as mathematics and language, in institutional contexts internal and external to the educational center is of vital importance, with the main purpose of achieving significant learning with a view to transforming and improving the living conditions of children and families in the complex context of solving problems in the daily living. Diverse research on education and training processes insists on the need to look at and recognize the role of teachers, as subjects of training who intervene in a mediate and immediate way in teaching and socialization processes, within complex contexts that are permeated by different influences (institutional, curricular, epistemological, family, among others) that influence differently in a particular pedagogical place and influence the educational activity in an unexpected way. Therefore, a demanding understanding of the activity and the subject must be immersed in a set of interactions and relationships with the various conditionings that characterize the pedagogical event.

For some decades now, an auditing system and curriculum designers have been established in Colombian education who decided to change school plans and programs without realizing the conditions in which pedagogical activity is carried out in school. Notwithstanding what has

been said, the conditions of the pedagogical function have not been taken into account, nor the ways in which the school responds to the various influences present in the context to set the basic curriculum and design the ways in which the different pedagogical activities will be implemented and, especially, the teaching of disciplinary contents. The current concern for the professionals who perform pedagogical functions within schools is justified in large part by the current models demanded by the institution and the emergence of increasingly demanding controls over the production of schools. What is widely criticized are the bureaucratic procedures established for certain purposes that are perceived as the very foundation of pedagogical activity.

2.1. Pedagogical theories and relevant educational approaches

The theoretical framework for the study of pedagogical practices focuses on their dimensioning and interpretation, providing keys both for the understanding of the educational systems and approaches that run through or short-circuit the practices, as well as for making explicit the ways of teaching present. The theoretical framework offers some considerations about the school, its regularities and local peculiarities, which lead to effective strategies in context. Next, we present the classics of pedagogy that have influenced or influence in a particular, permanent and uniform way in the formation of models, educational policies and teaching methodologies in Colombia. Then, it is interesting to awaken reflection on the importance of configuring a theoretical framework of the field in which the researcher enters.

Since ancient times, different elements have circulated, coexisted and deposited in the school precursor of the republic and the concept of childhood, different elements that have guided pedagogical and cultural models, resulting from economic, political, historical and teacher factors. In the Renaissance, humanist and memorization school that facilitated extracurricular practices, select students for the State professed and were trained baptizing them with religious values. The representative character of the totality was privileged, resigning fidelity to the original, but cultivating the cognitive capacity that would allow the conception of novelties of the same type and the social use (polis) of knowledge in anthropocentric ideals.

2.2. Relationship between pedagogical theory and practice

Application of more general theoretical frameworks, as such frameworks question the aims, contexts, functions, dynamics, links, tensions and challenges of education, while at the same time having a more direct influence on the type of knowledge that is valued and expected to be built in training, including pedagogical competences; and (b) to promote the inquiry and construction of pedagogical knowledge by the future teacher, through diversified work dynamics, which provide spaces for argumentation, debate and cooperation between teacher-students-knowledge-collaborators, encourage observation and pedagogical experimentation, and privilege the analysis and contextualization of situations in order to understand and act on them, over the usual practice of applying accepted knowledge and considered universal.

The relationship between theory and pedagogical practice shifts from a dualistic formulation indicative of the separation or plain between "theory" and "practice" ("acquisition" of knowledge whose nexus is simple application; which in itself is already one of the nuclei of the very structure of transparency) to a theory of theoretical-methodological communication that grounds and informs supported methodological alternatives; Practice as a moment of re-

elaboration of guiding theory but also as a source of theoretical development and quality, from empiricism theory does not derive guide practice, analytical relations follow a logic of deductive knowledge.

3. Research methodologies in pedagogical practices

From the perspective instructed by Vass (2004), although the training of a teacher "is not acquired fundamentally through research itself", it will be in the midst of training processes in which an approach to specific contexts or theoretical links is promoted that provide the teacher with a greater understanding and reflection on their practices. The better understanding of a fact leads to critical analysis and actions aimed at transforming it. Thus, empirical evidence is necessary in the framework of an environment in which teachers themselves build real knowledge about teaching practice and tend to improve it. Thus, the alternative ways to approach a broad and deep understanding of a specific context are provided by documentary research and theoretical research as well as the systematization of experiences.

