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Scientific articles

Análisis de las fortalezas y debilidades de la gestión educativa actual para proponer oportunamente un modelo educativo metamórfico

Analysis of the strengths and weaknesses of current educational management to opportunely propose a metamorphic educational model

Análise dos pontos fortes e fracos da gestão educacional atual para propor oportunamente um modelo educacional metamórfico

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Resumen

Este trabajo tiene como objetivo proponer un modelo educativo para las Instituciones de Educación Superior (IES) que responda de mejor manera a la realidad y contexto actual caracterizado por la transformación tecnológica. Mediante la revisión de investigaciones previas relacionadas con la Educación Superior (ES) se buscó identificar posibles fortalezas, debilidades, oportunidades y amenazas de los sistemas de educación superior que tuvieran impacto en los modelos educativos; por consiguiente se construyó un cuestionario basado en esa información, dicho instrumento consta de 40 ítems y se difundió de manera electrónica;

con base en las respuestas de 31 académicos se construyó una matriz FODA y se muestra el panorama actual de los sistemas de educación superior que a la postre afectan los modelos educativos.

El análisis elaborado muestra la necesidad de fortalecer la gestión del conocimiento, aumentar los programas curriculares enfocados a acrecentar valores y responsabilidad social, aprovechar el entorno, diversificar recursos, entre otros. Dentro de los rasgos representativos de la propuesta se rescata la gestión de redes y el financiamiento diversificado, así como considerar el papel de los docentes tanto en el proceso de enseñanza y aprendizaje como en la gestión de las universidades. Como resultado, se plantea un modelo educativo que contemple: 1. Un modelo académico flexible; centrado en el aprendizaje para toda la vida e integral; y, 2. Un modelo administrativo caracterizado por formas de gestión del conocimiento, con formas de trabajo colaborativas principalmente en redes; que responda a las demandas sociales y a las propias necesidades internas.

Palabras clave: Flexibilidad, gestión del conocimiento, gestión en redes, responsabilidad social.

Abstract

The objective of this work is to propose an educational model for Higher Education Institutions (HEIs) that best responds to the reality and current context characterized by technological transformation. Through the review of previous research related to Higher Education (HE), we sought to identify possible strengths, weaknesses, opportunities and threats of higher education systems that had an impact on educational models; therefore, a questionnaire was built based on that information, said instrument consists of 40 items and was disseminated electronically; Based on the responses of 31 academics, a SWOT matrix was built and the current panorama of higher education systems that ultimately affect educational models is shown.

The elaborated analysis shows the need to strengthen knowledge management, increase curricular programs focused on increasing values and social responsibility, take advantage of the environment, diversify resources, among others. Within the representative features of the proposal, network management and diversified financing are rescued, as well as considering the role of teachers both in the teaching and learning process and in the management of universities. As a result, an educational model is proposed that includes: 1.

A flexible academic model; focused on lifelong and comprehensive learning; and, 2. An administrative model characterized by forms of knowledge management, with collaborative forms of work mainly in networks; that responds to social demands and their own internal needs.

Keywords: Flexibility, knowledge management, network management, social responsibility.

Resumo

Este trabalho tem como objetivo propor um modelo educacional para Instituições de Ensino Superior (IES) que melhor responda à realidade e contexto atuais caracterizados pela transformação tecnológica. Ao rever pesquisas anteriores relacionadas com o Ensino Superior (ES), procurámos identificar possíveis pontos fortes, fracos, oportunidades e ameaças dos sistemas de ensino superior que tiveram impacto nos modelos educativos; Para tanto, foi construído um questionário com base nessas informações. Esse instrumento é composto por 40 itens e foi divulgado eletronicamente; Com base nas respostas de 31 acadêmicos, foi construída uma matriz SWOT e mostrado o panorama atual dos sistemas de ensino superior que, em última instância, afetam os modelos educacionais.

A análise elaborada mostra a necessidade de reforçar a gestão do conhecimento, aumentar programas curriculares focados no aumento de valores e na responsabilidade social, aproveitar o ambiente, diversificar recursos, entre outros. Entre as características representativas da proposta estão a gestão de redes e o financiamento diversificado, além de considerar o papel dos professores tanto no processo de ensino e aprendizagem como na gestão das universidades. Como resultado, propõe-se um modelo educacional que inclui: 1. Um modelo acadêmico flexível; centrado na aprendizagem abrangente e ao longo da vida; e, 2. Um modelo administrativo caracterizado por formas de gestão do conhecimento, com formas colaborativas de trabalho principalmente em redes; que responde às demandas sociais e às próprias necessidades internas.

Palavras-chave: Flexibilidade, gestão do conhecimento, gestão de redes, responsabilidade social.

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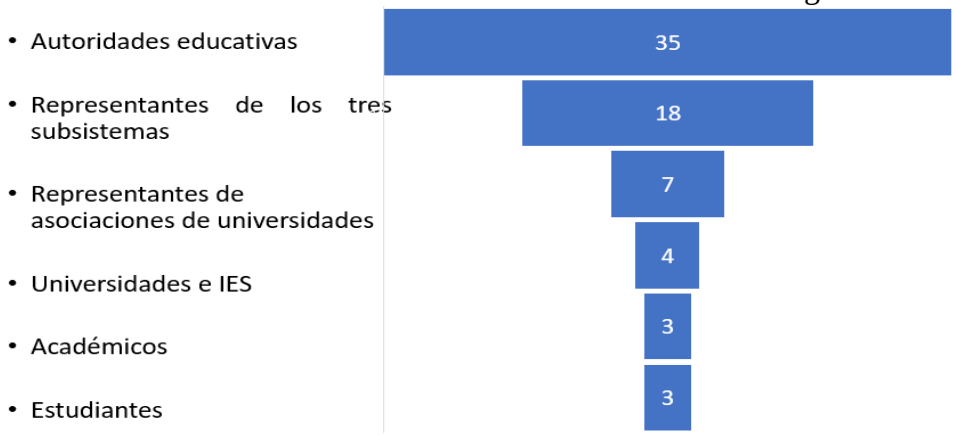
Introduction

