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Cyclic and Integrator Model in the Formation of the Dentist

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Abstract

The objective of this study was to define categories and properties that explain a cyclical and integrating training model of professional practices in the dental career. It was oriented from the curricular theories and professional training in the health area. A qualitative research was developed, with an experiential epistemological approach, and the Grounded Theory of Strauss and Corbin (2002) was applied. From the coding and analysis process, a system of emergent categories and sub-categories was built, which are the basis for the explanations expressed. The construction of a cyclical model for the training of the dentist and the proposal of meanings and guidelines for the design of training projects from a cyclical and integrating perspective of professional practices were achieved.

Keywords: *training cycles and projects; professional practices; curriculum; dentist training; assessment.*

Introduction

Current educational trends consider that the subject is the protagonist of his or her training process, for this it is required that the training processes are based on meaningful and autonomous activities. This principle guides the training of future dental professionals, which is why it is a matter of putting students in contact with professional problems, seeking to make the experiences lived meaningful through reflective, critical, integrated and contextualized learning processes.

These realities require consistent action from the higher education curriculum aimed at the development of complex cognitive skills such as reflection and critical thinking; ability to apply knowledge to practical problems in the professional, family, personal and social fields; understanding and appreciation of human differences; practical skills such as conflict and problem solving; the development of attitudes, values, perspectives; and the ability to learn continuously.

In this sense, research was carried out on the Curricular Design for the training of the Dentist at the University of Zulia (2012) in Venezuela, which is conceived from a comprehensive perspective, oriented to the approach of the health/disease process in its oral component, based on bioethical and scientific-technical principles, to promote the

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development of the capacity to perform in multicultural and multi-societal contexts. The results were complemented from the perspective of other dental training programs in Venezuela.

Cyclical models of formation respond to the systematic repetition of a phenomenon, whose elements of the system, with the passage of time, resume their initial position, albeit with new configurations. This concept of cycle, applied to training processes, makes it possible to conceive proposals that go beyond linearity and rigidity, to give way to experiences that integrate a virtuous spiral of learning that gradually leads to the development of competencies. This orientation is considered pertinent for professional practices, a curricular space where students integrate knowledge (NORO et al., 2018) with action on the real object of work, under the requirement of solving problems that allows them to advance in the consolidation of learning, the development of competencies and the construction of their own and increasingly autonomous vision of the profession.

Recursion is a characteristic of the cyclical model, which is why its main quality is continuity (Morin, 1990); Therefore, it cannot be delimited in space and time, because it continues to be replicated and multiplied in a logical way. It has the property of repeating itself indefinitely, even beyond the process of initial formation, and is oriented towards ongoing formation.

The development of professional practice in the area of health, in this case dentistry, becomes an active didactic strategy where learning is resumed, from the simplest to the most complex, managing the patient, their environment and the diversity in which they develop in a comprehensive way (Restrepo Ocampo & Restrepo López, 2019). Internships must be integrated into a recursive, progressive, investigative process, with social and interdisciplinary commitment, around the objectives of dental practice.

In the professional practices of the School of Dentistry of the University of Zulia, learning is progressively resumed in its level of complexity, the patient is managed in an integral way, under a concept of integral health, for this reason it is not possible to conceive of a single way of approaching the processes of the practice, each patient and each learning situation is a challenge. In addition to the complexity of the patient and his or her problem situation, there are the different areas (diagnosis, prevention, cure and rehabilitation), which make up the proposal of the Professional Practices of Dentistry, which integrate the contents to the areas of specialty of the training (periodontics, surgery, endodontics, prosthetics, restoration and aesthetics) and must be organized in a recursive process. responding to the principles of the cyclical conception.

In this study, an accumulation of records and evidence was formed that supported the achievement of the objective: to define categories and properties that explain a cyclical and integrative training model of professional practices in the dental career. The results of the model were validated with the actors of the program studied.

Contributions of research to the understanding of training in Dentistry.