However, after the discussed disadvantages have been raised, Granados (2002) points out that the empirical approach to teaching practices is and will always be incomplete, the product of the researcher's cuts in the face of reality. In any case, this approach is important and would allow the teacher to perceive the institution and the class in a different way, it would allude to assumptions that he was unaware of, seeking to broaden the horizons of the teacher's meaning about his activity. Abel (2005) supports his understanding of the direct recourse to the empirical to learn about practices based on interpretative theories where reality is apprehended in generative contexts, such as biography, text or video. Marcus and Fischer (1986), Abell (2005) as well as Gimeno-Sacristán (2000), refer to the importance of the role of the teacher-interpreter-monitor-explorer (linked to the faculty of the human being to foresee and schematically represent the future) not as tasks added to those inherent in the organization of a curriculum, but as a constituent part of its design and implementation.

3.1. Qualitative and quantitative approaches

In the literature reviewed in previous sections, the existence of multiple studies that investigate the processes of observation and interaction between teachers and students in public schools in the country was identified. Various teams of researchers have collected material of different types such as standardized tests, field notes, surveys, interviews, video and audio recordings in order to understand pedagogical practices, specifically in the classroom. Below, several works that respond to this exploratory or descriptive conception with qualitative and quantitative approach methods are presented. The purpose is to compare the diversity of techniques and alternative methods that have been used in order to bring methods or ways of observing that include the teachers' gaze and their perspectives.

3.1.1. Studies with qualitative approaches including quantitative methods

Crespo González describes the ethnographic study carried out for the doctoral dissertation, which took place in a school in the city of Bogotá in order to investigate the representations that educational actors built around coexistence and what pedagogical practices were used in their construction. The population was composed of adolescents of two grades and, in the collection of information, 122 students, 6 teachers, 4 group coordinators and the school

psychologist participated. Among the data collection techniques used are a questionnaire with open questions about coexistence, school preferences, the quality of education and job expectations, participant observation, semi-structured interviews and self-history, a word association test in order to make methodological contrasts.

3.2. Data collection instruments

On-site research, with emphasis on participatory observation and poster: One of the techniques used by the group to understand the study phenomenon revolved around observation, carried out in several schools. Throughout it, school days, academic council sessions, groups, teacher and student work were nuclei of analysis. Specialists from the university led the fieldwork and, in the academic field, students from the research group located territories and committed themselves to the task of inquiry. Parallel to the logic of the fieldwork, the poster analysis sessions were fundamental, which arose as an adaptation of the Freirian technique, used for several years within the group. The fieldwork and debate allowed the collection of experiences, testimonies, problems and achievements. Finally, the data obtained were triangulated with the review of documents from the schools (PEI, Rectorry Orders, academic reports) and evidence of the policy of the Ministry of Education. The reflection was nourished and enriched by the exchange and contrast of perceptions of the experiences of the other and by the exposure of different perspectives: those of the subjects who transit a space, those of the researchers, those of theoretical reflection, and that of school documents. Dominuvini and Herrán (2006) start from the idea that these reflective activities allow teachers to "analyze elements of their pedagogical practice such as: techniques, activities, interactions, and to make a first approach to theoretical concepts that are immersed in their work" (p. 14).

Small group conversations: Another technique that was considered pedagogically and conceptually relevant to teacher training, and which gave new and visible directions to classroom pedagogical practice, was small group conversation. This strategy – which works with a collective subject organized by the theme, of active and reflective dialogue – stimulates a new form of participation and confrontation among the participants. We choose to enter the classroom or the ignition with an invitation to share and publicize a research question, a report, a result, a recently experienced situation, a book or text, a case, a thought, a reflection on reality, etc. The participants began the conversation with each other and there was a pause born of the group's internal interest. During the break, the advisor moved through the different groups, observing, listening, and providing comments so that he could resume his initial position as a listener.

4. Factors influencing pedagogical practices

Assistance ⇔ Investigative attitude, broad cultural background of educators and students, positive attitude towards catastrophe.

