Competency-Based Curriculum Planning Model To Overcome Inconsistencies In Vocational Training

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Abstract

The objective of the research was to evaluate the consistency of different training proposals, proposing as a reference a competency-based curriculum planning model. Qualitative methodology was used from an interpretive paradigm, making use of inductive and deductive analysis at the same time. Inductively, observations were generated through documentary analysis, interviews with experts, and a focus group with university professors, who then deductively derived interpretations and forecasts regarding curricular planning. As a result, it was obtained that the designed model, based on the triangulation of the information collected, allowed evaluating and determining the strengths and weaknesses of the priority elements of the university curriculum: the graduation profile, the study plan and the evaluation system. The main conclusion was that it is necessary to have clear parameters for specifying the university curriculum, through a referential model that allows the development of a virtuous circle of evaluation and continuous improvement of curricular planning.

Keywords: - competencies; curriculum planning; consistency; discharge profile; Curriculum; evaluation system

INTRODUCTION

The Bologna agreement signed by the European Union led to great transformations in the training processes of future professionals. One of these was that the university curriculum presents competencies to develop for the exercise of a certain career [18]. According to the Tuning Project for Latin America [45], competencies are classified by their basic, transversal or specific nature. Basic skills allow people to function as individuals who are part of society and support the development of more complex skills of analysis, synthesis, understanding and action, thanks to the cognitive skills of information processing, argumentation and interpretation [44] accompanied by of central aspects.

Transversal, generic or soft skills are common to different professions, and increase performance expertise, employability, management and productivity in different work environments [8,14, 19,26,44]. The specific competencies are those specific to each profession, and establish the performance expected in each of the professional disciplines, which promote specialization, thanks to the development of specific training processes [2, 20, 39,44].

Another transformation was the management of curricular planning so that all the elements of the curriculum (profiles, objectives, competencies, contents, didactic strategies and evaluation strategies) converge harmoniously and, thus, achieve the graduation profile [11,38]. The design of a curricular planning by competencies must start by identifying the challenges and needs of each profession, this with the aim of contributing to the solution of the latent problems that society faces, for which the competencies to be trained for a suitable performance. All this with the aim of guaranteeing the articulation between the training proposal and the set of demands on the profession [6].

Based on the above, curricular planning is defined in a competency-based approach as the design process of each of the central components of the curriculum, taking into account the educational model of the university, which defines the fundamental orientations of training, as well as the environment of the profession, its demands and development trends. From this perspective, a Curriculum Planning Model for Competencies - hereinafter MPCC - becomes the reference for the construction, organization and readjustment of the competency-based training curriculum, which contains the description of the stages and processes that guarantee consistency, coherence, relevance and gradualness of the training process, likewise, it articulates the macro, meso and micro stages of curricular planning where the structure of each of its components is taken into account [3,24,25,41,50].

The fundamental elements of the MPCC are the graduate profile, the study plan and the evaluation system. The graduation profile is made up of the set of generic and specific competencies for performance in a certain profession, identified after

an adequate recognition of the demands of the context and professional work, having as a reference the doctrinal theoretical framework of the university and the environment. changing and complex [31,51-71], it is implemented through a properly structured study plan and a consistent evaluation system, both characterized by graduality and sequentiality.

The study plan is the expression of the training proposal of a career, the curricular management instrument that organizes the training proposal based on the generic and specific competencies recorded in the graduate profile, denoting the structure of the training proposal. This study plan has to be contrasted for its validation in practice, which is why it must be permanently followed, monitored and evaluated, since it seeks to verify to what extent it achieves the educational objectives for which it was designed, which, to In turn, they are consigned in the graduation profile. This is how curricular planning can be seen as a permanent exercise of research - action, which nourishes and feeds back educational theories and approaches in praxis.

The competency evaluation system is defined as the set of quality criteria for learning, guidelines and procedures that govern the evaluation of the competencies of the career graduation profile; therefore, it must start from an in-depth analysis of each of the competencies to be achieved. This analysis must have as a reference framework the curricular or learning map and the training route, that is, the dosage of the development of the competence over time, for its evaluation.

