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UNAN-Managua 2013-2021 curricular plans: analysis within the framework of continuity from degree to postgraduate

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ABSTRACT

It is unquestionable that the Higher Education system in Nicaragua, especially, at UNAN-Managua has been experiencing changes in its curricular management, vision, mission, values, and work axes, which generate new and challenging scenarios. One of those is the transformation into a degree and, therefore, this implies improvement in postgraduate majors. For this, it was necessary to carry out a documentary analysis of the curricular designs of the undergraduate courses (2013 and 2021 plans) and identify how continuity occurs in undergraduate and graduate training. The objective was to analyze the main conceptual elements of the curricular plans of the UNAN-Managua courses within the framework of the continuity from undergraduate to postgraduate. The research was carried out using a qualitative approach, a major unit of analysis was identified: the continuity of the degree in the

postgraduate degree, and minor ones: conceptual elements of the 2013 and 2021 curricular plans based on the continuity of degree training in the postgraduate degree; curricular improvement and linking degree to postgraduate degree. For data analysis, a double-entry matrix was created. Also, information triangulation was applied, considering the objectives, research questions, and units of analysis. This article presents a description of essential elements of both plans from a central perspective; elements that unite and disagree, application in daily activities or curricular management and its relationship with postgraduate majors, as well as the coherence between the training and research processes about the continuity of competencies from undergraduate to postgraduate and the development of lines research at both levels.

INTRODUCTION

The comparative analysis of conceptual elements that make up the curricular designs of universities from a look at functions, and pedagogical and epistemological perspectives of the main entities that make the curriculum management effective, allows us to know what is being promoted from the different actors of the curriculum. Hence, in this article, through a qualitative methodological design, an analysis of the main conceptual elements of the curricula or study plans 2013 with its reform 2016 and curricular design to develop competencies in UNAN-Managua 2021 or, better known, curriculum by competency, is presented to offer a broad look on them, in the framework of the continuity of undergraduate training in postgraduate.

The most outstanding results will make it possible to assess the involvement of the subjects involved and their responsibility to ensure compliance with conceiving the curriculum of UNAN-Managua as a whole, only with clearly defined levels of training (undergraduate and graduate) without losing sight of the fact that, in both, its construction or origin of a major must be designed to provide answers to the needs demanded by society. This is the way to train professionals capable of qualifying at the highest level of the Higher Education System, not only in scientific knowledge but also in a critical and responsible sense.

The main conclusions refer to the fact that, although both curricula expressly state that they are focused on developing competencies and that the main agents of curricular management are responsible, this was not the case in the 2013 plan. As for the continuity of undergraduate training in postgraduate education, the 2013 plan does not refer to how continuity is given, and the existing postgraduate programs do not provide a glimpse of the continuity of undergraduate education.

MATERIAL AND METHOD

To achieve the objective of analyzing the main elements of the curricular designs 2016 and 2021 of UNAN-Managua on the continuity of graduate education, double-entry matrices

were used to identify similar and dissimilar elements. These made it possible to know how the level of responsibility of the agents in charge of curriculum management and continuity of graduate studies is expressed in both. All this is in correspondence with Balestrini (2006) who states that, depending on the problem and the object of study, the research will be related to a certain research strategy and to the types of instruments to obtain data and thus analyze the variables.

For the present work, on the analysis of the main conceptual elements of the curricular plans 2016-2021 of UNAN-Managua, qualitative research was assumed in all its stages. This type of research, conducted from a context of curriculum management, Baxter (2003, p. 110) considers it allows "making proposals for transformations that seek the perfection of educational practice, by understanding the process of change, as well as critically and systematically analyzing the processes and results". Thus, this methodological option allowed the use of instruments and techniques that could have a significant impact on the subjects of study in this research.

Therefore, the qualitative research approach was the ideal one to be able to determine in the curricular designs the edges or links that allow the continuity of undergraduate and graduate training and how the curriculum and the learning of the students at both levels are managed. Consequently, a good level of description of the curricular plans was achieved (by objective 2013 and development of competencies 2021), and the opportunities to outline a route for continuous improvement in the quality of the continuity process or model. For the development of this research, information was required on the basis on which the UNAN-Managua plans were conceived. Therefore, an in-depth interview with open-ended questions was conducted with the Director of Research and Graduate Studies (E-DIPos), the Director of Education (E-DEdu), executives of undergraduate teaching (E-EvoDocGdo), and coordinators of undergraduate majors (E-CCPos) and focus groups with coordinators of graduate majors (GF-CCpos). For the selection of the informants (directors, undergraduate and graduate coordinators), considering that they are involved in the training process and living the transformation and adaptation to the new model in both undergraduate and graduate majors.