The theoretical foundations that serve as the basis of the proposed model consider contributions of curricular theory that support the conception and organization of professional practices as an axis that integrates the formation of competencies in the curriculum (Paredes et al., 2018; Tobón, 2013; Ceriotti et al., 2012; Cabrera, Valarezo, Casanova, & Quintero, 2022). These studies supported the integrative nature of professional competencies, valued as cognitive, procedural, affective skills and ethical qualities, because experiences are developed that address all areas of human behavior (Casanova, Canquiz, Paredes, & Inciarte, 2018) and, in this case, the areas of health, in relation to prevention, rehabilitation and cure. In the conception of the training model of Dentistry professionals, contributions were considered that link practice – theory – health situation and social prevention, related to the labor field, which is constantly changing

and that establishes relationships between academic and research processes with society, and maintain a link with the demand of science and the context from the intervention of the subjects in training (Cedeño & Santos, 2017). The complex nature of the interrelationships that are established between the curriculum and the context through practices has been investigated by (Rogiers, 2006; Narváez et al., 2011) whose contributions were used to make proposals for the structuring of the experiences promoted in professional practice, with an integrative and reflective conception (Fukahara, 2016; Mendoza, 2018).

In the application of this concept, contributions from research carried out on models of curricular organization and didactic processes that guide their management in professional practice were reviewed (Díaz & Gómez, 2003). We worked with the cyclical organization of curricular experiences, which ensure the dynamism of each of the actors participating in the training processes based on the research of (Kolb, 1976; Junch, 1983; Honey & Mumford, 1986).Considering these contributions, guidelines were generated to comply with the principles of transversality, inter- and transdisciplinarity (Trujillo Sainz et al., 2020) that characterize professional practice, generating learning from the meanings and commitment of the student from a recursive exercise that successively integrates the elements or processes that the student mobilizes (GUZMÁN et al., 2019; Lopez, 2013; Perilla, 2019) to respond to current and future demands in the academic and health fields (Liu et al., 2021; Wireklint et al., 2021).

The specification of curricular guidelines, linked to a model of organization of professional practices that promote the development of competencies, imposes the study of learning in clinical areas (Zambrano, 2014; Hernández et al., 2017; Oliver et al., 2015; Cedeño Sánchez et al., 2019), which requires a profile of teachers in accordance with the permanent accompaniment and evaluation of the actors involved, who must take responsibility for the decisions made, argumentation, self-regulated learning, teacher-student-patient communication, problem solving, innovation, the use of technology contributions and reflection on situations to be prevented and transformed; to confront the predominance of Traditional paradigm of teachers, which makes it difficult for them to innovate when designing learning experiences in their courses and the ecology of their classrooms, teaching planning aims to make students assume learning tasks, solve problems, based on appropriate strategies, as well as evaluate the results of the activities undertaken (GUZMÁN et al., 2019).

In order to address the transformation of didactic practices aimed at the development and mastery of basic skills of the professional practice of dentistry, its integral and integrative character must be addressed, in contact with the reality posed by the diversity of cases to be resolved. The teacher's willingness to do so is essential to achieve the transformations that are required (San Martín, 2012; Garcia-Lancaster, et al., 2022). Another situation that must be faced by the conception of the dentist's curricular design is the lack of interdisciplinarity in the development of professional practice (Latorre et al., 2011; Rosero et al., 2017). This transformation is necessary to address through the disciplinary and interdisciplinary application of the method and logic of the sciences. The health-disease binomial in a holistic way, identify risk factors that cause health problems, in order to design strategies that allow students to integrate and articulate disciplinary contents, promoting dialogue, interaction and complementarity between different domains of science and mobilizes the training process towards intervention in improving the health of communities.

The integration of social competencies in the training of health professionals, with emphasis on the incorporation of the values of equity and inclusion, in order to meet the demands of health education programs, especially aimed at vulnerable populations; it will contribute to the development of critical and purposeful qualities, so necessary in the training of dentists (Goncalves et al., 2019).