The most transcendental changes in the Higher Education System in Mexico are generated mostly by the central authorities of the system and not by the academic actors that are part of the educational institutions, which can cause little effectiveness in identifying real needs. that occur in the field of higher education. Technological civilization depends on teaching systems, success is based on these systems being sophisticated and understanding education as the engine that drives adaptation processes; However, these systems are not generated per se, while managers, academics, students and society in general need to learn critically and put into practice better educational models that allow them to respond optimally to the social demands of justice, sufficiency, equity, effectiveness, efficiency and co-responsibility specific to the national context (Gracián, 2021) . The objective of this article is to propose the structure of an educational model suitable for the new and challenging demands suffered by the Mexican context with a vision of potentialization.

In that sense and as evidence of the heterogeneity and complexity of the Mexican educational system, we observe that the level of higher education offers training at the levels of: Higher University Technician, Bachelor's Degrees, Specialties, Master's Degrees and Doctorates. The institutions that make up the higher education system are grouped as follows: Federal Public Universities, State Public Universities, State Public Universities with Solidarity Support, Technological Institutes, Technological Universities, Polytechnic Universities , Intercultural Universities , Public Research Centers , Schools Public Normal Schools and the current Benito Juárez Universities (Official Gazette of the Federation, 2020)

Based on the above, we can say that management, coordination, and communication capacity is required, however, a greater capacity of the government's administrative apparatus is observed to influence the HEIs, giving them less space and decision. For example, in the current General Education Law it is considered that the National Council will be in charge of developing objectives, policies, strategies, lines of action and global goals in education, however, the structure of said Council is established as shown in Figure 1, and allows us to infer vertical governance by observing a high representation of the administrative apparatus, of 70 people that make up the council, 50% of its members are federal educational authorities, 26% representatives of the subsystems: university, technological and normal (teacher training); 10% representatives of university associations; 6% representatives of universities and HEIs; 4% academics and 4% students.

Figure 1. Structure of the National Council for the Coordination of Higher Education



Source: Own elaboration with data from the General Education Law, 2019

It can be observed that the changes in the Higher Education System represent the agreement between more political than academic actors, therefore it is suggested that these changes face the problem of effective implementation, consequently, we propose to go to the heart of the matter, a educational model that pushes a change from the HEIs towards the system, that emphasizes the recovery of Mexican wealth and talent and that understands and responds to the context, not that represents greater control and the establishment of rules of the game from the centralized administration.

The educational model reflects the institutional reality and serves as a reference and ideal for institutional change and/or improvement. It is based on the philosophy, vocation and history of the HEIs or universities, in such a way that the educational model encompasses the institutional purposes and goals, the vision of the future and the values. Its structure includes the administrative model that entails the organizational distribution and the academic model that in turn is formed by the curriculum and study plans, in addition to the entry profile and the graduate profile (Ceron, 2020) .

As Cuadrado (2020), Gregorutti (2014) and Morales and Fernández (2023) point out , there are factors and phenomena related to higher education, and it is considered that they have strong implications for the educational models of HEIs. For example, the following are identified: a) Many of the managers enter their positions without having prior training in educational management; b) The structural model of the HEIs obeys a machine bureaucracy, and a hierarchical-bureaucratic culture is still maintained; c) The institutionalization of knowledge networks is little in HEIs; and d) Educational quality processes are supported by evaluations based on external quality assurance (Cuadrado, 2020; Gregorutti, 2014; Morales and Fernández, 2023; Marúm et al., 2012; Sánchez & López, 2013; Núñez & Sent (2023) ;

Therefore, it is considered pertinent to carry out a more detailed review of the literature with the objective of rescuing internal and external factors associated with HEIs; that other researchers have detected. These factors were classified as strengths, opportunities, weaknesses and threats, which are described below:

- The strengths represent virtues or internal capacities of the HEIs, among these we find: academic autonomy (Altmann & Ebersberger, 2012) , the function of awakening social participation (Marcovitch, 2002) , the recognition of the third mission that relates it to its immediate environment (Altmann & Ebersberger, 2012) , the existence of curricular programs of Civic Education, Human Rights Education, Education for Sustainable Development (Marco, 2002) , the culture and philosophy of service, linked to the trajectory of the people (Sánchez & López, 2013) , the culture of accountability towards access to information and transparency (Núñez & Sent, 2023) , research, production and public dissemination of knowledge (Vallaeys, 2019) , teachers who They carry out university extension (Marcovitch, 2002) , members of HEIs with knowledge and understanding of collegiate models (Yokoyama, 2006) .
- Opportunities are external factors that the organization can use to its advantage, among which are: the relevance of the role of the SE in the social and economic development of the country (Olaskoaga-Larrauri et al., 2013) , technological change where They need new careers with inter and multidisciplinary approaches (Marúm et al., 2012) , finances with a gender perspective (Marúm, 2013) , promotion of university networks in knowledge management (Ojeda, 2013) , promotion of education for life, emphasizing the continuous education of graduates (Marco, 2002) , political and social influence of university associations (Izquierdo, 2009) , new forms of management with a gender perspective (Marum, 2012) , increased culture of entrepreneurship, strengthening the connection and innovation of universities and society, promoting the exchange of knowledge and the development of innovation (Izquierdo, 2009) .
- Weaknesses are deficiencies or internal factors that limit HEIs to successfully face changes, among others we detect: the increase in the number of students (Altmann & Ebersberger, 2012) , the coexistence of all areas of knowledge and whose structure ends up fragmenting the coexistence of multiple expressions of knowledge (Marcovitch, 2002) , the machine-professional bureaucracy (Olaskoaga-Larrauri et al., 2019) , the majority of managers access their positions without having prior