As for the sample, it was done purposively or convenience sampling since the 2016 and 2021 curricular plans were taken, including design, programs, curricula of undergraduate and graduate majors of the UNAN-Managua, regulations, and curricular grids. As for the undergraduate majors, those were selected which, according to the curricular design of the graduate majors, at that time, were conceived as "academic programs", today academic graduate majors, expressed in their entrance profile to which majors they gave continuity. Meanwhile, the selection criteria for graduate programs were to have more than two academic cohorts, areas of influence, professional profiles, and declared lines of research. Hence, it was possible to find

the continuity in postgraduate studies of undergraduate programs, according to their area of training.

In the research, there are large units of analysis: continuity from undergraduate to graduate studies. Smaller units depend on it, such as the analysis of conceptual elements of the 2013 and 2021 curricular plans to determine the presence of the expression of continuity of undergraduate education in graduate programs; the curricular improvement of the 2013 plan programs; linkage of undergraduate programs in graduate programs and methodological strategy. In addition, the discourses obtained from interviews with undergraduate teaching executives, education directors, and focus groups conducted with graduate course coordinators were considered as units of analysis. Based on the polycontextual logic proposed by Salatino (2009) cited by Escobar (2016, p. 254), the category is one more component of reality composed of subject + category + object + difference.

Regarding the techniques and instruments that were used to conduct this research, the theoretical methods (analysis, synthesis, deduction, and induction) were used, to support the validity of the research conducted. Hence, Bunge (1998, p.81) states that: "the references of other researches and their current dispositions, the analysis and synthesis describe the examined biography to comment it systematically and to extract particularity of the phenomenon, object of research".

The documentary analysis was carried out on different documents used during the training workshops, these provided significant information for the study. In this case, it allowed the analysis of documents of Models or curricular plans for 2013 and 2021 of the undergraduate and graduate majors of the UNAN-Managua. All this is by Solís (2003) who states that this method: "allows the selection of informatively relevant ideas from a document (...)" (p. 18).

Likewise, the transcription technique was used to transcribe the oral speeches of the interviews and focus groups. In this sense, Tusón (1999, p. 99) states that: "the transcription of the recorded material constitutes a fundamental step in the study of verbal interactions and with the transcription, the analysis begins (...) it can -and should- always be revised and adapted to the needs of the analysis".

For the comparative analysis of the concepts and objectives of the curricular plans of both 2013 and its reform in 2016 and 2021, a double-entry matrix was elaborated, which allowed identifying how the transition from one plan to another occurs, without undermining the previous one. This analysis was carried out to identify elements of the relationship between them and whether the previous model expressly or implicitly states the continuity of undergraduate training in postgraduate education, as well as to determine from what the majors and the vision of these arise. For this purpose, the triangulation of information was used, taking into account

the relationship between the objectives of the study, the research questions, and the units or categories of analysis proposed in the categorical system based on the instruments for data collection and the proposed analysis techniques (Piñuel and Gaitán, 1999, p. 212).

RESULTS

Analysis of the main conceptual elements of the curricular plan of the majors of the National Autonomous University of Nicaragua, Managua (UNAN MANAGUA) in the framework of graduate degree continuity.

An analysis of these elements is presented to identify, the concepts, similarities, and differences between both plans, as well as their application in practice and, in addition, if there is in them an expression of continuity from undergraduate to graduate education. The following matrices present the elements that were analyzed.

Tabla 1

Comparative analysis of capabilities vs. competencies.

Plans	Concepts	Common Elements	Different Elements	Application in practice	Continuity in postgraduate education
2013	They include attitudes, skills, and abilities that a person achieves through learning processes and that are manifested in their performance in various diverse contexts (UNAN-Managua, 2015, p.125).	Both concepts are focused on developing or training an individual capable of performing a certain function in diverse situations and contexts.	In the 2013 plan, it is referred to the formation of skills through the formal learning process, while that of the 2021 plan, its focus on the implementation of skills in an integrative and systematic way.	In the course of the training, the graduate has the possibility of doing internships in different fields according to his or her major.	There is a gap. There are few opportunities for some majors to further enhance or train graduates' skills.

Plans	Concepts	Common Elements	Different Elements	Application in practice	Continuity in postgraduate education
2021	2021 Ability to put into practice in an integrated and dynamic way knowledge, skills, attitudes, and values to face the solution of life problems (UNAN Managua, 2020, p. 10).			The graduate puts into practice his or her competencies in the fields of action, to such an extent that some are recruited from that moment on to assume responsibilities in certain institutions or companies.	In this, there are plans for the continuity for the consolidation of the competencies of the graduates through competencies, integrating, elective, and elective axes.