METHODOLOGICAL OVERVIEW

The methodology was qualitative, with the application of Grounded Theory (Strauss & Corbin, 2002). The initial categories arose from the theoretical foundations; These were constructed based on the contributions of the informants. The following techniques were used to collect information: observation in clinical practice sessions in dental educational settings and interviews with teachers and students of the Clinical Practices, as well as experts in curriculum from different Venezuelan institutions that train dentists. The evidence was collected in audiovisual recordings. Likewise, the Holistic Model of Bagozzi and Phillips (1982) was applied for the generation of theory, working with the initial categories and their conceptions, as well as to identify scenarios and units of information, actors for the analysis and development of theories in organizational phenomena, through the representation of concepts through a process based on the construction of a complex network or mesh that establishes the relationship of conceptual elements.

The analysis was subjected to "methodological triangulation", that is, to the convergence of information from the different sources, taking into account that each one provides diverse and relevant contributions for the interpretation, as well as allowing to obtain greater quality control in the research process and guarantee of validity, credibility and rigor in the results achieved (Aguilar & Barroso, 2015). An open analysis and coding matrix was constructed, and the information obtained from the interviews was coded. From there, key words were identified in the answers to each of the questions asked to curriculum experts, Professional Practice teachers and students. Axial coding, on the other hand , helped to organize, define, relate categories and sub-categories and integrate the data as a whole, which made it possible to observe the connections between groups of subjects, categories, subcategories in terms of their properties and dimensions.

On the other hand, with selective coding, each of the topics was interpreted with its categories, subcategories and properties. The theorization developed in this study allowed a theoretical reduction of the contributions of all the sources consulted until saturation was reached.

For the purposes of validating the information, a focus group was developed with professors from all levels of Professional Practice, students and experts in training in Dentistry and Curriculum. The focus group, within the framework of this socio-qualitative research, guided the process of validation and integration of meanings, allowed to establish in-depth relationships and consensus in the interpretation of situations, social behaviors and daily practices, which did not emerge visibly in the observation or in the interviews.

Next, the presentation and analysis of the data was complemented with procedures established in the Grounded Theory (Strauss and Corbin, 2002). The categories and the integration of meanings emerged from a systematic processing that required constant interaction between the scenario and the researchers.

Informed consent was obtained from the institution, professors and students, and it was submitted for approval by the Research Ethics Committee of the Faculty of Dentistry of the University of Zulia.

The following are the main categories: a) characteristics of the Professional Internships; b) linked elements in the cyclical and integrative curricular model of professional practices in dentistry; (c) Traineeship training cycles. See Figure 1. Relevant Categories and Sub-categories