training for educational management (Álvarez & Casas, 2008) , excessive control and regulation, excessive workload for teachers in filling out forms, etc. (Núñez & Senti, 2023) , little institutionalization of knowledge networks (Izquierdo, 2009) , teaching performance measured quantitatively, motivated mainly by compliance with established standards (Marcovitch, 2002) , centralized management, power is in the central administration (Yokoyama, 2006) .

- Threats are external factors that can potentially and negatively affect the organization, with regard to the educational model, new trends in public administration focused on accountability (Olaskoaga-Larrauri et al., 2013) , bureaucratization are established. increasing and heaviness of the procedures in the administrative apparatus of the HEIs for compliance with the demands imposed by external organizations (Neave, 1998) ; the implementation of *new public management* that makes university administrative models more complex (Rosario et al., 2010) , the loss of academic autonomy as an impact of external quality assurance (Olaskoaga-Larrauri et al., 2013) , uncertainty in regulations on the recruitment, stabilization and promotion of teachers (Altbach et al., 2010) , uncertainty around the implications of policies (Rosario et al., 2010) , and the impact of changes in funding (Tünnermann, 2011) .

Materials and methods

Once the strengths, weaknesses, threats and opportunities were defined, a questionnaire was constructed with 40 items; whose purpose was to substantiate and detect how much academics, administrators and managers consider the strengths, weaknesses, opportunities and threats identified in the educational model of the HEIs to be influential. The response scale established in the questionnaire corresponds to a Likert scale where 1= Totally disagree, 2= Disagree, 3= Neither agree nor disagree, 4= Somewhat agree, 5= Strongly agree. This instrument was sent electronically and we obtained a total of 31 responses (18 graduate students, 11 teachers and 2 Higher Education managers).

Based on the responses obtained, an average is made to grant a grade per item and classification. Once the averages are obtained, a SWOT diamond is constructed, that is, a scale that reflects the state of the educational model. By obtaining this balance, it is possible to graphically show the position in which the educational model is perceived, according to the respondents regarding four possible scenarios.

- Scenario A. Good, where Strengths – Opportunities are high;

- Scenario B. Regular, where strengths are high and threats are low;
- Scenario C. Bad, where weaknesses are low and opportunities are high;
- Scenario D. Very Bad, in which weaknesses and threats are low.

Results

Among the results obtained from the SWOT analysis we find the following. Table 1 shows the items [1]that we built and correspond to the strengths rescued in the literature review. The average score obtained per item is shown. Once the averages are obtained, they are weighted with a value of 10 each. and are accumulated to obtain the weighted total. Items 1 and 5 may seem similar since they respond to academic autonomy (Altmann & Ebersberger, 2012), however, we find the difference in that (1) responds to the freedom to create teaching and research programs, while item (5) corresponds to the freedom to generate the legal instruments that allow the institution to govern itself in accordance with the rules that it itself determines and to choose its authorities and forms of organization. Items 3 and 8 arise from the recognition of the third mission that relates it to its immediate environment (Altmann & Ebersberger, 2012), they differ in that (3) establishes the formal procedures for the linking, extension and dissemination of knowledge. , while (8) deals with the relationship between production and impact on the environment. Points 2 and 9 obey the function of awakening social participation (Marcovitch, 2002), and they differ in that (2) focuses on students and (9) on teachers.

[1] These items represent a structure that summarizes and responds to the bibliographic review. Since it is a SWOT analysis, they are presented as statements, however, the questionnaire was translated into question format to be more assertive.

Table 1. Results of the average rating of the items classified as strengths

Strengths	Average rating
1. It has sufficient academic autonomy to organize its academic apparatus	8
2. Contributes to the social participation of its students	7
3. Optimally fulfills the linking, extension and dissemination of knowledge	7
4. The existing curricular programs are sufficient to promote social, political and environmental values in students.	5
5. It has sufficient organizational autonomy to organize its administrative apparatus	8
6. The culture and philosophy of service together with the academic career of the people generates management with visibility and recognition	8
7. Promotes within it a culture of accountability towards access to information and transparency	7
8. Research, production and public dissemination of knowledge from HEIs is sufficient to generate scientific and technological changes in the environment	7
9. IES professors successfully carry out university social outreach	7
10. The academics who make up the HEIs have extensive knowledge and understanding of how collegiate models are formed	7
Weighted total	710

Source: Own elaboration based on results of applied questionnaires

Table 2 shows the items that correspond to opportunities, the average rating and the weighted total. In this case, items 2, 4, 5 are due to technological change where new careers with inter and multidisciplinary approaches are needed (Marúm et al., 2012) . We observe it from the perspective of the influence of technological change on: (2) educational models, (4) new careers, (5) management models. Items 3 and 5 are classified according to gender perspective (Marúm, 2013) , and they differentiate (3) finances and (5) management as work organization.