From the previous matrix, it can be deduced that there is a close relationship, since both curricular designs, from their conception, pursue an integral formation of the being. However, the 2013 plan does not propose a strategy that favors the integration of knowledge and its development. On the other hand, in the 2021 plan, there is a methodology and strategy on how to develop these competencies in a comprehensive manner and with social and research projection: integrating components. Meanwhile, the 2021 plan responds to one of the educational routes declared in the PNDH and, therefore, to the SDGs: "better education" because it is built from the demands of society and thus aims at the student developing autonomy and being the protagonist of their learning.

Regarding the expression of continuity, in the 2013 plan there is no link between continuity of undergraduate and graduate education, not so in the 2021 plan, which expresses "to implement an integrated and dynamic way", which makes it clear that this integrated way goes beyond the teaching-learning processes, but rather, such integration is of the levels of studies, undergraduate, graduate and postgraduate, in addition to the integration of knowledge (inter, multi, transdisciplinary).

In this sense, generic competencies are one of how continuity occurs, i.e., they are transferable, because*"(...)* ***competencies*** *are formed over time, there will be competencies that begin in one semester and are consolidated after 5 years or more, well" (****E3-EEDGp1****).* Specific competencies, on the other hand, refer to those necessary to master knowledge and then apply it in a specific discipline or area. They are those that are related to the tasks of the profession and the specificities of a field of study (UNAN-Managua, 2021). Meanwhile:

> ***competencies****, as the theory itself says, are a series of abilities, skills, and aptitudes that in an integrated manner from a student (...) UNAN-Managua, in its model of* ***generic and specific competencies, those of the other majors*** *have established the formation of competencies at the undergraduate level, but as this formation should not end there, then it takes on value, what we have called the continuity of competencies towards the graduate level* ***(E2-EEDGp1).***

In addition, the issue of continuity of training or consolidation of competencies through training in postgraduate majors is suggested. This other part (graduate studies), as part of the strengthening of competencies, is considered one of the most feasible alternatives in the training process:

(...) the connection of undergraduate competencies with postgraduate would be in the sense that the undergraduate student understands logic and that it would be easy to transit to postgraduate, true, but not necessarily with the specific areas of training, but, rather, with the part of the curriculum (E2- EDDEp4).

All of the above corresponds to the curricular design to develop competencies at UNAN-Managua, which seeks "to respond to the complex needs and changing demands of society. It implies a reexamination of the social, cultural, economic, and environmental challenges and a coherent alignment of curricular activities" (UNAN-Managua, 2021, p. 12).

In other words, this curricular design implies reflecting on previous actions and, from these, discriminating good practices and, based on them, promoting new tasks that allow the integral development of the individual. That is why it involves joint and systematic work of

activities, because "the model to develop competencies is developed in several moments, which have as fundamental characteristics systematicity, integration and the theory of action" (Escobar, 2020, p. 60-68).

Table2

Comparative analysis of subjects vs. curricular components.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Subjects:** There is no definition, it is only expressed that there are general, basic, and professionalizing subjects. In addition to the general structure of the elements of these (UNAN-Managua, 2015, p. 10). The curricular components have a theme to develop competencies and above all knowledge in the student. Its structure is more generalized and refers only to the topics to be developed. It fulfills the general purpose of outlining a certain theme to be developed in a range of time. There is no connection of continuity of a subject at the graduate level.	The curricular components have a theme to be developed, to develop competencies and, above all, knowledge in the student.	Su estructura es más generalizada y está referida únicamente solo a las temáticas a desarrollar.	Cumple con el propósito general de esquematizar una determinada temática que se debe desarrollar en un rango de tiempo.	No existe conexión de continuidad de una asignatura en el nivel a postgrado.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Curricular components:** is a learning unit, present in the study plan, that integrates knowledge, skills, attitudes, and values that contribute to the fulfillment of elements of the graduate profile (UNAN Managua, 2020, p. 11).		The topics to be developed, for example, its objectives, generic or specific competence, as well as what they should contribute to the integrator.	It is developed considering both generic and specific competencies, as well as the purposes to be considered in terms of learning outcomes.	In the 2021 plan, curricular components are referred to as modules. From them, continuity is given to postgraduate studies.

As can be seen (Table N°2), there is no relationship between the subject and components. In the curricular components, in addition to the essential contents, there are the results that the student is expected to achieve during the teaching-learning process, that is, the contents, actions, form of evaluation, and integration strategies revolve around achieving competencies at a given level. Meanwhile, in the 2013 plan, according to the general structure of the subjects, these are in function of the teacher, that is, what the teacher wants the student to know how to understand or know how to do, so it is formulated around that aspiration on the student's knowing and doing, in a measurable, achievable way and in a specific time, because the teacher is the subject of action, while the student is the subject on whom the direct action falls.

Table 3

Comparative analysis of the educational model.

