



# Quality in the UNAN-Managua training process

## **Alvaro Antonio Escobar Soriano.**

National Autonomous University of Nicaragua, Managua (UNAN-Managua), Faculty of Education and Languages, Managua, Nicaragua.

Principal Research Professor of the Faculty of Education and Languages, Director of Undergraduate Teaching at UNAN-Managua.

<https://orcid.org/0000-0001-6566-3006>

[aescobar@unan.edu.ni](mailto:aescobar@unan.edu.ni)

[antonioguinea1940@yahoo.es](mailto:antonioguinea1940@yahoo.es)

## **Roberto De Armas Urquiza.**

Professor Emeritus, University of Havana, Havana, Cuba.

<https://orcid.org/0000-0002-0046-1689>

[roberto@rect.uh.cu](mailto:roberto@rect.uh.cu)

---

Submitted on September 30th, 2022 / Accepted on April 25th, 2023

<https://doi.org/10.5377/rtu.v12i34.16336>

**Keywords:** Education, Quality, Academics, Competences, Integration

## **ABSTRACT**

**A**t UNAN-Managua<sup>1</sup>, has been carried out the curricular improvement process for undergraduate courses. To implement it, we have made a training process for academic teams (Curricular Commissions). It has been carried out during the following stages: construction of the curricular design of the careers, implementation, and execution of the curriculum, and monitoring and evaluation.

---

1. This research article is part of the research line: "Education for development" and the sub-line ced-1.6: management and Quality in the education of the UNAN-Managua. It was carried out in the context of the implementation phase of the model to develop competencies that are developed in UNAN-Managua.

This study is qualitative educational research, which allowed a critical reflection about the information obtained – using the following techniques: observation, document review, focus groups, and interviews– from the actors involved in the above-mentioned processes. It is an inquiry in a continuous process, which is capturing the educational transformation operated by the application of the model to develop competence not only in teachers but also in students. The results have now enabled significant decisions to be made to improve their learning.

We are aware that the quality of student learning depends to a large extent on teachers' knowledge of the model, integration strategies, active participatory methodology, and the learning evaluation system. For that reason, the Vice Rector's Office for Teaching has designed a strategy for continuous improvement of their training, which has been implemented in 2022 in response to the needs expressed by teachers and students. In this way, the quality of teaching knowledge will be raised and the immediate effect will be better learning and improved student retention and promotion.

## **1. INTRODUCTION**

This work focuses specifically on the management of the teacher training process at UNAN-Managua, concerning the model for developing competencies, which does not mean that it leaves out the effects of this on student learning.

The process of curricular improvement through which the university has gone since 2019 has its antecedents in the curricular transformations of 2011, 1999, and 1994, of which there are documentary records. However, these processes culminated in the elaboration of the curricula with some efforts aimed at teacher training that did not pay in improving the implementation of the curricula of the careers.

The quality management of teacher training is a topic of high relevance today. This arises from the need for Higher Education Institutions to improve the learning processes and skills of teachers and students. However, it is not a concern, but the result of processes of deep reflection on the real link between meaningful learning and quality teaching to develop the professional performances required by society.

This, process must go beyond the demand of teachers and the imitation of other universities, so that the root causes can be studied before thinking about ways to improve it (Castilla, 2011). Therefore, teaching quality must be permanent, to achieve communities of professors aware of the importance and ethical duty with the main foundations of university work: academic-professional training, production of knowledge, and social responsibility (Tapia, 2013). Therefore, the quality of the training of the Higher Education professional is a priority for universities, hence the need to create strategies to improve it, but based on indicators and

quality criteria that allow a training process with relevance and social impact under the needs and demands of the environment (Rivero Rodríguez, 2015).

However, in the current context of the internationalization of Higher Education, it is necessary to objectively study the criteria for the analysis of the quality of the educational process, which undoubtedly includes the quality of teaching and the quality of teachers. This examination should lead to the construction of indicators that harmonize teaching competencies with a view to the contextualization produced by mobility, in order not to fall into misinterpretations and communication difficulties with their competence scope (CINDA, 2016).