Political-ideological: Political and/or ideological interests, ideas, and goals that affect pedagogy and inform teachers' practice. The relationship between fiscal, international or domestic policies with consequences on budgets and value of money. The attitude of the governors and officials of the Ministry of Education through decision-making and distribution of economic resources. The attitude of educational institutions and the global vision of society.

Internal or intrinsic factors These factors shape the content of the daily life of the school, the scenario where internal forces interact. In this regard, they affirm that they influence and demand detailed views from teachers within the school itself, especially from principals, as they interpret, filter and redistribute external guidelines. Likewise, in Colombia, public schools configure their daily lives in a particular way, due to the heterogeneity of the country and the contexts in which they are located, as well as conditions that trigger their own or specific situations. In addition to this, schools at all levels are characterized by common conditions such as: management and governance, organizational, administrative; labor and union, curricular, pedagogical and didactic, and by the relationship and interaction with families and the environment.

4.1. Characteristics of the teacher

In general, the average value of the teacher's characteristic for all schools, at a given adoption rate, is about 1.7 standard deviations above the average for schools that do not adopt the rate. More generally, the conclusions of the studies that have been reviewed with respect to the characteristics of the teacher once again suffer from problems in presenting descriptive and quantitative results of the magnitude of the impact, costs and causal attributions. The report reviews and comments on methodological problems and presents empirical evidence for the cases of Brazil and Peru.

The intermediate link in the impact of policies aimed at improving pedagogical practices in the classroom and measuring the impact on school achievement is to document how the practices that occur in the classrooms are. This chapter focuses on describing the characteristics of the teacher, the teaching material and the pedagogical practices that occur and that are observed from the Cord Monitoring that were carried out in public schools in 260 educational centers in each of its four rounds (first and third in mathematics, Spanish language for sixth and ninth grade). So far, there have been few studies on pedagogical practices in Latin American classrooms. The Cord Monitoring (SMC) study developed jointly by the Universidad de los Andes (GIPPE) and ICFES offers debate to solve the problem that is intended, since investigating what these practices are and what their relationship is with minors, influences the socioeconomic context on them.

4.2. Characteristics of the student

The characteristics of the student are not innocuous or deterministic: it cannot be attributed to one or another circumstance that a child fails or succeeds. An educational administration is structurally framed historical processes (macroscale) -macro- that are embodied in regulatory proposals, educational plans and programs and, where appropriate, action plans and/or specific programs - micro- that are developed in each of its educational centers, public or private, through the different subsystems that said administration has to exercise its educational function. Likewise, families (even if they only appear in a hoc image) are also influenced by historical processes and their actions could also be broken down into macro-scale actions (plans to guide their children, family policies, etc.) and micro-scale actions (specific actions related to the characteristics of the students).

Therefore, students influenced by many other historical, economic, political, social and cultural factors present a series of qualitative characteristics (even if they are quantitatively

pure) that also condition their learning process. In this sense, these data are one of the pillars of a research-design that aimed to carry out a pedagogical-didactic approach to the reality of public (rural) schools in the Andalusian area of the town of Montilla.

4.3. Institutional and social context

The aim is to describe and understand how different ways of carrying out a school trajectory are constructed and put into practice in three Colombian public schools in a marginal context, located on the outskirts of the city of Bogotá. The pedagogical practices that we contemplate are the procedures that teachers implement for ritualized teaching incorporated into work routines, which are executed on a daily basis under the commitment to teach students a certain way of being and doing in the school that seeks to homogenize them to improve their academic performance.

The description process aims to study the activities of the actors, in relation to their context, understanding them from their point of connection to the whole, from which some of their purposes and meanings are derived. Although this process of description has as its ultimate and first purpose to understand the phenomenon, on the way to its achievement we will face certain contradictions, verifications and empirical corroborations, without which understanding itself would not be possible. Some moments of this process take the form of the design of procedures that we must follow, more or less strict, which do not always arise logically or directly from the praxis of the subject, but which in no way artificially distort the meaning of the facts, but neither do they dispense with references to facts that are indisputably true on an objective level.