Plans	Concepts	Common elements	Different elements	Application in practice	Postgraduate continuity
2013	Educational Model: It is understood as a theoretical scheme of the educational system that each Educational Institution elaborates to facilitate its understanding, visualize the philosophical, epistemological, psychological, and pedagogical position, and implement the system itself to achieve its objectives in the best way (UNAN, Managua, 2011, p. 128).	In both plans are declared the intentions of training a professional with a vision of commitment to citizenship, the environment, and society in general.	Generalized intentions focused on institutional commitment	The model is complied with through the development of the ideas outlined or proposed in it.	The educational model does not refer to the continuity of undergraduate training in postgraduate studies.

Plans	Concepts	Common elements	Different elements	Application in practice	Postgraduate continuity
2021	**Learning Model**: The educational model to develop competencies assumed by UNAN-Managua takes the credit ranges proposed by the Qualifications Framework for Central American Higher Education (MCESCA) as the equivalent of the annual workload for full-time students (UNAN Managua, 2020, p. 38).		This model carefully details the correspondence with national and international requirements.	It pursues a composite methodology in which one can identify features, strategies, and models of its own that were designed to guide the learning process.	The MCESCA presents a proposal for both the undergraduate and graduate level for HEIs in both, the continuity at the graduate level on the new learning model.

In this case, it is evident (Table 3) that the learning models are different. The first one (2013) advocates a general education, that is, less comprehensive. Meanwhile, this model has as its purpose "to promote the construction of knowledge that has meaning and relevance in the solution of real and everyday problems (...) interaction and self-reflection are encouraged, thus paying attention to the development of analytical and critical thinking" (UNAN, Managua, 2016, p. 58).

From the above, it can be deduced that the knowledge built in this model is centered on knowledge. Even though scientific training is announced, there is no methodology or strategy on how to carry it out neither the undergraduate nor the postgraduate, since the latter is not conceived in this model. On the other hand, the curricular model to develop competencies proposes a general methodology on how to achieve this comprehensive training that is in correspondence with the axes and these with the fields of actions in which the professional will develop. In addition, the same strategy presents how continuity from undergraduate to graduate level is

achieved. In this model: "(...) it is imperative that the student develops critical judgment to discern the relevance and pertinence of the information, taking into account the context and the situation or problem that it helps to solve" (UNAN, Managua, 2021, p. 18).

Hence, the curricular model by competencies 2021 focuses its interest on the student and strengthening the competencies (generic and specific) at both levels, undergraduate and graduate, which are declared in each major according to the level and semesters. This indicates that, despite the existence of this relationship, there are also differences, which refer to continuous improvement and demand the active participation of the agents of the teaching-learning process.

Table 4

Comparative analysis of the evaluation system.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Evaluation system:** a systematic process of gathering information (qualitative and quantitative) to judge the value or merit of some area of education (learning, teaching, programs, institutions, resources, etc.) (UNAN-Managua, 2015, p. 126).	In both cases, the final intention is to certify that a student has reached the qualification to pass the next higher grade, as seen from the grading system established by the University.	The qualification ranges are marked by regulations that establish the periods and number of evaluations to be applied, and all of them are quantitative.	There are some variants or adjustments that are at the discretion of the teachers, but the final intention is always to quantify the academic activities developed by the students.	Many of the postgraduate programs have the same quantitative evaluation system in its broadest sense, but the grade is higher for passing the course.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Evaluation system:** these are the references that guide the evaluation process. Therefore, these references help to qualify objectively - reducing subjectivities - the development achieved by the students about the learning objectives and competencies (UNAN Managua, 2020, p. 41**).**		In this plan, the evaluation system changes radically even in the numerical ranges and most of its evaluations are formative, aiming at the development of competencies.	In this plan, criteria are unified on the forms of evaluation due to the lack of habit to the development of a theme and its purely formative evaluation, which breaks the traditional paradigm.	The application of the new evaluation model at the postgraduate level is still being planned, as a result of the execution of majors that are adjusted to the curricular design by competencies.

From the above (Table N° 4) it can be deduced that the evaluation, in 2013, assesses the results of the teaching-learning process to recognize the successes as well as the deficiencies and difficulties of the students, but there is a contradiction with the conception of the same since it is stated that it is "integral", however, the evaluation is assumed from an individual perspective, therefore, its primary objective is the summative evaluation of the knowledge acquired by the students:

> It evaluates not only the students but all the elements involved in the process: curricula, subject programs, teaching-learning strategies, materials used, physical resources, learning environment, and teachers' performance (UNAN, Managua, 2016, p. 58).

In the 2021 plan, the form of evaluation differs from that proposed in the 2013 design or plan. In this, the evaluation is done procedurally, since, what is intended is to have an evaluation of the development achieved by students concerning the learning objectives and semester competencies.