This, quality management systems in universities are today the key to decision-making in university institutions (López, Díaz, and de la Concepción, 2017). These favor focusing all efforts, with solid objectives, on achieving the improvement of their substantive processes: teaching, research, and extension linked to each other and those related to their radius of action (Romero, Alfonso, Álvarez, and La Torre, 2019). The relevance of managing the quality of teacher training goes through the interpretation of teaching in the light of its quality in the new scenarios of the professional performance of the university trainer, in which he is a counselor, facilitator, and coach of himself and the students. Consequently, when integrating this work with the dimensions: of disciplinary, pedagogical, and human, it is necessary to establish tangible criteria, which allow us to determine its quality. These criteria are already incorporated into the accreditation models of higher education institutions, therefore, they are of high importance today for universities and the societies they form (Clavijo-Cáceres, 2020).

The objective of this study is to present the progress that has been obtained in terms of teacher training during the stages of improvement, implementation, and continuous evaluation of the curricular plans of the careers. In addition, a brief theoretical foundation defines the main aspects of the methodology which is qualitative with a considerable level of description, given the complexity and breadth of informants and the amount of information collected over two years.

The main conclusion is that thanks to the integration of all actors, the implementation of the model to develop competencies is giving satisfactory results. To improve teacher training and student learning, a training process will be initiated that includes workshops and a master's program which aim to consolidate the model and create a sustainable continuous improvement route, which will respond to the needs detected with the accompaniment and those expressed by teachers and students.

### **1.1. Quality in higher education**

Quality in Higher Education covers many aspects that intervene in university work. In this study, two definitions adopted by the National Council for Evaluation and Accreditation

(CNEA, 2020) are considered, related to the concept of quality. The first, *quality of education*, broadly reflects how it operates transversally in the country's educational system and focuses its action on its continuous improvement, its ultimate goal being learning for the lives of Nicaraguan citizens (National Assembly of Nicaragua, 2006).

The concept of *quality of higher education* is also very relevant because it gives meaning to the mission of universities. This makes explicit reference to the imperative that the Nicaraguan university must obligatorily train professionals with quality and that this training responds to the needs and expectations of its society, through the continuous improvement of its processes (CNEA, 2019, p.40).

For UNAN-Managua, the quality concept points to the excellence of its work in a course of continuous improvement that transforms through all its processes. Therefore, it is committed to the development of the country, and for that, it focuses its mission on the training of professionals who contribute decisively to it. However, to travel along the complex path towards excellence, the concept of *quality management is required with which the course that allows: "maintenance and sustainability of continuous improvement at each of the levels of management (...)* strategic, key and support processes that are developed at the University, aimed at satisfying the demands of Nicaraguan society (National Autonomous University of Nicaragua, Managua, 2020, p. 47).

This, the teacher training process at UNAN-Managua responds directly to the requirements demanded by Law 582, Law 704, and the CNEA quality model. Therefore, to consolidate the model to develop competencies assumed by the institution, it is necessary to continue deepening its learning, through a series of actions derived from the self-evaluation processes that have been carried out during 2021, which have led to institutional accreditation both nationally (minimum quality with CNEA) and internationally with the Council for International Evaluation and Accreditation of the Union of Universities of Latin America and the Caribbean (CEAI-UDUAL).

## **1.2. Model for developing competencies**

The curricular model that guides this process of curricular redesign and harmonization in UNAN-Managua is the one developed by Sampaio, Leite, and de Armas (2015). It is based on the principle of integrating the social demands of the country into undergraduate and undergraduate careers. This is so, because the university from the key processes teaches, investigates, and expands its work toward the society that expects from it the impulse to achieve sustainable development.

This model adapted to the context of the UNAN-Managua has three characteristics: *the systematicity* between its components, the *integration* of the processes generated by the

interaction between its elements (work of teachers and student learning related to that of institutional and union leaders), and *recursion* of the stages as a direct effect of the complexity of a process of curricular innovation of this nature. To the above characteristics, the activity concept is added, which dynamizes the learning model that supports the processes of development of competencies in students.