5. Educational innovation and technology in pedagogical practices

Educational innovation will involve rethinking not only the current way of working with children, but also teacher training and continuous professional development. Seeking the pedagogical redimension proposed by the Marist fraternity will imply the orientations of the educational ideology itself and its materialization in an educational framework, thereby promoting children as protagonists of the process to which they are being invited, for which technology becomes a fundamental tool. The blame for this situation is not necessarily the sole responsibility of the teacher, but of the system. Let us remember that education is an extension of society and as such responds to the needs and interests of the system; If the system values an external test more than the educational process, success depends on obtaining an acceptable grade, especially in those areas that are verified with standardized tests. The contents are reduced, naturally, and the teacher who intends to educate in values or attitudes in those areas excellently designed for this purpose is not only faced with a logical question.

A question of values, which Elisa V. Delanoe is going to raise in a story that is ethically sadder than it initially suggests. We must educate in a mercantilist society, in values for production (production-oriented behaviors) and then educate for consumption. Educational agents retain an instrumental function: the teacher and the family prepare the students, who are passive in this process, so that they are ready as the market needs, thus extending this status of passivity until the individual in retirement and later.

5.1. Current trends in educational innovation

At present, from the socio-cultural sense, educational trends analyze the different school experiences (educational practices) taking into account didactic models (what is known about pedagogy), curricular designs and the role of knowledge in school. In this sense, the pedagogies of non-direction (school populism), of belief (spontaneous and good-natured teaching), of luck (trial and error method) and of the will is power (libertarian approach, assembly self-management), have been surpassed by currents that recognize the decisive importance of the teacher in giving meaning, setting up the pedagogical device, proposing activities and evaluating -accompanying the child in his learning-.

It is consequently, based on educational trends that the teacher is able to identify the importance of building new educational models in accordance with the technological revolution and globalization. In relation to the above, the presence of innovative pedagogical models in schools in developed or emerging countries is highlighted, whose results cross over the globalized educational system, forcing us to go further. Depending on the country and its level of development, there are various innovative pedagogical trends. In developed countries, trends reflect different psychological or didactic currents; in Latin America: more equalizing tradition, critical pedagogical models and socio-critical and cognitive-constructivist currents; and in Asia, innovation processes are just beginning.

5.2. Technological tools for learning

The impact of technology on society at the local, national and international levels is evident. In the school context, educational institutions, either from the territorial entities, plan and implement different programs that incorporate technology as a tool in the teaching-learning process. The Popular Educational Systems Ondas, Colegio Nuevos Maestros, Academia Española, First Family Together, SLVP (Science Learning through Virtual Labs Project), TtDG, Active Talent Search, among others, promote the use of virtual laboratories, phenomena visualization tools, simulations, educational games, among others, referring to the contributions of technological means in the teaching of natural sciences and mathematics. Likewise, training entities such as the Ministry of National Education guide different programs such as the National Program for the Use of ICTs, the Program for the Use of New Media for Science Education: Physics and Chemistry, Software in Teacher Training, among others, which develop different products for the use of technologies in the school context.

There are also proposals that are used at the international level with the help of the United Nations Educational, Scientific and Cultural Organization (UNESCO); the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP), for multimodal education in 16 African countries that benefited students. These are 5500 multiple-choice questionnaires that allow teachers to have a bank of questions associated with a specific topic and at the same time meet the needs of students of different learning styles.

6. Evaluation of pedagogical practices

The MEN regulations on evaluation indicate that it is supported by the Sectoral Plan, Legal Framework, Law 115 of 1994, Art. 140, Art. 7, Ministerial Agreement 1 of 1998, Circular in *Nanotechnology Perceptions* Vol. 20 No. S6 (2024)

which the Guideline is established. Purposes and dimensions of the Evaluation. Evaluation comprises two types: Self-evaluation and External evaluation. Self-evaluation. It is the process of self-assessment of the Educational Institution in which it involves the community (Students, Teaching Directors, Teachers, Territorial Entities and parents) based on criteria and policies stipulated in an educational model as foundations for taking actions that affect the quality of the Educational Institution. External evaluation, understood as a systematic set of procedures and instances to verify the quality of a specific educational offer. It is carried out by external actors, such as the MEN, the respective Ministry of Education or an external evaluation body, and has been developed in a cyclical, comparable and permanent manner (even in the exceptional case of quality assessment activities for accreditation purposes, since 2000).