In this model, the evaluation process has a continuous, permanent, and integral character, which gives rise to different approaches related to the reality to be evaluated. That is to say, the evaluation of competencies requires obtaining information on all the aspects that conform to them, that is to say, it must contain evaluation of the **conceptual** (knowing), **procedural** (knowing how to do), and **attitudinal** (knowing why it is done) aspects.

Meanwhile, in the 2021 plan, to evaluate learning,

> it is necessary to take into account the learning objectives: it is necessary to take into account the objectives of the curricular components, the major competencies, and the elements of competence, which are nothing more than a set of attributes (knowledge, values, skills, and attitudes) for the performance of the subject according to the level of study he/she is studying (UNAN Managua, 2021, p. 44).

Table 5

Comparative analysis of axes.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Axes:** The Curricular Grid, in addition, reflects the balance of the Curriculum by training area (general, basic, and professionalizing), by disciplinary areas, and by training axes (UNAN-Managua, 2015, p. 101).	In both the intention is to strengthen professional training from a perspective aware of the needs of society in general and that in the end affects everyone for example the axis that has to do with values, the environment, and inclusion among others.	In the 2013 plan, they are generalized.	These are not considered many times by the teaching staff, since they go for the development of the subject and do not take into account the axes of the program.	As in undergraduate education at this level, they are not considered as part of postgraduate education.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Axes:** The axes are defined as concepts, principles, values, skills, and ideas that, when integrated, give direction and orientation to the reform of the educational system and sector, including basic, professionalizing, integrating, optional and elective components (UNAN Managua, 2020, p.13).		In the development of each component, the axis to which it belongs and the intentions or purposes it obeys are considered, without losing sight of the competencies to be developed.	En el desarrollo de cada componente se va considerando el eje al que pertenece y las intenciones o propósitos a los que obedece, sin perder de vistas las competencias a desarrollar.	These axes are a way of marking the continuity from undergraduate to postgraduate training.

As shown in the previous matrix, in the 2013 curriculum plan they are presented in a general way, without specifying their classification. Hence, the subjects, as previously stated, focus on the development of contents and, these in turn, on the development of knowledge, memorization of data and facts, relationship of elements and their parts, discriminating, listing, and comparing, among other actions, which according to the model are effective ways of learning. That is, it is considered that the systematic acquisition of knowledge, classifications, theory, etc. related to scientific subjects or professional areas is the best way for the development of skills and abilities.

On the other hand, in the 2021 plan, the disciplinary axes and the components that belong to them are made clear. Likewise, the relationship or integration of the axes with each other in a semester and, therefore, in the development of the major. These, in their

internal construction, set guidelines for the continuity of undergraduate and graduate training, since there is a dosage of the contents to be developed according to the level and this dosage allows for the deepening of the competencies corresponding to these axes. This leads to the identification of elements such as: Vertical, basic, professionalizing, integrating, transversal, and horizontal axes, in addition, to transversal themes.

In this sense, Escobar (2020, p.65) states that: "it is necessary to analyze what will be the contents to be developed in the professional training of each major. In addition, it is necessary to define what will be their distribution in the time of the training, the knowledge (learning) that is intended to be achieved".

Hence, the *"(...) competency-based majors have well-defined axes at all levels, that is, all the axes that have been declared are defined and declared each one of them, as well as the ways to develop them (...)"* (E3-EDDEp5).

Table 6

Comparative analysis of integration.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Integration:** complementarity and coherence between the tasks of academic, research, extension, administrative, and union bodies (UNAN-Managua, 2015, p.).	In both, the intention is to integrate all the agents, to train a professional who can solve the problems in the environment where he/she will work.	In this plan, the idea of integration is directed to elements exogenous to the program itself, and in many cases, it is due to circumstantial or current situations.	In this plan, there are gaps due to the lack of coordination between academic instances.	In this one, there is no integration of levels.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Integration:** the integration of the knowledge necessary to develop the competencies of the major is interdisciplinary, and occurs both horizontally and vertically, within the discipline and between disciplines, as the student evolves in his or her training (UNAN Managua, 2020, p. 16).		This program contemplates integration as an active part, in such a way that it has a direct impact on the formation of the professional.	Integration is conceived from another perspective, specific to each component and major with the same vision, which is the development of the competencies declared in the curricular model.	In this case, the integration of "majors", including postgraduate studies, is suggested.

As for the integration of knowledge and levels in the 2013 plan, it occurs, but only internally in each subject, nor does it transcend to another, while it does not happen in the different levels of study such as postgraduate. This is because it is conceived that the student arrives at the university: "Therefore, the strategies prepare the student (individually and collaboratively) to be an active generator of knowledge" (UNAN-Managua, 2013). Meanwhile, integration is intradisciplinary, because the student body is considered a passive subject or receiver of information, i.e., "it assumes a genuine commitment to its training, i.e., it is disciplined, participatory, dynamic, creative and critical of the teaching-learning process in all its dimensions" (UNAN-Managua, 2013), i.e., integration in learning is not an element that allows giving answers to social demands.