### **1.3. Training process at UNAN-Managua**

Teacher training is one of the key processes in the context of the improvement, implementation, and evaluation of the new curriculum (Cuevas, 2010). This is the responsibility of the Directorate of Undergraduate Teaching, attached to the Vice-Rectorate for Teaching at the UNAN-Managua. It is associated with two categories of high relevance: pedagogical practice and pedagogical knowledge; insofar as they generate reflection on the complex processes of knowing, know-how, and knowing how to be and their quality depends on the development achieved in personal training, theoretical training, disciplinary training, training as a researcher and the promotion of institutional values (Díaz Quero, 2006). The five criteria are quality indicators to measure complex teacher performance and its effects on student learning.

The training process at UNAN-Managua began with the sensitization and training of faculty councils, career commissions, academic groups, and students of each career and will end with the planning and organization of the completion of studies. That is, a wide-ranging process is being considered because the complexity required for teachers and students to appropriate the model and its dimensions is a two-way learning process that feeds each other and is not short-term.

## **2. METHOD**

Educational research is an indispensable process that must accompany the educational task. For the present work, on the management of the training process for the implementation of the model to develop competencies in the UNAN-Managua, participatory action research with a qualitative approach was assumed in all its stages. This type of research, in the context of curriculum development (Escobar, Videá, and de Armas, 2021), have the principles referred to by Baxter (2003): use a logical model based on emergent character subject to changes during the process and in the contexts where it acts, consider research as a spiral of knowledge where reflection and action are taken, Make proposals for transformations that seek the perfection of educational practice, by understanding the process of change and critically and systematically analyzing the processes and results.

Therefore, the qualitative research approach was ideal to capture the complexity of the training of academics who manage the curriculum and student learning. Consequently, a

good level of description of the evolution of the stages was achieved about the successes and opportunities to outline a path of continuous improvement in quality in this process.

In this research, intentional sampling was used, because the information was required on the training and learning process of teachers and students of the careers that implement the curriculum to develop competencies (60 careers). For the selection of the informants (directors, coordinators, or teachers and students), the *criterion of maximum variation* was adopted (Katayama, 2014), because they had to be involved in the training process and living the implementation of the new model in the careers. In college, four majors already have two years in piloting and the others are completing their first year.

The main categories of analysis were: training, learning, mastery of the model, development of competencies, and satisfaction with the training process.

The *participant observation* favored a closer approach to the processes, this was aided by audio recordings, short videos, and photographs, which support the memory of the processes. The *documentary analysis* was carried out on different documents used during the training workshops, which provided significant information for the study. Concerning the *focus group*, an open-ended questionnaire was constructed to focus the discussion on four fundamental aspects: How do you assess the training process with the model to develop competencies? What learnings have been obtained in the different training workshops that have been developed? What achievements and opportunities for improvement can be visualized in these training processes? What training needs are required? by 2022? The *interview* with students was semi-structured, this focused on two open questions that allowed quick access to their perception: What has been the progress in their learning with this model to develop competencies? What is your satisfaction with this? The students were interviewed in their classrooms, within the context of their training, in spaces where they had free time.

The triangulation of techniques and the opinions of the informants was the strategy used for the descriptive analysis of the information.

### **3. RESULTS**

#### **3.1. Curricular improvement**

For the construction of the curricular design of the careers, first, a team of advisors was formed who would work in the preparation of the teams of academics of the careers and at the same time would give systematic accompaniment until culminating with the presentation and approval of the curricula of the careers. It should be noted that in 2019 the process began with 14 careers in the Faculty of Education. These were trained in four workshops from July to November on the model to develop skills, the step-by-step for the construction of the curriculum,



and in parallel 10 teams of teachers were trained, one for each Faculty in accompaniment and pedagogical innovation<sup>2</sup>. These training were intended to ensure the implementation of the educational model crystallized in the different curricula of the careers. For this, the formation of teams of companions was proposed, which from their contexts can help solve the problems of curricular execution in the careers. This has become a necessity that the training process is projected to consolidate in 2022.