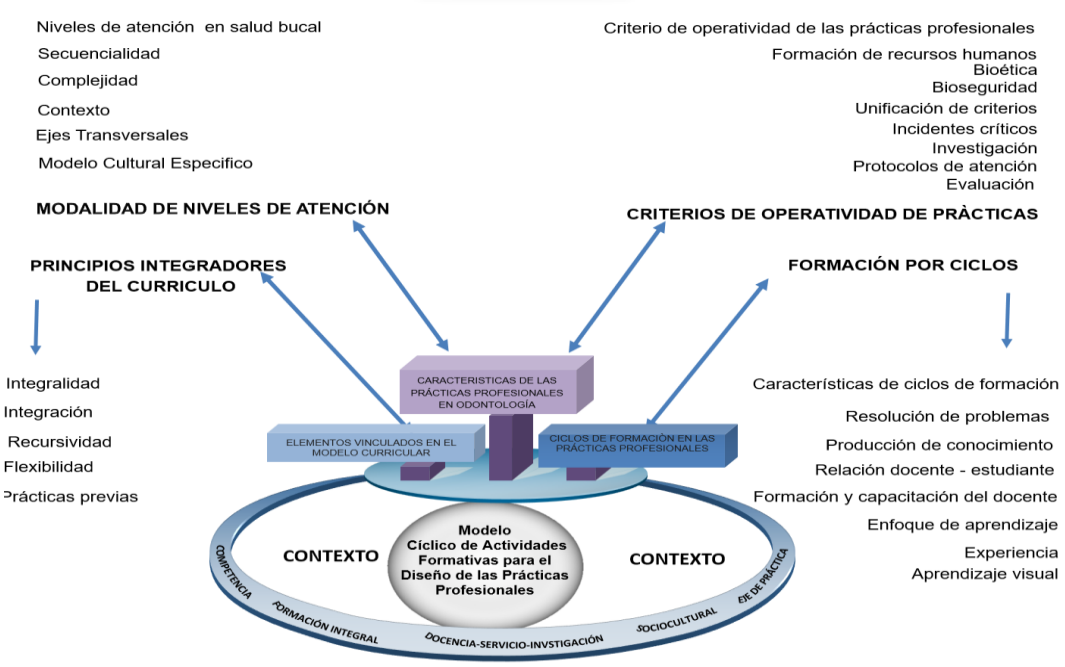

Figure 1. Relevant Categories and Sub-categories

Source: Source: Inciarte, Mendoza, Zambrano, Canquiz (2023)

The following graph represents part of the cyclical model with important elements that are part of the professional practices and training of the dentist, such as the development of competencies from comprehensive training, the axis of professional practice, the teaching-service educational model and research framed in the sociocultural context with a biopsychosocial perspective. Professional internships are developed according to the elements incorporated in the philosophical framework of curriculum design.

The integrative principles of the curriculum guide the meanings of the category characteristic of the training cycles of professional practices, understood as a sequence of activities, where a triad interacts: teacher as facilitator, guide and motivator, student responsible for his or her process; who must learn more than be taught, and develop cognitive, procedural and attitudinal competencies in activities of the world of work and the patient who receives care with ethical commitment to respond to the community

Category System

The system of categories, subcategories, and properties for the cyclical and integrative curricular model of professional practices is presented in Table 1.

Table 1. System and subcategories of the curricular model that make it up.

Categories	Subcategories	Properties
	Oral Health Levels of Care	1st level. Promotion, promotion and prevention activities. 2nd level: Timely diagnosis and treatment. 3rd Level. Rehabilitation.
	Sequentiality	Increasing relationship in complexity and inclusion of experiences. From the general to the particular.
	Complexity	Order of increasing complexity. Scientific nature.

		Be critical and comprehensive. It brings the student closer to the professional field. It attends to problems that the patient brings. Integrate competencies.
Characteristics of Professional Internships	Context	Transculturality. Relevant problems in oral health. Experiences of validation of what has been learned. Relationship between practice and competencies.
	Transverse axes	Bioethics, respect for others. Respect for biological nature. Biosafety. Cross-cutting nature of the practice. Integration of transversal axes.
	Specific cultural model	Respect cultural particularity and ethnic diversity. Vision of the health-disease process.
	Criteria for the operability of professional internships	Formation. Services.
	Human Resource Training	Diversity of actors in training: teachers, students, specialists, dental assistants.
	Unification of criteria	For the execution of treatment, both theoretical and practical.
	Critical Incidents	Adequate number of students according to the infrastructure. Maintenance of equipment. Equipment and supplies.
	Research	Research strategies and actions in professional practices.
	Care Protocols	Patient care.
	Evaluation	Student evaluation criteria.
Elements linked to curriculum	Integration	Integration of Teaching-Research and Service activities. Integration of knowledge (the planned vs. the executed real). Promotion of scientific culture. Theoretical-practical linkage. Development of being-knowing-doing-living together and other essential knowledge.
	Recursion	Repetition to reinforce knowledge and consolidate skills. Gradualness in the development of competencies.

design		New knowledge and reiteration of what has been learned or experienced. Evolutionary sense: to do better and better.
	Flexibility	In the context, in the execution time of procedures, strategies, scenarios.
	Integrality	Pay attention to the different dimensions of training. Spirituality. Reinforcement of the essence of professional commitment. Vocation.
	Previous Internships	Relationship of internships with previous subjects.
Training Cycles	Characteristics of the training cycles	Spiral of knowledge. Dynamic and active process. Integration of cognitive, procedural and attitudinal knowledge. Simple to complex. Establishment of integration and comprehensiveness criteria. Reinforcement of achievements. Reflection on what has been achieved and how to overcome it. Generation of new resolutions.
	Problem Solving	Scientific technical response. A distinction between the theoretical and the practical. Transversal nature.
	Knowledge production	Theoretical knowledge. Practical knowledge. In a dialectical spiral. Response to oral health problems. Contextualized knowledge.
Training Cycles	Teacher-student relationship	Teacher (Facilitator – committed). Student (Responsible for the development of his/her competencies). Adequate number of clinic faculty. Commitment to the practice and its processes on the part of the actors. Discussion spaces for clinical cases.
	Teacher education and training	Integrative and mediating teaching role in social reality. Transversality.
	Learning Approach	Collaborative learning.