The MPCC must guarantee, for the viability of its implementation, the consistency between these three elements, in order to ensure an effective development of the competencies, since these must be sequential and gradual for a progressive advance in the complexity of the performances. . The consistency of the graduation profile is demonstrated in the harmony that exists between the doctrinal theoretical framework and the competencies of the profile, and between these and the training route; For its proper development, the graduate profile must have a study plan that has been structured according to the identified competencies, and an evaluation system that verifies the achievement of these [43,44]

MATERIAL AND METHOD

This research is descriptive; it characterizes how the analyzed object is presented in reality, in order to establish its behavior and the interrelationships it generates [35]. This type of investigation requires developing the description of the facts through a detailed record of these, in order to later analyze and interpret them properly. The approach was qualitative, generating an analysis of an inductive and deductive nature by collecting data from reality in order to understand how a certain fact behaves, exploring the particularities without reaching generalizations, establishing connections between the categories found and the processes of the which are part [13,22,27].

[30] tell us , making use of techniques such as the analysis of official documents, the interview and the focus group [17]. The information collected with the selected actors and with the analyzed documents of curricular planning by competencies were related to each other generating categories, the same ones that represent the most relevant findings found.

For the collection and processing of information from secondary sources, the documentary analysis of proposals from the universities themselves or from curriculum specialists was considered; For the collection of primary information sources, five experts in university curriculum were interviewed and a focus group was carried out with five university teachers. These experts and teachers had experience in university higher education and in curriculum planning in a competency-based approach.

RESULTS AND DISCUSSION

As a result, it was obtained that the MPCC allowed to evaluate and determine the strengths and weaknesses of the priority elements of the university curriculum: the graduation profile, the study plan and the evaluation system. The most salient aspects, collected with respect to the MPCC, are the following:

Table 1 Characterization of the MPCC

Documentary analysis of curricular proposals	Curriculum Experts	University teachers
The terminology used is different between each analyzed curricular planning model, observing important differentiating aspects, such as the curricular construction-deconstruction-reconstruction; although, coincidences prevail. The MPCC should aim at the development of a systemic curriculum (highlighting the importance of identifying learning outcomes) and a complex curriculum (highlighting the need to address environmental issues in order to learn by doing).	It is required to reflect on the effects of its application. The MPCC must be comprehensive and coherent, interrelating all the elements in a harmonious way. The MPCC must overcome the weak articulation of the university with effective knowledge networks and its disconnection with the environment; It must not be reductionist, it must value the integral formation of the person, giving priority to the balance in the development of the different types of knowledge and not only of the know-how.	We must not fail to consider the gaps and weaknesses that arise from ignorance on the subject and the lack of an adequate theoretical definition. The MPCC continues to face questions due to its origin in the workplace, without understanding the substantial changes it proposes regarding learning, having to overcome the inadequate curricular treatment and developing tools and strategies for a clear path on the subject. The MPCC must be constantly contrasted with reality, in order to respond to current challenges.

Taking into account these characteristics of the MPCC, three curricular plans of universities in Lima were evaluated. It was found that there is no single or clear route for curriculum construction and that the determination of the key aspects of the curriculum does not take into account, for example, the uncertainty of the professional environment, the virtualization of knowledge and the globalization of the labor market, being a challenge to address this complexity from the curriculum [4,23,31,38]. There are still theoretical limitations and the absence of sufficient terminological, methodological and evaluation boundaries [14,23,24,47,49,50], as well as an inadequate curricular treatment in the application of the competency-based approach [3,12,24,29,32,34,41], to which are added conceptions, criticisms and resistance from teachers [16,21,28,36,48].