The first moment of this stage concluded in November 2019, when the Central Curricular Commission analyzed the work done so far: 14 career curricular commissions had been formed with an average of 7 people<sup>3</sup>, equivalent to 140 academics (department directors, career coordinators, and teachers), who received the workshops and were accompanied in the elaboration of the curricular design of the careers. Seven of the fourteen careers had progressed satisfactorily, that is, they had structured the curricular axes and were in the process of developing the curriculum programs. These career commissions were consulted on whether they could start a pilot and at the same time finalize the respective curricular documents. Only four responded to the proposal: Hispanic Language and Literature, Natural Sciences, Social Sciences, and Educational Informatics.

With these four careers, he began the piloting of the competency-based curriculum, which can be considered an emerging moment in the process. To this end, an intensive workshop was planned and executed that lasted one week in February 2020. The teams of academics, who would implement the curriculum (20 teachers of which 4 were responsible for the integrating component), were trained in the semester and daily planning, elaboration of guiding bases of the action and rubrics of evaluation, the evaluation of learning, the learning model by stages and learning schemes, in pedagogical accompaniment, in addition to the strategy for the weekly assessment of the curricular execution. At the end of the training, the following were obtained: the integrated semester planning of the academic teams, the individual semester planning of the teachers, the main guiding bases of the action, and a first version of the rubric of the first integrative evaluative cut; in addition, the experience and improvement of the methodological documents: Semester and daily planning to develop competencies (Escobar, 2021b) and the Regulations for evaluation, academic promotion and equivalences of UNAN MANAGUA 2021 (Escobar and Videa, 2021).

---

2. Each methodological document referred to was used for the training workshops. Each workshop was used as a process to improve them until in the end they were fully validated in the process: (Dirección de Docencia de Grado, 2021, pp. 1-2), (Escobar, 2021a, p. 1) and (Escobar, 2019, p. 1)

3. In the first moment, delegates from the universities that initiated the process of curricular harmonization are added to these career commissions: UNAN-León, the community universities of the Caribbean Coast BICU, and URACCAN, in addition to the private university Rubén Darío. At present, the UNIAV of Rivas has joined.

### **3.2. Implementation and execution of the curriculum to develop competencies**

This stage, as stated in the previous section, began with the emerging moment of driving four races that began in March 2020. This has served as a laboratory, a phenomenon of observation, innovation of the process of training, implementation, monitoring, and evaluation of the curriculum to develop skills. Also, this month began the curricular improvement of 44 who assumed the challenge of the new model. That is, the advisors gave continuous accompaniment in the topics that were developed with the piloting races. Covid 19 appeared on the horizon and the modality of work went from face-to-face to blended and online. The consequence of this was the slowing down of the processes and an adaptation of the curricula to the blended modality with the support of ICT.

In June, the preparation of the axis Introduction to Citizen and professional performances began, which consists of an early training process, not disciplinary that helps students to become familiar with the methodology of integrated and integrative work of academic teams. This axis is directly related to the generic competencies adopted by the university and comprises four components on the themes of institutional identity, learning strategies, analysis of political discourse, logical thinking, innovation, and entrepreneurship. In this same month, except in the piloting races, the educational continuity strategy was implemented in times of pandemic. This consisted of a first exercise of integration of the teams of teachers through a methodology that gave the analysis tools for the visualization of the opportunities of integration between pairs of subjects. The results were successful and served as a basis for the development of the next stage of this stage.

Between December and January 2021, the presentation and approval of the curricula of the careers that assumed the model for developing competencies were concluded. Thus, a new moment of training began in which the teams of academics of the careers in the 9 Faculties and the POLISAL participated. For a week, 20 trainers -advisors and volunteer teachers- transferred the experience of piloting the axis Introduction to Citizen and professional performances to 545 teachers of the 60 careers. The training themes were the same as those that had been developed with the piloting careers and participatory active methodologies and the Design Thinking methodology was added for the development of innovation. The results of this training were: the integrated planning of the teachers, the individual plans, the guiding bases of the action, and a first version of the matrix of the first integrative evaluative cut.

