

ISSN 2444-4979

Journal of Human Resources Training

Volume 6 Issue 17 -- January -- June -- 2020

ECORFAN[®]

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Journal of Human Resources Training,

Volume 6, Number 17, June - 2020, is a quarterly Journal edited by ECORFAN-Spain. Matacerquillas Street 38, CP: 28411. Moralarzal-Madrid. WEB: http://www.ecorfan.org/spain/rj_formacion_rh.php, revista@ecorfan.org. Editor in Chief: GUZMÁN - HURTADO, Juan Luis. PhD. ISSN 2444-4979. Responsible for the last update of this issue ECORFAN Computer Unit. Imelda Escamilla Bouchán, PhD. Vladimir Luna Soto, PhD. Updated as of June 20, 2020.

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Journal of Human Resources Training

Definition of Journal

Scientific Objectives

Support the international scientific community in its written production Science, Technology and Innovation in the Field of Humanities and Behavioral Sciences, in Subdisciplines of human talent, organizational commitment, work welfare, work performance, human resources management, human capital, productivity, organizational culture, leadership and sustainability.

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The works must be unpublished and refer to topics of human talent, organizational commitment, work welfare, work performance, human resources management, human capital, productivity, organizational culture, leadership and sustainability and other topics related to Humanities and Behavioral Sciences.

Presentation of Content

In the first article we present, *Educational innovation and university academics: the challenges of incorporating change into teaching and management practice*, by VERDÍN-ZEA, Aldo A., ABUNDIS-DE LEÓN, Felipe and GONZALEZ-BASILIO, Sofía de Jesús, with adscription in the Universidad Autónoma de Nayarit and Universidad Autónoma de Nuevo León, the next article we present, *Professional profile of the distance education expert*, by RIVERA-GUTIÉRREZ, Erika & HIGUERA-ZIMBRÓN, Alejandro, with adscription in the Universidad Autónoma del Estado de México, the next article we present, *Experience on the use of activities for personal development and hard sciences in higher education students*, by HERNÁNDEZ-TINOCO, Araceli & MORÁN-SALAS, María Cristina, with adscription in the Universidad de Guadalajara, the next article we present, *Labor paradigms expressed in a model of development and training of personnel for the productive sector*, by SALINAS-AGUIRRE, María del Consuelo, HERNÁNDEZ-CUETO, Jaquelina Lizet, YAÑEZ-FLORES Sara Margarita and EMILIANO-CASTILLO, Carlos Daniel, with adscription in the Universidad Autónoma de Coahuila.

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Educational innovation and university academics: the challenges of incorporating change into teaching and management practice

La innovación educativa y los académicos universitarios: los retos para incorporar el cambio a la práctica formativa y de gestión

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DOI: 10.35429/JHRT.2020.17.6.1.9

Received January 21, 2020; Accepted June 29, 2020

Abstract

The processes of educational and curricular innovation have been presented in recent decades within the Higher Education Institutions in a remarkable way by the emergence of new policies by the governments in charge, as well as by the various social movements that have promoted improvements in the processes of student learning. However, the accelerated work that has been done to incorporate change into education systems has left two issues unresolved, on the one hand, the careful and in-depth analysis of the concept of innovation and on the other, the way in which academics incorporate change into practice both in classroom and in academic management. The purpose of this research is to make progress in these two aspects, and to do so, it addresses innovation from the perspective of globalization and identifies academics as factors of change.

Innovation, Academics, Incorporation, Learning Practice

Resumen

Los procesos de innovación educativa y curricular se han presentado en las últimas décadas dentro de las Instituciones de Educación Superior (IES) de una manera sorprendente, tanto por el surgimiento de nuevas políticas por parte de los gobiernos en turno, como por los diversos movimientos sociales que han impulsado cambios en los procesos de formación de los estudiantes. Sin embargo, el trabajo vertiginoso que se ha realizado para incorporar el cambio en los sistemas educativos ha dejado dos temas pendientes, por un lado, el análisis cuidadoso y profundo del concepto de innovación y por otro, la forma en cómo los académicos incorporan el cambio a la práctica, tanto en los espacios áulicos como en los procesos de gestión académica. El presente estudio tiene como propósito avanzar en esos dos aspectos y para ello se aborda la innovación desde líneas vinculadas a procesos globales y se trabaja con los académicos como sujetos posibilitadores del cambio.