It was evidenced that to build an MPCC, various curricular proposals can be taken as a reference, elaborated by national and international universities, in order to have a valid and coherent structure of curricular planning that starts from the analysis of antecedents and evidence. In this regard, some authors agree that a competency-based model is required that distances itself from traditional and academic training processes and that makes use of strategic axes such as innovation, research and interdisciplinarity, integrating and harmoniously interacting with the fundamental elements of the act. educational, since the MPCC must be structured in a system that guarantees the effectiveness of training, not only in terms of process, but also of result [1,9,37,40,42].

Table 2 Characterization of the discharge profile

Documentary analysis of curricular proposals	Curriculum Experts	University teachers
In the graduation profile, among the similar elements of curricular proposals of international universities, aspects such as the identification of beginning, intermediate and terminal competences with their respective achievement indicators stand out; as well as the construction of consistency matrices. The graduate profile proposals of the national universities are extremely dense, they do not start from the analysis of the context and the institutional and legal environment and the competencies are not adequately defined.	The management of the graduate profile is deficient, which is aggravated by the inadequate preparation of the curricula. There is disarticulation between the graduation profile and the study plan due to the fact that the curricular planning route is not clear. It must start from the occupational analysis, which makes use of methodologies such as the DACUM or the AMOD, taking into consideration the transversal, multidimensional and global problems. It is necessary to think about graduation profiles that give way to the design of the curriculum in a modular way, based on professional competencies.	It is necessary to start from a contextual analysis, in order to strengthen the coherence between the competencies of the graduate profile, the demands and the current problems of the profession, complementing it with the occupational analysis of each profession in such a way that, from the training process, respond to the demands of each occupational field. It must be clearly determined how we are going to achieve the competencies foreseen in the graduate profile and establish the learning trajectory in a pertinent and contextualized manner, valuing the integral development of the student.

Table 3 Characterization of the study plan

Documentary analysis of curricular proposals	Curriculum Experts	University teachers
- Among the similar elements of the international study plan proposals, the definitive flowchart, the horizontal sequence matrix, the milestones for the progressive achievement of the graduate profile, and the competence- learning-semester-year relation matrix stand out. Such elements are essential to provide the curriculum with consistency, gradualness and coherence. - The curricula of the national universities affect the identification of areas and subjects (curriculum mesh), evidencing the absence of the identification of context problems as triggers of learning, the identification of initial, intermediate and terminal competences with their respective indicators, a competency consistency matrix, among others.	- For the construction of the study plan, an adequate curricular management is required that materializes in a coherent curricular map, which rethinks the teaching planning, the learning experiences with results based on performance. - It must be ensured that students are able to demonstrate their abilities from the combination of knowledge, abilities and skills under the guidance of the curricular map, constituting a matrix of articulation and alignment between the educational aspirations of the university and the program (macro and meso curricular planning) and what happens in the classroom (micro curricular planning).	- For greater coherence between the graduation profile, curriculum map and teaching strategies, the participatory and collaborative work of teachers is important. - The curricular map is an instrument that expresses how competencies are going to be developed over time and, in this sense, the way in which each subject contributes, considering the learning results and the way in which they are going to be evaluated. - The curricular map allows us to identify the level of curricular competence for each cycle or learning module. - The didactic strategies of the study plan must be organized in a didactic model that becomes the articulator of the curricular proposals.

The aspects revealed in Tables 2 and 3 were taken into account in the evaluation of three curricular proposals, articulated in a MPCC, as already mentioned. It was found that both the graduate profiles and the study plans lacked internal consistency. Regarding the graduation profile, it was found that in no case was the analysis of demands and trends of the

profession carried out; In the case of the study plan, the curricular mapping had not been developed, finding that there was not, for example, an internal consistency matrix, which articulates the learning results to the subjects.

These results contravene what was pointed out by some authors, insofar as, as a previous step to the establishment of the graduate profile, the theoretical foundations must be determined, also arguing that contextualization is required to guarantee the relevance of the proposal, existing the need to unify criteria around competencies since difficulties are observed between the design of the graduate profile and the training processes, revealing that what is sought is comprehensive training and the practical application of knowledge, considering that the development of competencies must be in accordance with current demands [5,7,33,46].