### **3.3. Monitoring and evaluation**

The third stage corresponds to systematic accompaniment to the careers, by the team of advisors of the Directorate of Teaching. During the two and a half years of work, an average of three direct monthly consultancies have been carried out for each of the careers. Significant



achievements have been observed and detected, among which stand out: all careers have their complete curricular document, assume the importance of training workshops to increasingly better understand the model in practice, as stated in the focus group in their responses:

**GFDD1<sup>4</sup>**: *The training we received was relevant and functional. We had the opportunity to understand the curriculum we were building (...) The accompaniment they gave us allowed us to finish our curricular document*

**GFCC1**: *The training provided by the Teaching degree, has helped us a lot and in a great way for the process of transformation of the EEFF and Sports Career (...) The knowledge that we were acquiring little by little through their constant visits was decisive to be able to formulate the new curriculum by competence.*

**GFCC2**: *At least one training process has been carried out at the beginning of each year (2020 and 2021). (...) have been practical training with the curricular improvement implemented and the axis Introduction to Citizen and professional performances. (...) Visit for accompaniment and advice by the degree executives, whenever the career has needed it.*

The teachers have planned the semesters in an integrated manner, mostly adjusting the integrated planning to the individual semester planning, and have built guiding bases of the action with different levels of success, in a similar way they build the evaluation rubrics for each of the evaluative cuts planned by the teaching collective:

**GFCC2**: *To improve practice, and understand the logic of integration in planning and evaluation because in that we were new and no one to ask if we were the first, there was only you who accompanied us in that process. In the preparation of the BOAs and the evaluation rubrics (...) Feedback on the elaboration of cuts and semi-annual planning carried out in the workshops.*

On the other hand, it has been observed that the teachers responsible for the integrative components, with a lot of commitment, carry out accompaniment with different objectives to the classrooms, but still do not take steps to accompany the teaching practice, alleging time saturation as a difficulty to have greater effectiveness: **GFCC2**: (...) *The accompaniment in the race has been little done, there is no time for anyone and it has been my turn, but still without the time and with classes all day (...)*. The previous answer is related to the organization of the time of the teaching work. At present, it has been found that in some Faculties they have made adjustments to the organization of schedules and teaching load, so that teachers can have one day a week for the coordination meeting and so that the teachers responsible for integrating components can dedicate themselves to carrying out the accompaniment of the integrated work teams.

---

4. Concerning the codes of the informants: GFDD1... (Focal Group Department Director); GFCC1... (Career Coordinating Focal Group); GFD1... (Career Teaching Focal Group); EE1... (Student Interview)

The teachers have assumed their role with great commitment, planning the weekly meetings where the advances and problems that have occurred are addressed, they also plan the actions of the following week and elaborate the evaluation rubrics for the evaluative cuts, which allows them to approach the students with greater difficulties as a coordinated work collective. That is, they value positively the training and accompaniments for their teaching work:

**GFD1:** *They accompany the processes according to the needs and interests of the careers. They promote an attitude of commitment to improving the quality of educational processes. They encourage the exchange of experiences that contribute to generating reflection and a critical attitude.*

**GFD2:** *The pieces of training received: Curriculum by competence, Development of programs by competence, Planning by competence (...), Evaluation by competence, and Development of evaluation instruments. They are the theoretical-practical elements that have given strength to the first-year team in the execution of the model by competition submerged by the UNAN - Managua*

**GFD3:** *Appropriation of the new curricular vision, from its conception to its implementation through the didactic methodology. This allowed teachers to rethink our didactic purposes taking as reference the generic competencies and the specific competencies of the different careers. (...) The ability to initiate teamwork and integrated, something we were not used to.*

However, in the systematic observation and the responses of the teachers it has been possible to detect the need to reinforce: the integrated semester planning of the academic teams, the evaluation of the learning by competencies, the elaboration of the guiding bases of the action and the pedagogical accompaniment in those responsible for both vertical and horizontal integrating axes. The teachers consulted responded:

**GFD6:** *Competency-based curriculum assessment. Evaluation of learning in the competency model. Training of pedagogical companions*

**GFD7:** *Strengthen integration: components and identify - integrator - integrative strategy. Evaluation. Integrated planning*

**GFD8:** *Reach all teaching staff, particularly teaching staff, through training or short seminars to ensure the gradual appropriation of the new curricular model. Systematization of integrative teaching practices.*

It is important to highlight that for the advisors it has been a permanent challenge to support the Faculties and their careers. Therefore, each advisory visit is considered a specific workshop for a group of academics. On the other hand, the incapacitation between teachers is

a strategy that favors the transfer of experiences to teachers who are integrated into the work with the new model from one semester to another.