Innovación, Académicos, Incorporación, Práctica Formativa

Citation: VERDÍN-ZEA, Aldo A., ABUNDIS-DE LEÓN, Felipe and GONZALEZ-BASILIO, Sofía de Jesús. Educational innovation and university academics: the challenges of incorporating change into teaching and management practice. Journal of Human Resources Training. 2020. 6-17: 1-9.

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Introduction

In the field of education, the term innovation is a new concept, which is generally presented in association with a modernizing discourse from which various policies and programs related to educational reforms and changes are structured (Gros and Lara 2009, Orozco 2010, Díaz Villa 2014).

As it is a concept that appears linked to the policies of change and modernization of education, it is used in various ways, in heterogeneous contexts (basic education, upper secondary and higher education) and with meanings associated with specific spaces, where in the implications they have regarding the representation and practices of the agents of the different fields of education are rarely analyzed.

The innovation in the curriculum of the universities responds to a set of policies at the international and national level, which dictate and guide the application of various approaches with the aim of improving. Since the 1980s, Latin American universities have undertaken a series of changes in their training processes, which have been the result of macro trends associated with a set of curricular policies at the international and Latin American level (Díaz Barriga, 2013); as well as the incorporation of strategic trends or micro-trends (Díaz Villa, 2011) that are interpretations of the institutions associated with the context and that have an organizational type reading that allows them to be concretized.

It is then that the Autonomous University of Nayarit (UAN) is no stranger to all this hustle and bustle of curricular innovations that HEIs face, and that is why in 2010-2011, an entire updating process was proposed at the institutional level of the plans and programs of studies at the bachelor's level, which meant a series of challenges and transformation within it, therefore the interest of the research that is carried out, focuses on working with the academics that faced the process of curricular updating and various manifestations of educational innovation.

Educational-curricular innovation and the public university

Regarding the positioning of Latin American universities to assume the changes, Bruner (2005) argues that universities since their origin have been considered in the public sphere for being the institutions that offer higher education and have recognition of their social character. From this author's perspective, universities have upheld and legitimized the right to train professionals and grant degrees.

The university's ability to structure proposals whose scope affects the order of the social structure, is one of the main elements to focus attention on its activity and the processes that take place within it. One of these processes refers to the construction of university curricular projects, which, in a broad sense, are political projects (De Alba, 1991), where the formation of subjects represents the synthesis of cultural elements that hegemonic groups determine for a professional practice.

The ability of universities to define their curricular projects is indisputably associated with their autonomy. This is obtained through various mechanisms of struggle and negotiation that, upon consolidation according to Bruner (2005, p.32), acquire "the right to act as an institutional body vis-à-vis the external world, to control the recruitment of its members - teachers and students - and to dictate its own internal regulations and apply them jurisdictionally".

In Mexico, educational reforms are not exempt from the political and economic pressures that make HEIs propose processes of "change with absence" (De Alba, 1991), reflection on the social conditions that determine the public university and, even more so., without an analysis of the institutional conditions and the educational system that define or not the viability of the reforms that are undertaken.

Acosta (2000) and Furlan (2012) affirm that the set of policies that at Latin American level had a strong impact on the curricular reform processes in the mid and late 1990s, in the Mexican context also had their manifestations, which from the The level of public and educational policy at the national level can be seen in the speeches of the actors that make up the HEI. Hence the need to identify the participation of university academics in curricular innovation processes.

In Mexico, in terms of public policies associated with innovation and as part of the macro trends generated internationally, in 2000 the National Association of Universities and Institutions of Higher Education (ANUIES) built a proposal called Higher Education in The 21st century. Strategic lines of development, which sought to materialize the set of changes necessary for a society characterized by the diversity of professional training needs and its centrality in knowledge as an economic good.

According to this document, one of the programs that every university should maintain was that of educational innovation. From this perspective, the ANUIES (2000, p.6) set out as an objective “to improve and, where appropriate, transform the educational models prevailing in HEIs, with a view to achieving better levels of quality, coverage and relevance in higher education”.

The proposal for educational innovation as a program appears associated with a series of elements such as the flexibility of classroom time, the transformation of pedagogical practice, the incorporation of technological resources into learning processes, as well as the offer of training options in unconventional modalities (ANUIES, 2000). These proposals are compared with the curricular innovation models described by F. Díaz-Barriga (2005) in the state of Curricular Research in Mexico 2000-2010.

According to Rodríguez (2015), a substantial part of the proposals presented by ANUIES in the 2000 project are still in the construction process by most of the Universities and Institutions of Higher Education. In addition, an absence of evaluation processes of the conditions in which innovative curricular models would be implemented is identified, this implied that the processes for the realization of the discourses in practice did not have a process for monitoring and evaluating their impact.