Table 2. Results of the average rating of the items classified as opportunities

Opportunities	Average rating
11. The relevant role that HEIs have in the social and economic development of the country	8
12. The context of technological change fosters changes in the educational models of HEIs	8
13. The development of public finances with a gender perspective can be adopted by HEIs	8
14. The context of technological change for the creation of new careers with multi and interdisciplinary approaches	9
15. The context of technological change fosters changes in the management models of HEIs	8
16. The current knowledge society encourages the formation of networks in HEIs to manage knowledge	9
17. The development of new forms of management with a gender perspective could lead to changes in the management of HEIs	8
18. The promotion of education for life by generating continuing education programs for its graduates	9
19. Promoting the culture of entrepreneurship by generating programs that contribute to the training of young entrepreneurs	9
20. The generation of new spaces or university organizations for the generation of institutional learning	8
Weighted total	860

Source: Own elaboration based on results of applied questionnaires

Table 3. Results of the average rating of the items classified as weaknesses

Weaknesses	Average rating
21. Gaps in academics' views regarding accreditation, depending on their degree of participation in the process	8
22. The continuous increase in students entering HEIs in relation to the financial resources that HEIs have represents a limitation for their management and performance.	9
23. The increase in the substantial functions of HEIs (teaching, research and outreach/dissemination) has affected the performance of these	7
24. The type of coexistence of the areas of knowledge in HEIs fragments the multiple expressions of knowledge	7
25. The rules and procedures in HEIs restrict the initiative of academics and students	8
26. Most of the directors in the HEIs access their positions without having prior training for educational management	8
27. Control and administrative procedures, such as forms, files, lists, etc., generate an excessive workload for teachers.	8
28. Few networks have been built to generate research, produce and disseminate knowledge	8
29. The evaluation of teaching performance measured mainly quantitatively to meet established standards limiting the implementation of innovations in the classroom	8
30. The forms of management in HEIs give greater power in decision-making to the central administration, limiting the participation of academics and students.	8
Weighted total	790

Source: Own elaboration based on results of applied questionnaires

Table 3 shows the items that correspond to the weaknesses, and the average score obtained. Table 4 shows the items that correspond to the threats, and the average rating. Items 1, 3 and 5 that could be perceived as similar respond to (1) new trends in public administration focused on accountability (Olaskoaga-Larrauri et al., 2013) ; (3) increasing bureaucratization and heaviness of procedures in the administrative apparatus of HEIs for compliance with the demands imposed by external organizations (Neave, 1998) ; (5) the loss of academic autonomy as an impact of external quality assurance (Olaskoaga-Larrauri et al., 2013) .

Table 4. Results of the average rating of the items classified as threats

Threats	Average rating
31. Quality assessment policies can cause structural changes in HEIs	8
32. Public administration trends focused on accountability affect the performance of HEIs	7
33. Quality evaluation policies cause greater bureaucratization and heaviness in the procedures of the HEI apparatus	8
34. Growth of management similar to the business approach in the administrative models of HEIs	9
35. Accreditation processes reduce the autonomy of HEIs	7
36. The hiring, promotion and permanence processes for HEI professors cause uncertainty	8
37. The uncertainty surrounding the repercussions of the homologation and/or accreditation policies of institutions or programs without considering the diversity and contexts of the HEIs	8
38. Changes in the forms of public financing of HEIs will represent a negative impact on HEIs	7
39. Accreditation standards could limit innovation at HEIs	8
40. The academic programs at HEIs are aligned with the cultural diversity of their environment*	6
Weighted total	760

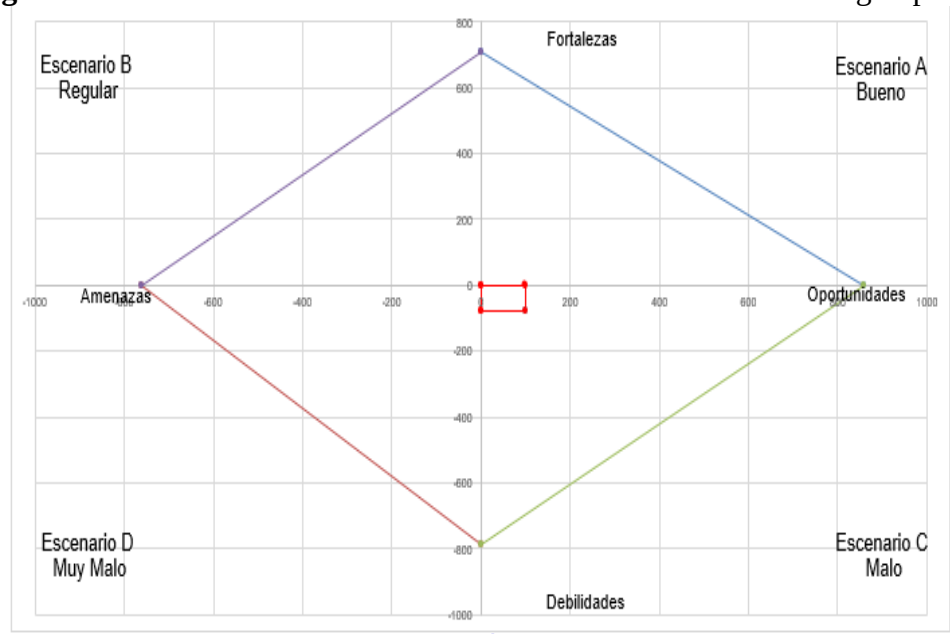
Source: Own elaboration based on results of applied questionnaires

According to the results of the weighted total, an endogenous and exogenous balance is constructed. In the case of the endogenous balance values, the weighted total of the strengths is considered positive (+710) and the weighted value of the weaknesses is considered negative (-790). In relation to the exogenous balance, the weighted value of opportunities (860) is considered positive and the weighted value of threats is considered negative (-760).