	Cooperative learning.
	Problem-based learning (PBL).
	Experiential learning.
	Visual learning.

Source: Inciarte, Mendoza, Zambrano, Canquiz (2023)

A structural principle that accompanies this System of Categories is the definition of the cycle of training activities of professional internships, which are based on the conception of the teaching, service and research model, through the axis of professional practice. It must allow the development of comprehensive competencies, in all their complexity. On the other hand, the teacher must go step by step, from the basic to the complex; the student, who from the beginning assumes an active role on and off the university campus. Emphasis is placed on the teaching-lifelong learning process as a social action, guided by experienced teachers with greater mastery of knowledge, with the ability to handle different theoretical and methodological concepts. It is experiential, resourceful, promotes innovation and the transfer of knowledge for the resolution of oral health problems and, in turn, generates experiences through which the student validates and responds.

In this order of ideas, the perspective of cycles proposes the development of reaffirmation activities through the repetition of tasks and refinement until expertise is achieved following the order of increasing complexity. At the same time, it emphasizes cooperation and collaborative work, in such a way that it strengthens the gradual complexity in each procedure, a process in which action is reflected on permanently, until a deepening of practice and the consolidation of competencies is achieved.

From the pedagogical point of view, the activities must be designed with the vision of generating, transforming and consolidating the required learning, allowing theoretical-practical integration by creating environments for discussion and reflection, in congruence with the demands of the context and scientific advances in the dental disciplines. A process that is lived little by little towards the conduction of deeper levels, providing meanings to reality, updating in clinical, social and general issues. There must be interrelation in content, interdisciplinary in learning of a comprehensive and integrated nature.

Each encounter in dental clinical scenarios becomes a new learning experience and orients itself to the impact on processes. From the modality of cycles, the practical activity is characterized by being integrative, flexible, integral, recursive, researchive, interdisciplinary and with a socio-cultural orientation; It works with a balance between the areas, evaluates the student's overall performance and attends to the transversal axes of the career, developing the competencies of the professional academic profile that serves as a guideline for the actions of the curriculum.

In this sense, the cycles of activities are based on conceptual elements that allow the design and planning of assignments based on the premise of reaffirmation, through the repetition of experiences inside and outside the university campus until expertise is achieved.Its contribution is evidenced in its impact on the curriculum, the activities must be designed and organized in line with the teaching-service-research model, therefore, it includes the teaching-learning strategies applied in the dental clinical scenarios; the service in relation to its functioning and capacity to respond effectively to the population that attends there, and research, which sustains and feeds back into the previous two.

The model highlights the following categories:

a. Characteristics of professional internships: professional internships synthesize the tasks of a real field of work and encompass activities of social requirement, maintaining intimate congruence between the profession and the context. They form a guided and

supervised exercise where the knowledge acquired is put into practice. They are constructed from indicators such as: health policies, scientific advances of public institutions, areas of knowledge and particular objectives supported by technical processes.

Likewise, the organization of knowledge is designed from a research vision based on the different levels of increasing and transversal complexity of the socio-epidemiological reality of the region and the country, professional practice, being the center of application of knowledge, the confrontation of ideas and the opportunity to propose innovations.

As a transversal organizing axis in the curriculum, professional practice constitutes a proposal for a paradigm shift that allows, on the one hand, the construction of critical thinking, the product of the interaction of different axes, around an ethic for coexistence. On the other hand, it broadens the scenario beyond the classic academic contents, by opportunely incorporating topics of daily reality and current problems of humanity, not yet included in the disciplinary areas.

Transversality has in itself the potential to redefine the classic system of organization of contents (cognitive, procedural and attitudinal), which should allow the proposal and pedagogical practice to be redimensioned. In this sense, it is important to delimit the experiences of transversality and to carefully observe how the cognitive, attitudinal and procedural aspects are included based on the forms of reflection on the complexity of the human processes that these experiences present in the search for interrelationships (Bravo E Inciarte, 2007).