The MEN has provided for the mechanisms for evaluating and monitoring pedagogical practices through the Bases of observation of practice, the mid-term evaluation in training programmes and the Impact Evaluation at the end of the training programme. (Qualification Framework for the Management of Coexistence in Educational Centres). The Bases of Observation of Practice is a direct assessment instrument that seeks to establish the degree of communication and implementation of methodological strategies for the teaching of competence. This basis is carried out by the educational establishment's teacher trainers (professors, target academic teachers and teacher coordinators) after selective training and demonstration to the entire educational establishment's methodological team.

6.1. Teaching evaluation methods

Classical observation, especially if it is the observation of entire classes, is an excellent method for studying aspects of teaching, such as rates of time use during class or student achievement levels. But it is limited for others, such as the type of behavior exhibited by the teacher, his or her lower ability to simultaneously record the behavior of all students, and the difficulty of simultaneously recording teacher behavior and student performance. Sequential or "moment" observation is more the method of selecting episodes than of global coverage and broadens the field of application of observation.

Interviewing teachers on teaching issues that are not restricted only to the teacher's presenteeism and early follow-up of the programs is a method that has traditionally been used in pedagogy. The interview with the students, in addition to their studies and alienations, about their concept of the role of the teacher and the institution, their relationships with them and their celebrations is usually carried out routinely in the orientation stages. Interviews with other professionals and parents about aspects of the teacher and the student are also valid. The students of a course lack the necessary preparation for their opinion to be sufficient to diagnose the problems they affect, since the optimal is the maintenance of an affective environment within the limits of risk and tension.

6.2. Assessment of student learning

The University of California at Berkeley and forty years later, proposes the change from Skinner's totalizing model to a constructivist and evolutionary model of behavior. The linear model became part of the approach to instructional design and curriculum design that prioritized in a hierarchical way the objectives, the development of educational activities and the evaluation sequence, with a connotation of pure technique. Constructivism and Vygotsky's

postulates, in the sense that man is efficient not only to adapt to the environment but also to transform it, by choosing, organizing and modeling from the internalization of the ways of behaving executed by others more competent than him, proposes a non-linear model, a position of rejection of evaluation as an end in itself. greater openness to what the student can build from their forms of interaction with the environment.

The analysis from the quantitative perspective allowed us to identify that in general teachers technically evaluate student learning based on percentages with progress indicators, they do not promote evaluations in natural learning environments or on a daily basis, a break between the evaluation of the achievement of objectives and that of the development of generic competencies or tasks; promote the use of academic goals and to a lesser degree the goals of learning knowledge and argumentation, high doses of the need for control and discipline in terms of control-worth, evident changes in the attitude of students, silence in the classroom, deviation (waste) from generic or conceptual competencies not taught by evaluation with tests, general attitude among students of indifference in terms of test orientation.

7. Challenges and future perspectives in pedagogical practices

After analyzing the pedagogical activities in the 15 schools participating in this research, we found important challenges and possible paths for improvement in them. In general terms, we observed challenges associated with the lack of adaptation of these activities to the rhythm, level of competencies and daily life of the school population, as well as problems related to the outdated nature of teachers with respect to the characteristics and needs of students in the educational context considered. Identifying, articulating and implementing practices that are adapted to the rhythms, motivations, styles and specific levels of development, lack of learning, traditions and cultures of the school population is an urgent task, which requires addressing a series of structural problems that we will address below.

One of the first problems that allowed us to glimpse the inadequacies of pedagogical activities to the socio-cultural and internal context of schools had to do with the conflict we face when talking about teaching practices. Just as in the current neoliberal policies work is associated with poverty or precariousness and a series of tasks that take place in everyday life are made invisible, in schools the notion of pedagogical practices has been naturalized as restricted to the activities carried out by teachers in the classroom.

7.1. Common problems in Colombian public schools

At that statistical moment, retirement incentives were offered to teachers in all grades and levels of the school, many of whom accepted the invitation and, together with the usual number of teachers who go into normal retirement due to time of service, always maintain a high percentage of teachers working with provisional appointments in the school. On the other hand, the teachers felt watched and the alert of undisciplined students generated reports and files to people who in any case could not be removed from the campus by legal-administrative decision.