A differentiation of the two values of each of the scales is made and the results are expressed in Figure 2, in which we observe that according to the perception of academics, the current educational model is positioned in a bad scenario. Therefore, it is necessary to increase the strengths, that is, the internal aspects of the organization, to move towards a better scenario, that is, to move the diamond on the vertical axis and move to a good scenario, this is the support that leads us to propose a flexible educational model that recognizes its environment, responds and contributes to social participation, which is made up of an

administrative and academic model that is managed in networks, with diversified financing and with a gender perspective.

Figure 2. SWOT diamond of the current educational model according to perception



Source: Prepared using the SWOT matrix developed by Rosa Rojas and Luis Téllez 2013

Discussion

Based on the results obtained in the SWOT analysis that is based on the bibliographic review of the panorama where the educational models are reversed, an educational model is proposed based on the institutional philosophy composed of its values, mission and vision; and characterized by the following elements:

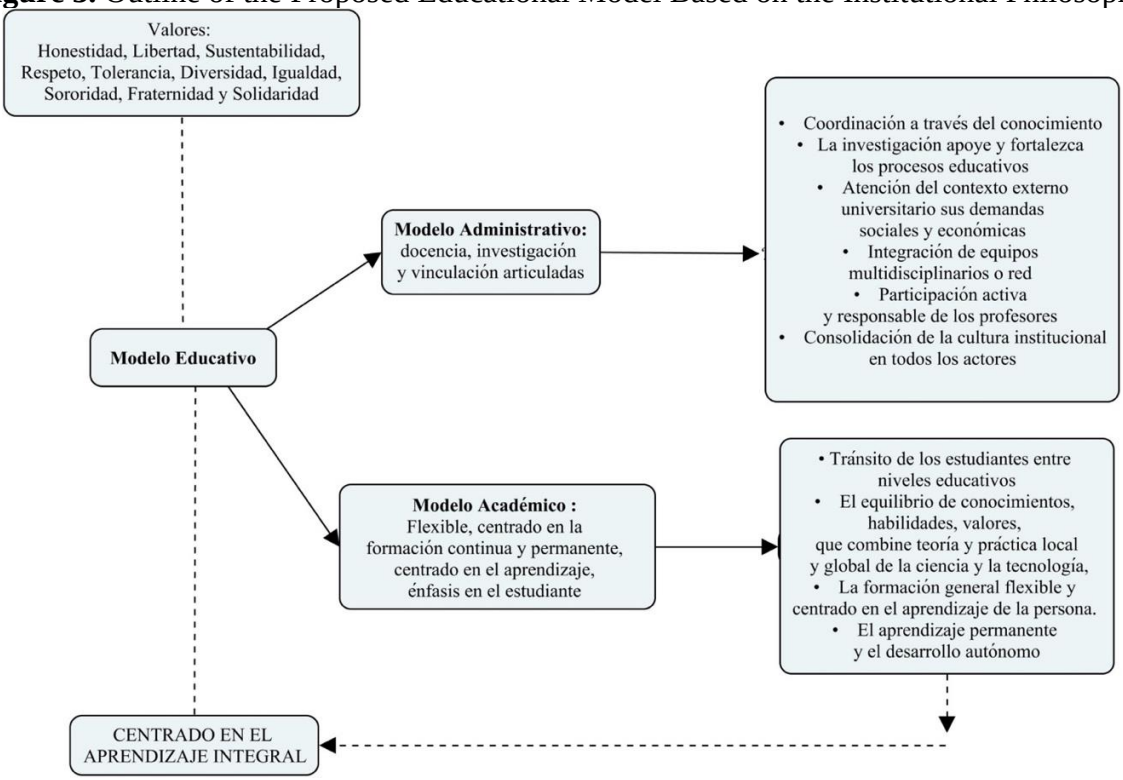
- flexible academic model ; focused on lifelong and comprehensive learning; supported by the values of honesty, freedom, sustainability, respect, tolerance, diversity, equality, sisterhood, fraternity and solidarity , and,
- An administrative model characterized by forms of knowledge management, with collaborative forms of work mainly in networks; that responds in a pertinent manner to social demands and one's own internal needs; supported by respect and recognition of the diversity of sciences and ancestral knowledge that involves a broad worldview and richness of cultures, ideologies and beliefs.

We propose this educational model for an autonomous HEI of a public nature, whose philosophy is established in being a cultural and training institution of people who have decided as a way of life to contribute to the progress of human civilization while respecting

the sustainability of the planet, freedom of religion and chair, the systematization of study experiences, the examination and synthesis of ideas, the preservation and improvement of information and knowledge, as well as the technologies that contain and disseminate it, and the cultivation of one's own identity through the cultures, ideologies and beliefs of otherness.

This institution is part of the global higher education system, linked by information and communication technologies with other teaching systems and knowledge repositories. It promotes human methods and systems of teaching and learning, recognized for diversity, permanent institutional belonging, promoters of science and knowledge of native cultures, a broad worldview and richness of cultures, ideologies and beliefs in an environment of sisterhood and brotherhood. Our community moves between areas and disciplines of knowledge to create innovation and disseminate science and cultures. It is guided by values such as: honesty, freedom, sustainability, respect, tolerance, diversity, equality, sorority, fraternity and solidarity. Figure 3 shows the outline of the proposed educational model.