Now, in the curricular design to develop competencies at UNAN-Managua, better known as "Plan 2021", a semester integrating strategy is declared that integrates all the components that are developed, without detriment to strategies that the teacher can use for the development of a component and that, indirectly or directly, contribute to achieve the integrating strategy. This is of "(...) interdisciplinary type, and occurs both horizontally and vertically, within the discipline and between disciplines, as the student evolves in his or her education" (UNAN-Managua, 2021, p. 16).

One form of integration of components, axes, and, therefore, levels, is the integrating component: "research and professional training practice are integrated until the culmination of studies. Work research activities should be developed through projects, professional internships, and case studies (...) (UNAN Managua, 2021, p. 16). That is to say, through the integrating strategy, by the fact of being built considering the procedural contents, these are a strategic process for the integration of learning.

Table 7

Comparative analysis of teachers.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Faculty:** Teachers at this institution play a mediating, facilitating, and innovative role in the teaching-learning process. In addition, they work as a team with counterparts in their academic unit and with teachers from other areas of knowledge, to ensure interdisciplinarity (UNAN-Managua, 2015, p. 45).	In both cases, they are responsible for the development of curricular programs.	In this plan, the teacher works independently and establishes his horizons in the formation and development of the curriculum	In fact, in this plan, each teacher works independently to glued only to the program to be developed.	The same as in grade level, they work independently.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Professor:** in charge of evaluating student performance with indicators, descriptors, and levels based on an integrated qualitative vision, which allows for reducing evaluation errors centered on averages or rigid numerical scales (UNAN Managua, 2020, p. 42).		In this case, there is teamwork, and the actions to be developed are agreed upon to broaden the expectations of the competence being pursued.	There is still a struggle for integration and teamwork, but the fruits of this work can already be seen through the elaboration of joint planning.	The undergraduate teaching staff also in the postgraduate program.

From the above, it can be deduced that the teaching staff, in both plans, plays a very important role, since it is an important pillar for carrying out the actions of the educational task. Meanwhile, in the 2021 plan, the teaching subject, recovers a transcendental value, because it is the guide and trained to direct the process of developing competencies at both levels: undergraduate and graduate. They are the ones who elaborate the undergraduate and graduate curricular designs, therefore, they have to be clear about how this continuity from undergraduate to graduate training should be given: "A teacher who is involved in the practice, willing to work on integration, with institutional identity, and with society, (....) of a project that allows him/her to practice this continuity from undergraduate to graduate" (EEDPp8). Meanwhile, teachers have the mission of outlining or creating problem situations that allow students (undergraduate and graduate) to determine the knowledge, skills, aptitudes, and attitudes required to solve the problems they face.

Hence, the relevance that the teacher in charge of the axes should be a specialist in the area of knowledge and, in the case of graduate programs, with research on the lines of research declared in that program and the group of researchers that will allow him/her to strengthen such lines:

- Specialist of the major in training.
- Experience in methodological work or willingness to learn.

- Preferably in the professional practice of the major.
- With capacity for teamwork and leadership.

These characteristics described above are because this axis has multiple functions, for example: research, innovation, and extension, among others, since in its curricular conception it contains topics of procedural order and, therefore: "*these are a strategic process for the integration of the learning of the contents and objectives that make up the module or curricular components of the graduate program" (GFCPPp3).*

Likewise, the importance lies in the fact that in this axis lies the greatest responsibility of both the teacher and the student to ensure that the knowledge is revealed through the development of a product that includes all the scaffolding of the disciplinary components: "*it is of vital importance because, in addition to the person, he is learning by doing it, right, he is also seeing the importance of what he is doing at this moment" (GFCPPp5).*

In addition, the teacher in charge of the integrating axis must be a teacher who has the scientific, procedural, and attitudinal mastery to guide the teachers in charge of the disciplinary components and the students to solve or comply with the product they are asked to produce: *"the* ***professor in charge of the integrated component must have at least basic knowledge of*** *the other components. Why? Because he/she is leading the group that is designated for that year (...) (E3-EDDEp7).*

Table 8

Comparative analysis of Student.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Students:** The student assumes a genuine commitment to his training, that is, he is disciplined, participatory, dynamic, creative, and critical of the teaching-learning process in all its dimensions (UNAN-Managua, 2015, p. 46).	In both cases, it is the subject to be trained and who receives the instruction to then develop independently or in groups the corresponding assignments.	In this program, his protagonism is more passive, due to the traditional form of the program design.	In reality, the student only receives the information and acts according to the orientations assigned to them by their professors, based on their professors' initiatives.	It does not express that the student can continue their training at the next level.
2021	**Students:** assume a genuine commitment to their education, that is, they are disciplined, participative, dynamic, creative, and critical of the process at the different levels (UNAN Managua, 2021, p. 15).		In this plan, the student is an active agent in its development and is integrated more regularly due to the very nature of the curriculum.	Unlike the previous plan, here the student has the space to propose his ideas and initiatives in the process of his training, which allows the development of competencies.	In this, it is clearly expressed that the student is active-participatory at the different levels (undergraduate and graduate).