Context and methodological aspects

The central part of this work focuses on research carried out at the Autonomous University of Nayarit in light of the curricular innovations that academics have faced.

The UAN is a public educational unit with autonomy to govern itself, classified by the Ministry of Public Education (SEP) as a State Public University. It was established as a university in 1969 and is one of the first state universities in Mexico. It is located in the center of Nayarit, in the municipality of Tepic and has extensions in several municipalities in the state (currently the concept of extensions is being transformed by the Regional Academic Units).

Since its foundation, it has provided care of the upper and upper middle class, maintains an enrollment of 29,717 students and more than 1,400 teachers (UAN, 2019). Approximately 18,063 students are served in higher education, distributed in 68 Academic Programs at the educational levels of Associate Professional and Bachelor and 24 postgraduate (Ibídem), incorporated into six areas of knowledge: Basic Sciences and Engineering, Biological, Agricultural and Fishing Sciences, Sciences of the Health, Arts, Economic and Administrative Sciences and Social Sciences and Humanities.

An important innovation made within the university was to initiate a process of curricular updating in the academic undergraduate programs, which was carried out between 2012 and 2016, managing to modify 29 curricular projects, which to date are in operation. This update is understood as a process of curricular innovation that permeated the design and development of study plans. Among the main innovations in this curricular updating process was the incorporation of integrated professional competences as an achievement unit, a student-centered training process and different expressions of curricular flexibility. Which were a proposal derived from a study of social relevance carried out at the institutional level and by the current needs of the context.

It is important to clarify that this research does not focus on the study of innovative processes, but on curricular innovation as a process of change in the practices of academics and understand how these have been incorporated into updated study plans at the University. Likewise, the members of the academies of the academic programs are recognized as the main agents of curricular innovation, specifically the academy coordinators, who are responsible for the management of curriculum innovation.

In this sense, the academy for the University is understood as a "collegiate body made up of members of the academic staff assigned to the University, who carry out a series of activities related to teaching to improve the quality of professional training" (UAN, 2017, p. 3). And that they aim to "Contribute to the improvement of the quality of higher education by promoting the performance of teaching staff through collaborative and collegial work; with the purpose of strengthening the integral formation of the student and the development of their professional competences established in the study plans and programs" (Ibídem).

The academies, as the bodies responsible for teaching, managing and accompanying students within the learning units, have the ability to identify, through their members, how the study plan is carried out. Each academy has a coordinator, who organizes and monitors the work of the academy and represents it in the curricular design processes.

The sample of this study focuses on 17 registered academies belonging to the different areas of knowledge of the UAN, integrated into the 29 updated programs. This is because its members have undergone the design and development processes of study plans, where curricular innovation models have been manifested / declared as an institutional policy and have been translated into a set of strategies for their implementation.

In the specific case of the academies, the coordinators have been selected, who organize the work within them, in addition to the fact that their activities are consistent with what is intended in this research. Likewise, the experience and perspective of the agents who have coordinated the updating processes at the institutional level (academics with a managerial or administrative position) are incorporated.

In the following section, some results of the opinions of university academics participating in this research as agents of curricular innovation are presented, taking up Bourdieu's theoretical premises and their implications in this process.

University academics as agents of curriculum innovation

Bourdieu (2009b) in his work *Homo Academicus*, establishes that although the faculties of higher education centers can be treated and understood in a homogeneous way because agents with objective disciplinary relationships converge, in the same way there can be another level of analysis and understanding of the relationships between its members, where the competencies and positions regarding the occupation of the fields of power within the faculty make differences are established. Based on this theoretical approach, the opinions collected for the purpose of this work are analyzed.

The university field from Bourdieu's idea is defined "as a space of positions captured through the properties of agents who determine their attributes or attributions and who fight, with weapons and powers capable of producing visible effects, to take or defend them, to keep them intact or transform them" (2009b, p. 102).

In this university field it is important to understand that positions of power are given through the properties and capital of their occupants, that is, it is not the power of agent X of a faculty or school, it is the set of positions and recognitions It is the agents of that faculty or school that determine power and their capacity for determination (Bourdieu, 2009a).

This idea establishes a new way of understanding the power and determination relationships between the agents of the university fields: it is not about understanding the capacity of the academic as an individual agent, but the capacity of the academic as an agent of a group (call it the Academic Unit, Academic Program, Curricular Committee¹ or Academy) and the role it plays as part of that group in the construction and determination of the curricular project.