Figure 3. Outline of the Proposed Educational Model Based on the Institutional Philosophy



Source: Own elaboration

Administrative model

This educational model requires an organizational design, which considers the purposes of university work: teaching, research, dissemination-linkage-extension, as articulated actions, which considers social demands and one's own internal needs. It is considered that the internal causes of current transformation of the organizational designs of universities are found in the development of research and the consolidation of dissemination and linkage; and the external causes are mainly due to new forms of financing, greater pressure on the quality of public services, among others (Solé & Llinàs-Audet, 2010) , these aspects correspond with the results of our SWOT analysis.

Therefore, it is identified that there is a need for a harmonious link between the work of teaching, research, dissemination and linkage that considers:

- The internal university context itself; For example, it is necessary that research supports and strengthens the educational processes involved in the teaching and learning process in favor of improving education; and,
- In the external university context, its social and economic demands, for example, it is necessary that linkage actions be supported by evidence from research and the comprehensive development of human resources in the entrepreneurship of technological and sustainable organizations.

Involving the development of professional management, and above all, knowledge management through strategic processes based on communication systems and the professional development of the actors in the educational system, therefore, it is required:

- Coordination through the knowledge of the employees of the intermediate line - support staff - and those of the operations core - academic plant (Di Paolo, 2023); Therefore, it is necessary to develop and strengthen communication and information systems and the training of professionals (teachers, administrators and managers) in knowledge management.
- Integration of multidisciplinary teams or network of experts, capable of changing their configuration according to the tasks and/or demands of the internal or external university context; favoring innovation, efficiency and relevance of institutional work.

Thus, this proposal promotes the transformation of the university organization structured in a machine bureaucracy to a professional bureaucracy with nuances of an adhocracy, in Mintzberg's terms. The professional bureaucracy functions to the extent that it brings together

a series of professionals who know the methods and tools of their work, that is, the expertise of the teaching staff and the professionalization of those who manage the university support its operation (Marúm et al., 2012) , therefore, one of the essential characteristics of this type of organization lies in the autonomy with which the professional is provided.

This autonomy is accompanied by confidence in the performance of teachers, administrators, technicians and others involved in the university system. So that administrative control (characterized by the excess of forms, reports, indicators, etc.) stops being a means of power of the apex and the middle line against the academic staff, and is transformed into a communication system. articulated between these three levels of the organization; encouraging teachers to dedicate their time to generating, applying and disseminating knowledge and not justifying their actions.

Academic model

In accordance with the results of our analysis, the lesser strength of which is reflected in the curricular programs to promote social, political and environmental values in students (table 1, item 4); and greater opportunity regarding the creation of new careers with a multi and interdisciplinary approach; the formation of networks for knowledge management; the promotion of education for life; and the culture of entrepreneurship (table 2, item 4 and 6, 8 and 9). The academic model of our proposal is characterized by being flexible, focused on continuous and permanent training, focused on learning, emphasis on the student that meets the principles of equity, relevance, relevance, efficiency and effectiveness, which facilitates autonomous learning, in close connection with and for the environment.

The transition of students between educational levels and has multiple spaces of relationship with the environment, according to the interests of the student, there is a common framework based on the seven liberal arts, which endorses the validity of the trivium and quadrivium, maintaining intrinsic ideas of a comprehensive education in which skills are developed to build and transmit knowledge, such as: knowing how to express oneself adequately, problematize, transmit and achieve effective knowledge, reinforce oral and written expression.

Likewise, our proposal considers comprehensive training, socio-emotional development, the development of logical and abstract thinking, what in the medieval university was known as the quadrivium that provided four paths to know the world: music, arithmetic, geometry and astronomy.

We also consider a specialized framework by areas of knowledge that significantly enhances the emphasis on practice in the environment.

The specializing framework that is proposed is for related areas of knowledge, considering the emergence of a multiplicity of theoretically or empirically connected subjects. To achieve this, a strengthening of knowledge management is needed (raised previously) that is the basis of university work. This specializing framework is reinforced and updated by the network or multidisciplinary teams of teachers, where the generation of knowledge and organization is promoted in parallel.

In accordance with the search for continuous and comprehensive training, therefore, education from this proposal is considered as a permanent process of transformation and/or improvement of knowledge, skills, abilities, values, aptitudes of the student necessary for social and economic coexistence. . Therefore, and considering the points raised by Marúm, Bravo and Moreno (2012) regarding the curriculum in educational models, this proposal proposes:

- The balance of knowledge, skills, values, which combines theory and local and global practice of science and technology,
- Flexible general training focused on individual learning.
- Lifelong learning and autonomous development of the student based on the postulates of learning to be, learning to do, learning to undertake, and learning to live with their peers and the natural environment to strengthen the ability to learn throughout life. .

Incorporate teamwork experiences, the development of communication skills with diverse audiences, the development of creativity, problem-solving skills, entrepreneurial spirit and social sensitivity, which fosters the understanding of cultural diversity and the respect for the environment.

Management of the educational model

In accordance with our vision and mission, our institution focuses its management on knowledge management that seeks to transform tacit knowledge into explicit knowledge, from organizational learning, individual knowledge is shared with a group of individuals who are part of the organization, under the consideration that the four dimensions of knowledge management are: generation, storage, transfer and application of knowledge (Tosto, 2023) .

Meanwhile, an organizational structure is proposed that motivates research in networks, that there is an open storage medium, that the transfer processes to the environment are potentiated and accelerated based on three pillars: strengthening scientific and technological capacity (infrastructure and opportunities) ; transfer knowledge for social and economic benefit; realize these frameworks in international cooperation and collaboration.