As can be seen in the previous matrix (Table N° 8), students play the central role in the competency-based model, although in the 2013 plan, it is expressed that they are the center of the educational task, but they do not have a leading role, while in 2021 they do. This is because competency-based learning focuses on integral development and allows students to make decisions based on what they already know and master, which encourages constant development

Table 9

Comparative analysis of professional internships.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Professional internships**: this academic activity favors the integral formation process of the student, through the contrast between theoretical knowledge and the practical activity that reality provides (UNAN-Managua, 2015).	In both cases, the provision is to establish the relationship between theory and practice, so that students consolidate knowledge and develop confidence in their own natural or developed skills through academic training.	The periods are pre-established about the number of hours and times in which they must be carried out.	Time schedules are established and the teachers process the placement and in some cases are placed for convenience.	It is established as a form of continuity from undergraduate to graduate studies.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Professional internships**: This academic activity favors the student's integral training process, through the contrast between theoretical knowledge (multidisciplinary and interdisciplinary) and the practical activity that the labor reality provides. This allows the link between the University and society (UNAN-Managua, 2021).		In this model, from the first year, students must establish links with their work environments and relate theory with practice.	Relevant coordination is made and students are given autonomy to establish links between institutions, thus from the beginning of the major in terms of the labor field.	They consolidate the competence acquired in the degree and a program of internships could be established with which their report could be awarded credits for postgraduate training.

These internships combine know-how, that is, they are oriented to the application of usual methodological procedures based on conceptual knowledge. However, according to the 2013 curriculum plan of UNAN-Managua, with these, it seeks the student to apply conceptual knowledge to solve problems of the environment, since: "*this model seeks (...) a broader understanding of the human being, manifested by students in intellectual autonomy, creativity, reflection and critical thinking; in the development of skills and abilities (...)" (UNAN-Managua, 2013, p. 45).*

In general, these internships require a sequence of steps, or sequence of actions for which the acquisition of the necessary skills and abilities (conceptual), the elements involved, and how to work them is required. Hence, these require that the skills to be developed are structured logically and coherently and that there is a close relationship between them. These increase the level of knowledge and effort they require to be carried out, and theoretical-technical procedures are applied for their execution since they transcend to the postgraduate level.

Table 10

Comparative analysis of the concept Authorities.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2013	**Authorities:** This management team is made up at the different hierarchical levels of area chiefs, Technical Councils of the departments, directors (as) of the Teaching Departments, Faculty Councils, Center Council of the Polytechnic Institute of Health (IPS), and University Council (UNAN-Managua, 2015, p. 44).	They are responsible for the planning, organization, distribution, and execution of the different curricular programs, as well as the establishment of different regulations for programmatic execution, among other extracurricular and academic functions. Here the direction is more vertical.	In this case, they focus on the distribution of the different programs, as well as ensuring that they are carried out in accordance with the established regulations. Execution is more vertical.	The execution is vertical and unidirectional, it must be executed as planned, and there is not much faculty participation.	Does not refer to graduate degree continuity.

Plans	Concepts	Common elements	Different elements	Application in practice	Continuity in postgraduate studies
2021	**Authorities:** To achieve effective integration of teaching, research, and extension functions the CCC will be composed of: a. The Vice Rector for Teaching (who presides over it). b. The Deans and the Director of POLISAL. c. The Vice Rector for Research, Graduate Studies, and Extension. d. A representative of the teachers' union designated by the Board of Directors of the Association of Teaching Workers (ATD), with technical experience in curriculum. e. A student representative designated by the National Student Union of Nicaragua (UNEN). He/she must be a third-year student if coming from a Higher Technical major or a fourth or fifth-year student if coming from a Bachelor's degree or its equivalent. He/she must have passed all subjects. f. The directors or coordinators of the majors may be summoned to the sessions when necessary (UNAN Managua, 2020, p.29).		The functions are distributed according to the requirements, and teamwork, the direction is more horizontal, and the teaching staff is consulted and trained with the purpose of establishing disposition and awareness in the new model.	Execution is horizontal and gives room for the participation of the teaching team, allowing for adaptation according to the needs that arise in the development of the different components.	In this plan, the authorities ensure compliance with integration, including training levels.