¹ Permanent collegiate body, which belongs to each Academic Program whose objective is to design, update, modify and evaluate the curricular project (UAN, 2017, p.1).

Like Bruner (2011) and Bourdieu (2009b), it is recognized that one of the main characteristics of the academics who are part of the universities and centers of higher education is their ability to enter or not others into the body of academics; in other words, it is their ability to establish the rules of the game to occupy a position within the profession they wish to enter and, therefore, to determine whether the new professional will be empowered to exercise and play a role in the social fabric.

The idea that Bourdieu (2009b) and Bruner (2011) share is a clear reference to understand the curriculum committee as the group of agents that build a curriculum project for the training of other professionals. This project can be read as establishing the rules of the game to be part of a profession, as well as the canonical and disciplinary forms that must be followed in order to exercise.

In Bourdieu's (2009b) analysis of the distribution of power in the university, he establishes three situations that are important for understanding how university academics become agents of construction of a reality not given or determined by the political structure in turn.

A first situation is the conflict that is generated between new academics and those who already have a history in the institution for years, which is directly associated with a historical phenomenon that the author describes around the occupation of spaces of power and determination had always been separated by the age of the academics and by the years of experience they have in the university field, in such a way that the difference between new teachers and old teachers was clearly marked by biological questions that they became structural.

However, the arrival of new teachers with sufficient experience (scientific power) as a result of specialized postgraduates and who position them outside the age range and within the group of experts with disciplinary authority in the field, generates a conflict within the institutions.

In the field of study plan design and development, this conflict is observed in decision-making regarding the integration of disciplinary trends or the continuity of canonical knowledge constituting the profession, as well as in the number of participants in The curricular committees, that is, the attribute of being a member of a curricular committee (and in its case the coordinator of the academy) debates whether the degree of knowledge or experience in years within the exercise of the profession and teaching is privileged.

The conflict arises in determining the rules of the game of the profession. Academics newly incorporated into the university field, through academic training, do not always have knowledge of the practices and ways of exercising a profession in real contexts; On the other hand, older teachers know the rules of the profession and several have built them themselves, as a result of their experience and practice.

It is worth mentioning that, although the rules for the exercise of a professional practice in ancient times were given by high schools or by professional courts, today they have other names and forms of organization, such as professional associations, bars, associations and their certifications, up to those established by the state in the entrance and opposition exams (Consult Miguel Ángel Pasillas in University Teaching, 2011).

In the same sense, Bourdieu reveals in *Homo Academicus*, the existence of a university power and, on the other hand, the tradition and university patriotism. In this regard, the author establishes:

It is understandable that university power is so often independent of purely scientific capital and the recognition that it attracts. Temporal power in a universe that is neither *de facto* nor *de jure* consecrated to this kind of power, always tends to appear, perhaps even in the eyes of its most secure holders, as an inferior form of power, as a substitute, or as a consolation prize. It is also understood the deep ambivalence of the university students who dedicate themselves to the administration with respect to those who dedicate themselves, and successfully, to the investigation; especially in a university tradition in which university patriotism is weak and poorly rewarded (Bourdieu, 2009b, p. 134).

The second situation related to the existence of a university power that is not based on scientific power, but on the relationships built by the agents and the ways in which they determine the very structure of life on the university campus and which, as the author, on many of these occasions this power is not perceived by the agents themselves, but acts in a structuring and structuring way (Bourdieu, 2009a) when participating in the innovation processes of the study plans.

Recognizing the existence of power in the agents that make curricular innovation possible or not, beyond the capital coming from the scientific field, makes us understand that they are capable of mobilizing within the curriculum field from their communication relationships with others and of their own conformation as university agents in addition to their capacity for empowerment in decision making.

The third situation generated from the construction of the discourse of the academic participants in the research is related to the existence of university tradition and patriotism, although the author refers to the ambivalent situation (and more of power distribution) between administrators and academics devoted to research, and how little reward is the commitment and loyalty to the institution.

In the context of the State Public Universities, a large number of the conditions to strengthen training, to recognize the trajectory, achieve a salary increase and even to access financial supports that impact the development of professional activities, are oriented for academic researchers ; the academics dedicated to the administration do not have sufficient conditions for their professional development, however, the time they dedicate to their role is more than that agreed in the labor standards of the institutions, it is associated with a relationship of commitment and loyalty.

From the above, it is possible to affirm that the process of curriculum innovation at the UAN is crossed by this third situation in a structural way.