Organizational Management in Networks

Our management proposal aims to overcome the management difficulties that current universities face when they seek to insert themselves into the dynamics of a society immersed in the knowledge economy, and that demands agile, flexible, horizontal and decentralized organizations and that were identified in our analysis. SWOT as part of the weaknesses and threats. The organizational structure that we consider ideal is a holonic network [2]structure that proposes to divide, group and coordinate daily flows and processes, rather than the tasks or functions that the organization will face.

It is observed that a reticular organization is required that overcomes hierarchies through networking, change from single-person authorities to teams, adhocratic structures instead of specialized ones, and freedom in the flow of information instead of control (Ojeda, 2013) .

Our network structure considers the following features: emphasis on processes, work of peers and teams, sharing of information and knowledge in a clear way and with technologies appropriated by the members, measurement of impacts, decentralization and autonomy of the nodes, and, vision and shared values.

At the level of the areas of knowledge and research, the specialized or adhocracy thematic nodes that are established will respond to decisions about commitments or interests of the organization that are financially and administratively supported with viability and temporality (Ojeda, 2013) .

[2] It is a model studied by Ojeda (2013) inspired by product manufacturing engineering. Holonic systems (Holanic Manufacturing Systems - HMS) are based on a distributed organization of autonomous and intelligent entities called holons that work cooperatively within temporal hierarchies and holarchies, to achieve common and global objectives. A holon is an autonomous and cooperative building block of a manufacturing system to transform, transport, store and/or validate information and physical objectives; an entity with the capacity for reconfiguration, in which properties of holisticity and atomicity are integrated, such as being Whole or Part, Content and Continent, Subordinating and Subordinate, Controller and Controlled, in dynamic balance with the environment through the balancing of: autonomy, cooperation, evolutionary mechanisms of integration, assertiveness and self-affirmation (Ojeda, 2013).

The above will allow universities to "be more competent and entrepreneurial, evolve, change and grow, and better fulfill their mission" (Ojeda, 2013, p. 194) . These organizational network structures have sediments of different organizational forms: hypertrefoil and hypertext [3], such a conjunction is defined as hypernetwork, where the main functional characteristics will be flexibility and an organizational learning system. Likewise, the information and communication technologies (ICT) available to organizations today make it possible for the network organizational structure to be combined with the cloverleaf structure, thereby creating a virtual organization that considers the use of ICT as the central axis of the organization. productive process (Ojeda, 2013) .

The virtual organization is fundamental for the work of the university community in linkage activities, research, participation in national and international projects, virtual academic exchange and virtual student mobility. This will allow areas of knowledge to be developed on specific topics and cognitive capacity to be acquired for a specific project or for a particular curricular content, which allows organizations to be competitive.

At the administrative level, holons that provide resources or manage processes could function for the purpose of the entire network, providing each holon with what it requires without having to replicate the process in another holon. These roles assumed by the holons are divided into: operational, support or management of processes, provision of resources and as an integrator (Ojeda, 2013, p. 194).

The holons in our proposal, taken to the level of curricular design, would allow expiration to be overcome and be relevant, the nodes could be those bodies of teachers who update their knowledge and reticularly contribute new knowledge to the curriculum with agility.

This proposal in summary advances with the advantages of adhocracy, reaps the advantages of networking, stimulates and enables curricular validity, allows the assurance of capabilities for any project and establishes the organizational form for entrepreneurship from the institution without faculty schemes. departments, divisions or collegiate bodies.

[3] The Hypertext structure is proposed by Nonaka and Takeuchi (1995) and combines bureaucratic and adhocratic structures and enhances their positive elements while eliminating the disadvantages, while being very valid for organizations whose vocation is the creation and management of knowledge (Ojeda , 2013 pp. The Hypertrefoil structure is the combination of the cloverleaf structure and the Hypertext structure, adapting the business system layer of the hypertext structure, which is the most rigid (bureaucratic) with the cloverleaf structure, proposed by Charles Handy in 1989 that shaped like a four-leaf clover with stem representing top management, it maintains the core of permanent workers (leaf 1), outsourcing (leaf 2), flexible workforce (leaf 3) and customer-self-service work (sheet 4), (Ojeda, 2013 pp.186-189).

The role of teachers

In particular , the relevance of the role of university professors is undeniable as teaching and research falls to them and even, in many cases, they propose, plan and implement dissemination and linkage actions. However, these demands of their new teaching work imply possessing and developing skills in teaching, research, entrepreneurship, collaborative work, innovation and others; where their learning cannot be carried out part-time and requires long periods of time that must also be organized (Solé and Llinàs-Audet, 2010).

Combined with the above with the current situation that subject teachers represent approximately 70% of the university academic staff in Mexico, being a new reality in the composition and university life (Acosta, 2018) , the recognition of hours for development is proposed. professional or investigative of the subject teachers within their allocation of hours in the contract, in order to:

- Increase the participation and responsibility of subject teachers in multidisciplinary teams or networks; by recognizing such participation as part of their professional development.
- Consolidate the institutional culture in all actors (not excluding subject teachers) through the creation of professional development spaces that integrate the values of the institution.

A budget vision

The Network management model ensures universities have flexible, agile and resilient management in the context of the information and knowledge society and successfully inserts it into research and development processes and global innovation systems.

This characteristic of its organizational structure must be accompanied by a vision of an Entrepreneurial University that takes into account the integral strategic importance of knowledge in the process of global competitiveness, and the use of networks as an effective mechanism to promote articulation between academia, and companies, governments and R&D centers, in two special functions: the ability to articulate relationships; and the ability to raise funds of diversified origin (Ojeda, 2013, p. 194) .

This vision, furthermore, is fundamental in the context of decreasing public budgets and for ensuring the autonomy that a network organization must possess. In the Mexican sphere, the new General Law of Higher Education approved in April 2021 by the legislative

congress introduced changes of a structural and budgetary nature, touching the dimension of the income of Mexican HEIs.