From this perspective, the institutional leaders at UNAN-Managua assume the curricular transformation and its curricular improvement, in both plans, in a permanent way as a strategic task. The role of the institutional leaders or authorities is based on the principles of effective leadership. This implies ensuring compliance with the Strategic

Plan, institutional rules, and regulations, to contribute to quality assurance in curriculum planning and management. In short, it is about ensuring the quality of the professional training processes offered by the university.

In this sense, interviewee two expressed:

(…) *as an authority, whether it is a* ***dean, rectorate, or other*** *authority that speaks of a university that wants to grow and that has graduate programs without linking with the continuity of study with a degree is not necessary. Therefore, the* ***authorities*** *should be the first to ensure that there is this continuity and give the response that is essential regardless of the model that the authorities are clear about this (…)* ***(E EDPp8).***

It is evident that this approach by objective corresponds to a socio-constructivist approach, not only because of the integrality of the constructive aspects of human thought but also because of the intentionality of the formation of reflective criteria, research competencies, and above all the ability to positively influence the knowledge society, as stated in the vision of the university:

> To train comprehensive professionals and technicians from and with a scientific and humanistic conception of the world, capable of interpreting social and natural phenomena with a critical, reflective, and proactive sense, to contribute to social development through a person-centered model (…) (UNAN, Managua, 2011).

Now, in comparison with the objectives of postgraduate training, one of these refers: "to contribute to the training of highly qualified human resources, capable of understanding reality and influencing the foresight and solution of problems" (UNAN -Managua, 2017). That is, this postgraduate objective seeks that graduate students can relate final research work with intervention projects or work practices. But for this to be possible, the corresponding previous continuity between the different undergraduate majors is required to ensure it. Therefore, it is evident that the relationship between undergraduate and graduate objectives is scarce in all areas.

With this situation, this was similarly expressed by the Education department directors in the interview conducted in **ESEDdept1:**

> *(…) to begin with, the curricular design of the 2013 plan majors is very specific and a curricular design like this is also in the postgraduate also that is to say they keep the characteristics of the curricular design in degree, which is not so, point one, second there are areas of knowledge that in the degree that are not transferable to the postgraduate, that is to say, no, no, no, there is no connection for postgraduate.*

This indicates that the topics that are developed during undergraduate training are very in-depth and this makes these majors unattractive, and it happens that the basic training areas are not strengthened and neither are the professionalizing ones. Hence, the actions are not "transferable" to the postgraduate program, but not only from there but also from the conception of the major.

CONCLUSIONS

In summary, it can be said that according to the philosophical conception of the 2013 plan, this seeks the development of the "being" through capacities, abilities, and skills in an integral way to solve problems of the environment jointly, but it is not expressed taxatively through strategies that allow to achieve them, not so in the 2021 plan, in which it is stated how they are achieved; for example, the integrating components. As for the continuity of the graduate degree, in the 2013 plan, it is not expressed, but in the 2021 plan it is marked, through the integrating, elective, specific competencies, research, and extension axes, which obey specific competencies by levels and are directly linked to the generic and specific ones and these are trans, multi, and interdisciplinary and are transferable to the graduate degree.

The educational model of the 2013 plan is generalized and structured in subjects, that focus their interest on the development of content, i.e., focused more on institutional commitment and does not allow to glimpse a way of continuity of graduate training in postgraduate studies. While the 2021 plan carefully details disciplinary axes that are in line with national and international requirements and its focus is on society and, from there, it marks the continuity of undergraduate graduate training.

The evaluation, in the 2013 plan (organized in subjects), is individual and through archaic practices (exam and in some cases research), not so in the 2021 plan (organized in components) and is carried out in a processual manner and focuses its interest in knowing how to do and be and through the same strategy for the components of a semester, called components (integrators, basic, professionalizing, integrators, electives, and electives) and this carries with it the formation of knowledge, research and extension and it is through these integrator elements that the continuity of graduate degree in postgraduate is presented.

The integration and professional internships, despite pursuing the consolidation of knowledge, in the 2013 plan is given in an endocentric way and this does not allow the continuity of graduate degree. In the 2021 plan, integration and professional internships pursue the same purpose as in the 2013 plan, but in this one, it is given in an exocentric way and this allows integration between components, axes, and, therefore, with the graduate program.

The teachers in both plans are the pillar of the educational task, but in the 2013 plan they are the protagonists, despite expressing that this role is played by the students, while in the 2021 plan, they are the guides of the process and the main actor is the students. In both undergraduate and graduate programs, they play the same role, from the construction of curricular designs to the execution of the curriculum, since it depends on them whether or not the continuity of undergraduate to graduate programs is achieved.

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