Table 4 Characterization of the evaluation system

Documentary analysis of curricular proposals	Curriculum Experts	University teachers
- In the proposals for evaluation systems of national universities, the absence of aspects that guarantee internal consistency and sequentiality stands out, which are present in the proposals of universities from other countries. - Other elements such as the matrix of initial, intermediate and terminal competencies with their indicators, the consistency matrix of competencies are not developed; the definitive flow diagram of learning, the matrix of horizontal sequences and the milestones for the progressive achievement of the graduation profile.	- The evaluation system has a formative purpose, since it seeks to generate self-regulation, metacognition and information for individual and collaborative decision-making. - It is necessary to install mechanisms for the development and evaluation of specific and generic competencies of the graduate profile to evaluate learning results, going from the simplest to the most complex, based on the exhaustive analysis that has been previously done of the competency. - It is necessary to clearly establish the expected levels of achievement and the connection between the competencies, the learning results, the performance and the evaluation criteria, translated into tangible products with which the performance of the students can be evaluated.	- To guarantee coherence between the graduation profile, the curricular map, the training route and the evaluation, it is necessary to start from a detailed analysis of the competence and the required learning achievements, for this, the context must be known in the understanding of that, if I establish the knowledge to be achieved well, within the framework of the demands of the context, these can be evaluated through the evidence of action, providing the corresponding feedback, which ensures the development of the competencies to be achieved. - For an adequate evaluation, the constructive alignment between the different levels and elements of curricular planning is required with the necessary triangulation between the learning result, how it was evaluated and, finally, how it was taught.

Based on the characteristics mentioned in Table 4 and thanks to the evaluation carried out, it was possible to determine that the evaluation system had not been built in the revised curricular proposals, it was mentioned in one case, but it was not developed, which in the practice means that the necessary elements are not available to verify the level of development of the competences achieved by the students.

No consistency was found between the graduation profile, the study plan and the evaluation system. This contrasts with what was pointed out by some authors who identified the importance of curricular planning guaranteeing a solid relationship between the graduation profile and the curricular organization, the pedagogical and cognitive processes in the development of the execution of the curricular design, the evaluation of the performance, and an evaluation system, which allows the development of teaching-learning processes endowed with sufficient coherence and significance [30,43]. Coincidences were produced with authors who point out that serious difficulties still persist in the curricular treatment within the framework of a competency-based approach, which originates the disarticulation between the substantial elements of the vocational training curriculum [3,24,41,50]; subsisting theoretical limitations and the absence of sufficient terminological, methodological and evaluation boundaries [10,23,24,47,50] to which are added conceptions, criticisms and resistance from teachers [3,15,16,28,29,34,36,41,48].

CONCLUSIONS
The MPCC, by serving as a benchmark for the evaluation of curricular proposals, makes it possible to identify inconsistencies in the graduate profile, the study plan, and the evaluation system. It was found that these key elements of the curriculum in a competency-based approach still face limitations in their implementation, because they do not have the theoretical and methodological criteria necessary for their development. Therefore, in practice it is implemented without the necessary reflection, without real change regarding what is teaching, what is learning and what is evaluating. Therefore, it was confirmed that it is necessary to clarify the curricular, didactic, methodological and evaluative implications of the implementation of the competency-based approach with the implementation of a MPCC that serves as a reference.

The concatenation of elements provided by the MPCC reduces the risks of inconsistencies and inconsistencies between the different elements, allowing the common thread of what is proposed at the macro, meso and micro curricular level not to be lost, but rather, by Otherwise, it looks enriched. In summary, we can affirm that the MPCC makes it possible to overcome the weaknesses of not having a structured and coherent proposal for curricular planning by competencies, which promotes the quality assurance of the training proposals through the continuous evaluation of the competencies of the graduate profile. of students to ensure their achievement.

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