Regarding the opinions of the students, the interviews obtained the following answers in which their opinion and satisfaction are reflected:

**EE1:** *I think the new model by competence is great, since it allows cognitive development, when confronted with the problem, in addition, this new change will be profitable in the future. I am very satisfied with the learning I have achieved and the quality of the teaching staff that taught me in each component.*

**EE2:** *I have deepened my knowledge and better learning thanks to this new method; because I had the experience years ago of having obtained a degree in FAREM CARAZO with a traditional methodology that did not help me much in my learning, (...) I know that it is very strong and requires a lot of effort and commitment, but necessary to strengthen our knowledge (...) because it will be in our hands to be part of this fundamental change in the educational field.*

**EE3:** *I have learned to work as a team, help my colleagues and respect the opinion of others (...) I have improved my oral expression in environments that demand responsibility and commitment (...) I find the model satisfactory. The relationship between the components and the communication between teachers strengthens the monitoring and recognition of the difficulties of the students to contribute to the adaptation of these in favor of approving their learning.*

However, they also state what the group of academics should strengthen: **EE3:** *If I could contribute to improving something, it would be that we should not forget to pay more attention to the study of theory. That is, teachers reinforce the theoretical part.* This is interesting because students are already clear that the competency model develops the three dimensions: knowing, knowing how to do, and knowing how to be.

#### 4. DISCUSSION

During the three years of application of the model to develop competencies, several teacher training workshops have been held at UNAN-Managua in correspondence with the stages of the construction of curricula, implementation, monitoring, and evaluation. The main achievements of this training are the implementation of curricular designs, and the implementation of a new culture of teaching work in the Faculties and careers: they work in integrated teams, they carry out weekly evaluation sessions of the teaching work to the learning of the students and the students feel satisfied by the learning achieved.

To bet on the continuous improvement of teacher training, in 2022 different actions have been developed aimed at strengthening the implementation of the curriculum: a) the formation

of 10 teams of companions in the Faculties and POLISAL, which are still in the process of training and empowerment; for these, the first edition of the master's degree "Curricular management by competences" has been organized, aimed at the team of companions, a quota of scholarships per faculty has already been assigned; b) the realization of workshops focused on the improvement of the practice of integration, with which the work culture has been improved, however some individualistic practices still survive in the teams, c) the systematic accompaniment of careers to strengthen the understanding of the learning evaluation system, so that it is considered a process of humanization and democratization of the learning and teaching process, however, in sectors summative qualification is still privileged; d) implementation of the regulations of Vocational Training Practices (PFP) and Internships in the careers will allow a better approach with the social reality and the areas of action, e) training actions for the external tutors of the PFP) and e) an exercise of individual academic planning has been initiated in some Faculties, in order to identify the pedagogical competences, the research skills, the soft skills and the specific professional skills in the different academic groups, which will guide the improvement in their training.

## 5. CONCLUSIONS

Teacher training is important for the proper implementation of the new competency-building curriculum. As demonstrated, progress is being made in the methodological dimension, however, it is necessary to direct efforts so that groups of academics strengthen scientific knowledge at the postgraduate level (master's and doctorate) in the corresponding areas of knowledge. This will favor the parallel development of methodological and research competencies.

Finally, it is required that training in scientific areas advance more rapidly to reach a recursive-systemic process that generates the continuous improvement of the integration required by the interdisciplinary curriculum designed and implemented by the careers, which requires the integration of research, training, and linkage with society.

## WORK CITED

National Assembly of Nicaragua. (2006, August 3). Law No. 582. General Law on Education. Gazette. Official Journal N°. 150. <https://www.lagaceta.gob.ni/2006/08/150/>

Baxter, E. (2003). The research process in qualitative methodology. The participatory approach and action research. In Colectivo de Autores (pp. 98-112). Methodology of educational research: current challenges and controversies. Editorial Felix Varela.