The triad of action-reflection and proposal guides the activities, integrating dialogic and reflective strategies, and makes important contributions to the research, therefore, they become a significant link in the training of a professional who undertakes actions to change reality, in response to their needs and prospects. It is important to highlight that the teaching-learning process in dental clinical settings must consider the unification of criteria among the actors, in order to improve care protocols and in some way provide more timely responses to critical incidents and permanently improve instructional and evaluation strategies.

b. Elements linked to the curriculum: Curricular integration defends the teaching-learning stance where the facilitator together with the student builds significant connections around a competence, which is exercised in a complex situation of integration, is addressed simultaneously and progressively according to the levels of oral health care, where all learning converges. The student is given the opportunity to teach and learn cooperatively, because in a clinical session there are different levels of training in the specialties of dentistry. In this sense, the recursion associated with an interaction is perceived in the curriculum as a permanent spiral, where there is no predetermined beginning or end. It is appreciated as a resource for developing competencies, as applicable to knowing how to reflect, assess, organize, select and integrate what can be better and that is systematized in its continuous assessment to carry out the professional activity, solving a problem or carrying out a project, which is developed in a dynamic and flexible way according to the specific situation in which it is addressed (Inciarte & Canquiz, 2008).

Seen in this way, competence is adaptable and transferable, it cannot be limited to a single and repetitive task, but it presupposes the ability to learn, create and communicate innovation processes, understanding the various professional circumstances and the ability to adapt knowledge to them, which is internalized in the professional's thinking in different ways and, Especially, from his own experience. Even more specifically, the management of the comprehensive curriculum evidences the principle of recursiveness, when in the phase of continuous and systematic evaluation it adopts the forms and implications of an institutional, participatory and orderly research, the results of which are appropriated and applied by the actors to regenerate the curricular process.

Likewise, flexibility must transversalize the various relationships that emerge in the teaching-learning processes, in dental clinical scenarios, it implies the incorporation of everyday knowledge as part of the training of the subjects, the recognition of students as people capable of thinking, reflecting, interpreting, feeling and relating from their own experiences and knowledge, it is a process that translates into actions of continuous improvement, derived from the constant self-evaluation of the academic process, and as a response to the demands of the environment and trends of the discipline.

Integrality must be the foundation of an education that fosters in the teachers and students of the dentistry career, the development of all their potentialities, that is, the expression and growth of their scientific, humanistic, philosophical, ethical, aesthetic, political and social dimensions, in accordance with the ethical principles and the social function of the university.

It is about the formation of critical-reflective subjects, independent and aware of their social participation; To design a curriculum that, from its implementation, makes the university more open, participative and protagonistic, which favors an ethical vision of reality, based on its intervention in the reconstruction of the socially established norms, both by the subjects and by society as a whole, in correspondence with the ordering of the relationships of individuals with the totality of the elements of the social context. This makes it possible to approach norms and values, such as inclusion, equality and gender rights, among others, which, as a fundamental rule of conduct, favor the right to development, from which large groups of the dispossessed can be excluded.

In real work situations, the student constructs, modifies or refutes contextualized knowledge and develops situated competencies. Hence, it would no longer be a matter of teaching decontextualized disciplinary content, but of defining situations in which students can construct, modify or contrast knowledge and competencies regarding disciplinary content, while developing responsibility for the processes.

In the integral formation of the student, a permanent updating of contents and pedagogical strategies is installed and facilitated. It is a process that translates into continuous improvement actions, derived from the constant self-evaluation of the academic process, as a response to the demands of the environment and trends in the discipline.

The integrative principles of the curriculum guide the meanings of the category characteristic of the training cycles of professional practices, understood as a sequence of activities, where a triad interacts: teacher as facilitator, guide and motivator; A student is responsible for his/her process and for learning more than being taught, as well as developing cognitive, procedural and attitudinal competencies in activities of the world of work, and patient, necessary for his/her oral health.

c. Characteristics of the training cycles: spiral, dynamic and active process that overcomes linearity, integrates cognitive, procedural and attitudinal knowledge in real work environments. It starts from the simple to the complex, in an increasing progressive sequence, which allows the student to evolve continuously and permanently, integrate the theoretical-practical knowledge developed in the experience and respond to the profile of the dental professional.