The law creates a new title on the financing of higher education, with a single chapter made up of 6 articles, the *crux* on own income was integrated into article 67 sections IX and explicit for this type of economic income, and actors, adding the participation of the Secretariat of Public Education (SEP) to the dynamics of collecting these incomes (DECREE by which the General Law of Higher Education is issued and the Law for the Coordination of Higher Education, 2021)

However, the introduction of the government actor and head of the educational sector, in this case, as a "support" to obtain additional resources to the budget, is not very functional and, perhaps, counterproductive in a logic of autonomy and institutional efforts to be entrepreneurial. . It is likely that this new actor in the procurement of own income will act with rules of bureaucratic standardization and will hinder the dynamics of demand for services or products of the universities, therefore its procurement is an essential way to support the model that we propose in this essay. .

According to Burton Clark (1998), one of the five organizational ways to create Entrepreneurial Universities is that concerning a diversified financing base (Clark, 1998) .

This financing base needs " *discretionary funds* ", these "discretionary funds" are the third source of financing, the public budget and funds from researchers being the previous two; "These discretionary funds are known and classified in our higher education system as *Own Income* , *Own Resources* or *Self-Generated Income* (Clark, 1998, p. 6) .

In this third source, income from intellectual property rights and copyright, income from services on campus, student tuition (symbolic for its amount in Mexico), and , donations from alumni (Clark, 1998, p. 6) .

Supporting this income diversification would improve the opportunity to make significant moves without waiting for system-wide enactments to arrive slowly, with standardization rules attached (Clark, 1998, p. 7), rules issued by entities such as the Secretariat that Now it is proposed as help for budget collection. Whether to address declining public budgets or to build long-term projects, such as scientific research projects.

In the concept of the entrepreneurial university we find the third mission of universities, specifically referring to social entrepreneurship, that is, leaving the cloisters to encounter social problems, assuming social responsibility for their solution.

In Mexico, the National Association of Universities and Higher Education Institutions (ANUIES) (2012) included the notion of social responsibility of higher education; likewise, the URSULA project emerged as a global initiative, with Latin American roots to integrate Latin American efforts aimed at for this purpose. This led to the creation of some programs and objectives provided with budget funds to support HEIs in strengthening the task, their approach contained affirmative actions and dictates of strategies to be undertaken (Vallaeys, 2019) .

Social responsibility as a management concept outside the cloisters soon became a concept understood among the leading elites and academic communities of public universities. Likewise, university involvement went from a limited catalog of university services to a broad compendium of discourses, permanent and emerging programs. With this, a kind of mimetic isomorphism is witnessed (DiMaggio & Powell, 1994) in terms of plans, programs and structures and a generalization of the so-called University Social Responsibility; a synergy of ideas, institutional policies and budgetary contexts (Birnbaum, 2000) .

Risk atlases, environmental impact studies, prospective studies, economic and social studies, technological transfers, among many others, were added to the menu available for consumption by the government sector, which was required to support and justify public policies, but, above all, to ensure efficient operation and impact as a public administration.

To ensure that these three trends of entrepreneurial higher education institutions, linked under a focus on social responsibility and with a competitive vision, are generated, the organization is inevitably aimed at operating in a network management model that seeks an intense production of services. and knowledge products, relevant and specialized for all sectors.

Only networks and efficient revenue collection can provide the necessary autonomy and sufficient motivation for the institution's communities to take full advantage of the holonic network design and its benefits.

Conclusions

The analysis of the context and the Mexican educational system allows us to reflect on whether committing to the demands, the transmission of knowledge as teachers, and the application of evaluation guidelines is the optimal way to achieve advancement and progress in the country's science and technology. We consider that it is not enough, that the primary objective must be the commitment to contribute to the training of better people, with critical capacity and innovative vision and sensitive to the needs of their environment.

In conclusion, the SWOT analysis shows the need to strengthen knowledge management, increase curricular programs focused on increasing values and social responsibility, take advantage of the environment, diversify resources, among others. Meanwhile, we share the need to rescue the cognitive, ethical and cultural riches of our Mexico and that universities, their members and public policies should contribute to a synergy in which the objective is reconsidered, clarified and models begin to be developed and adopted. that allow students to enhance their skills.

Among the representative features of the proposal are network management and diversified financing. Just as considering the role of teachers both in the teaching and learning process and in the management of universities is important in this proposal for the administration of an educational model that seeks to promote the generation, organization and dissemination of both scientific, technological and cultural; As teachers are active participants in the generation and construction of knowledge.

Future Research Lines

Within the next studies on this topic, it is suggested to integrate the analysis of the national strategies and lines of action that dictate the functioning of the national educational system to identify if some of the variables considered in the educational model proposed herein are contemplated. study. The analysis of variables that allow us to know the quality of education and the relationship with the factors and phenomena related to higher education that have strong implications in the educational models of HEIs should also be carried out.

Likewise, it is proposed to integrate an in-depth analysis of the participation and training of teachers, as key actors in the planning and implementation of dissemination and linkage actions, which require the development of skills in research, entrepreneurship, collaborative work, innovation, among others. others. Furthermore, it is essential to expand

the analysis of the HEI financing model and whether it is used to establish entrepreneurial universities with innovation and global competitiveness capabilities.

The above can help expand the design of the proposed educational model, suitable for the new and challenging demands that the Mexican context suffers with a vision of potentialization that better responds to the current reality and context characterized by a dynamic of changes resulting from the digital transformation.

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