Castilla, F. (2011). Teaching quality in the university environment: A comparative study of Andalusian universities. *Educate Journal of Education in Accounting, Finance and Business Administration*, n° 2, p. 157 N° 2. 2011. ISSN 2173-478X pp. 157 - 172. <https://dialnet.unirioja.es/servlet/articulo?codigo=3965502>

Interuniversity Development Center, CINDA. (2016). Quality of university education Information for decision making. <https://cinda.cl/wp-content/uploads/2018/09/calidad-de-la-formacion-universitaria-informacion-para-la-toma-de-decisiones.pdf>

Clavijo-Cáceres, D. (2020). Quality and university teaching: some criteria for its assessment. *Journal of Research, Development, and Innovation*, 11(1). pp.127-139. <https://doi.org/10.19053/20278306.v11.n1.2020.11688>

National Council for Evaluation and Accreditation. (2019). Higher Education Quality Model. CNEA.

National Council for Evaluation and Accreditation. (2020). Glossary of Higher Education. CNEA.

Cuevas, L. (2010). Curricular model. The challenge of the educational innovation policy for the management of the university reform. Learning from a construction process at the University of Hidalgo. *Praxis*

Díaz Quero, V. (2006). Teacher training, pedagogical practice, and pedagogical knowledge. *Laurus*, vol. 12, pp. 88-103. <https://www.redalyc.org/pdf/761/76109906.pdf>

The direction of the Teaching of Degree. (2021). Curriculum design to develop competencies at UNAN-Managua. University Press UNAN-Managua.

Escobar, A. (2019). Accompaniment and pedagogical innovation for the continuous improvement of educational processes in the UNAN-MANAGUA. University Press UNAN-Managua.

Escobar, A. (2021a). Step by step for the design of the competency-based curriculum in UNAN-MANAGUA. University Press UNAN-Managua.

Escobar, A. (2021b). Semiannual and daily planning to develop skills. University Press UNAN-Managua. University Press UNAN-Managua.

Escobar, A., Videa, X., & de Armas, R. (2021). Harmonization of Education Careers in Nicaragua: experience and projections. *Revista Torreón Universitario*. vol. 10, no. 27. pp. 8-18.

Escobar, A., & Videa, X. (2021). The Regulations for Evaluation, academic promotion, and equivalences of UNAN MANAGUA 2021. University Press UNAN-Managua.

Katayama R. J. (2014). Introduction to Qualitative Research: Foundations,

- methods, strategies, and techniques. Fondo Editorial de la Universidad Inca Garcilaso de la Vega.
- López, Y., Díaz M., & de la Concepción, M. (2017). The university management system: challenges and perspectives in the training of the professional of the University of Pedagogical Sciences Enrique José Varona. VARONA. num. esp. pp.1-17. <https://www.redalyc.org/articulo.oa?id=360657468006>
- Rivero Rodríguez, E. (2015). Quality management of the professional training process, a challenge of Cuban higher education. TZHOECOEN. V 7 No. 1. 31-44. [https://redib.org/Record/oai\\_articulo2775787-gesti%C3%B3n-de-la-calidad-del-proceso-de-formaci%C3%B3n-del-profesional-un-reto-de-la-educaci%C3%B3n-superior-cubana](https://redib.org/Record/oai_articulo2775787-gesti%C3%B3n-de-la-calidad-del-proceso-de-formaci%C3%B3n-del-profesional-un-reto-de-la-educaci%C3%B3n-superior-cubana)
- Romero, A., Alfonso, I., Álvarez, G., & La Torre, F. (2019). Quality management of university processes. Spaces Magazine. Vol. 40 (No. 31). pp.27-37 <https://www.revistaespacios.com/a19v40n31/a19v40n31p27.pdf>
- Sampaio, L., Leite, P., & de Armas, R. (2015). Curricular design to develop competencies: a methodological proposal. University Press of Tiradentes.
- Tapia, V. (2013). The management of the quality of university education: challenges and possibilities. Culture, Science and Technology, ASDOPEN-UNMSM / N° 3 /, pp. 21-29 <http://asdopen.unmsm.edu.pe/files/Articulo3-3.pdf>
- National Autonomous University of Nicaragua, Managua. (2020). Manual of university processes UNAN-MANAGUA. University Press UNAN-Managua.