Dental practice is made up of three components: knowledge production, human resource training, and service delivery. These components fulfil a series of functions derived from their relationships with structures and work, and are of an educational-welfare nature. In this way, dental practice, as a technoscientific, academic and social argument of the profession, aims to address the problems of oral health-disease through the components of knowledge generation (research), production of services and development of human resources (professionalization).

The teacher, as a facilitator, provides spaces for reflection, training and the development of procedures that teach them to think, investigate, substantiate, problematize, doubt, question and become independent and, therefore, assume positions that contribute to being authentic and responsible. The student's personal and learning growth allows him to assume a critical position in the face of his results, in a stimulating cultural context. The teaching-learning in which the contents are developed is based on achieving an active role on the part of the student in the generation of knowledge.

The acquisition of knowledge in practical clinical settings leads to the development of competencies and attitudes for communication, creative analysis, independent reflection and teamwork in multicultural contexts. Problem-based learning stimulates the active participation of the student in the search for knowledge, with the teacher not only being a tutor but also part of the group, a facilitator of the process. In this sense, when students are involved in the operation of services, with defined objectives, they develop sensitivity and availability to negotiate and solve the problems presented and develop skills to maintain and improve their management and operation efficiently and effectively (Emmi et al., 2018).

Final Thoughts

The definition of categories and properties that explain a cyclical and integrative model of professional practices in dentistry allowed us to conclude that training cycles are expressed in a dynamic and active spiral process that overcomes the linearity that integrates cognitive, procedural and attitudinal knowledge in learning environments.The modality of cycles of practical activities is characterized by being integrative, resourceful, researchive, interdisciplinary and with a socio-cultural orientation; it works harmonizing and taking care of the balance between the areas, evaluates the integral performance of the student and attends to the transversal axes of the career, developing the competencies of the professional academic profile that serves as a guideline for the actions of the curriculum. It allows us to define the activities that future dental professionals must have in order to enter the labour market.

Likewise, they are based on conceptual elements that allow the design and planning of assignments based on the premise of reaffirmation through the repetition of experiences inside and outside the university campus until expertise is achieved. They begin with the recognition of the activities inherent to professional practice, it is the student's first contact with all areas of work, identifies the functions to be fulfilled, following the order of increasing complexity and forms a space for discussion and reflection of their responsibilities as an oral health professional.

In this regard, the context acts as a dynamic agent of the training processes. In this sense, it demands learning environments, conceived as spaces where interactions are generated between the actors who participate in the educational process, which are built and transformed from a dialectical and communicative dynamic. The subjects who intervene there unveil meanings of cultural reality until they are consolidated in a collective and transformative conception.

Therefore, each encounter in dental clinical scenarios becomes a new learning experience and is geared towards impacting processes. The role of collaborative work in the construction of collective meanings should be highlighted. The principles of integration, comprehensiveness, flexibility and recursion envision a virtuous spiral of learning that shows transformations in an increasing and dynamic way. This allows us to go deeper as we consolidate the learning in the constant review and reflections on the student's performance in this repetition of actions. The functions of each professional practice are worked on until a good performance is achieved.

Thus, the scope of this cyclical model makes a formative projection in which the student must be involved, therefore, the role of the teacher as a motivator is fundamental. Their contribution is evidenced in their impact on the curriculum, activities must be designed and organized in accordance with the teaching-service-research model.

On the other hand, the triad made up of action-reflection and proposal, as a principle to guide activities, with strategies such as reflective dialogue, makes important contributions to research and becomes an important link to change reality. In this sense, carrying out a diagnostic evaluation on each student allows the design of training activities and reaffirms the cyclical perspective within professional practices, given that the evaluation of student achievements is based on previous knowledge, resulting in being integrated into the process and the product. In summary, the categories and properties that were constructed in this research to explain the cyclic deformation model are applicable to clinical scenarios in general.

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