The new teacher had to educate his students in a particular way, because in the class there was a pure mixture of old, stragglers, partial and permanent repeaters. The teacher had to carry out at a common desk with insufficient material, the careful roll call and warn of the retarders, the

Nanotechnology Perceptions Vol. 20 No. S6 (2024)

ritual greeting with the subtitle "NEVER WITH THE BACK TO THE STUDENT AND ALWAYS IN DESCENDING ORDER", and his efforts to create a spirit of contest among the students were in vain, because in the partial balances and in public records they were mixtures of shortlists, octaves and other particulars. As a result of this observation in a record that was to be used for the student, the teacher and the family, the observation is seen: "thirteen repeaters".

7.2. Proposals for teacher improvement and professional development

In recent years, a deeper understanding of the heterogeneity of in-service teachers has developed. One of the explanatory and methodological challenges is the link between the professional activity of teachers and the type of specific teaching practices that they carry out in their field of work. Making this knowledge explicit, formulating it in terms of significant problems and proposals, entails a specific interpretative framework. Perhaps that is why there are not many works in this regard.

We observe a set of arguments that try to offer strategies for the improvement of professional practices. Thus, the review of this research can not only illustrate some of the characteristics of the professional culture present in schools, but also certain professional policies formulated. Several of the studies reviewed have been based on a descriptive study of the professional practices of teachers as a basis for "imitation" for their improvement. Both works emphasize the empiricist and ahistorical character of the teaching "theories" of practice, in their character of tacit and uncritical knowledge, and advocate a marriage between diagnosis and training, echoing contemporary discourses, which question the conception of teacher training as a process of linear acquisition of skills and information. implicit in training approaches that lack a clear scientific foundation. The proposal is aimed at "transforming teachers' conceptions in relation to teaching and learning, triggering processes of teacher professional development."

Teaching is not, in his perspective, an activity devoid of logical structure, oriented here to the application to specific cases of a corpus of general knowledge, which, regardless of its more hedonistic or more scientific character, is the basis of foundations. To this end, future teachers, in their initial training stage, require, in their opinion, to be included in the educational projects of formative conceptual identity, which they offer, sometimes called the institutional "Guide", which articulate the different training strategies and indicate, in turn, the appropriate way to proceed. It is evident, from his discourse, that the preponderance of one or the other training model depends to a large extent on the relevance that is given, not only to a formal scientific framework, but also as a basis for supporting relevant decisions and actions in the treatment of a problem, but also to the achievement of training objectives of a mostly practical nature based on the professional model of the alo, the teacher is involved in his or her professional practice and attentive to the personal and contextual implications that underlie the responses of his or her students. Both models are clearly reflected in the authors' speeches.

References

1. Angeles-Álvarez, D. (2013). The notions of citizenship and participation for democratic education in the Spanish educational reality, a descriptive approach (Doctoral thesis). Granada: University of Granada.

2. Arroyo-Montoya, L., Ramírez-Báez, M. C., Uribe-Díaz, M., Villate-Pulido, L. A., Moreno-Muñoz, J. D., Guzmán-Pastrana, J. G., ... Cerquera, J. C. (2008). Project-based training as a didactic strategy for the development of research skills in the research training cycle. In J. C. Cerquera (Ed.), *New perspectives on teacher training* (pp. 213-251). Bogotá: Universidad Pedagógica Nacional.
3. Avalos, B. (2009). *Teachers for Chile: quality and equity of education*. Santiago de Chile: Centro de Estudios del Ministerio de Educación.
4. Charria-Mata, A., & Solarte Sarasty, M.C. (2015). *Rural Education Teacher Training: A View from the Social and Pedagogical Practices of Teachers Graduated in Social Sciences*, University of the Amazon (Master's Thesis). Bogotá: Universidad Distrital Francisco José de Caldas.
5. Davini, M.C., López, O., & Pérez, E. (2018). New scenarios of teacher training: Current issues. *Education and Educators*, 21(3), 274-285.
6. Romero, T. G., Álvarez, W. D. C., & Arredondo, L. E. M. (2021). Learning in mathematical knowledge in teachers of public elementary schools in the municipality of Valledupar. *Boletín Redipe*, 10(8), 128-143.