At the time of curricular design, academics with administrative functions are rarely invited to be part of the process of forming a new study plan, this gives preference to disciplinary experts and those who keep the trends of the profession up to date, in such a way Thus, the designs of the plans that incorporate curricular innovation do not always show consistency with the identity principles of the institution.

It is not meant that the academics dedicated to research do not maintain identity principles associated with the university, it is only pointed out the fact that the academics dedicated to the administration, as agents, possess a great capacity for decision making in the formation of plans. for study and for the training of new professionals.

Conclusions

When curricular innovation is developed in public universities, academic participation is conditioned by a collective habitus determined by the structure, which is associated with various elements of the public university.

The above means that it will have a position at the time it develops the curriculum innovation process, it will have previous precepts of the structure, but also of the new elements or positions of what it will assume as innovation.

At the time of developing the study plans and the curricular innovations that were integrated into them, the administrative conditions for their development do not always exist, here the academic administrators become a key piece and face two scenarios in which they have to choose (enable, in Mollis terms) to build the conditions that were not planned so that the innovation can be developed or deny the need to change forms, procedures and elements of the current structure for the development of innovation.

The choice of administrative academics is not the only condition for the development of curricular innovation, but it does show how in the decisions and participations of agents in the construction of the university curriculum it is the product of a structure, of a set of relationships, of power capacities, of collective positions, of agency capacities, of institutional commitments, of identity ties, of contextual conditions, which end up reflecting the strength of habitus in curricular innovation.

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Professional profile of the distance education expert

Perfil profesional del experto en educación a distancia

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DOI: 10.35429/JHRT.2020.17.6.10.19

Received February 5, 2020; Accepted June 28, 2020

Abstract

The purpose studio is to present a referential framework focused on defining what is the professional profile of distance education expert, a specialist in higher education. For this, a qualitative-descriptive methodology will be used, based on literature scientific review, as well as empirical studies. To achieve, first the perspective of the field in the current labor market will be described. Second, the most common activities will be defined. Third, an interview process will be presented to fill the position. Fourth, the prospective of the field of work will be determined. Finally, the final considerations of this document will be outlined.

Competences, Distance Education, Professional Profile

Resumen

El propósito del estudio es presentar un marco referencial centrado en definir cuál es el perfil laboral para un profesional de la educación a distancia, especialista en la educación superior. Por tanto, se utilizará una metodología cualitativa-descriptiva, a partir de la revisión de la literatura científica, así como de estudios empíricos. Para lograrlo, primero, se describirá la perspectiva del campo en el mercado laboral actual. Segundo, se definirán las actividades más comunes. Tercero, se presentará un proceso de entrevista para ocupar el cargo. Cuarto, se determinará la prospectiva del campo de trabajo. Por último, se esbozarán las consideraciones finales.

Competencias, Educación a Distancia, Perfil Profesional

Citation: RIVERA-GUTIÉRREZ, Erika & HIGUERA-ZIMBRÓN, Alejandro. Professional profile of the distance education expert. *Journal of Human Resources Training*. 2020. 6-17: 10-19.

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Introduction

Currently there are several titles that are used within the workplace to refer to the instructional technology and design specialist (IDT), such as instructional designer, technologist, strategic and learning consultant, virtual environment specialist, instructional developer, education specialist, developer media, trainer, instructional systems specialist, to name a few. However, there are differences in the description of responsibilities in the workplace, which depend on the field in which they focus, educational, industry, business, consulting or militia. However, variations do not only exist in the jobs sought, but also in the expectations of the organizations for which they will work.

Hence, RTD should be seen as an emerging professional (Rothwell & Kazanas, 2015), focused on leading education and training organizations in improving teaching and learning through the applications of educational technology. Therefore, the purpose of this document is to present a referential framework focused on defining what is the job profile for a distance education professional, a specialist in higher education. For this, a qualitative-descriptive methodology will be used, based on the review of the scientific literature, as well as empirical studies. To achieve this, first, the perspective of the field in the current labor market will be described. Second, the most common activities will be defined. Third, an interview process will be presented to fill the position. Fourth, the prospective of the field of work will be determined. Finally, the final considerations will be outlined.

Development

Perspective of the Current Labor Market of the Field

RTDs are currently contracted by business, industry, and higher education organizations. However, each RTD position has different responsibilities and expectations. In addition to strengths and weaknesses depending on their preparation and experience. Therefore, to be able to speak from the perspective of the current labor market of the field, it is necessary to define the professional profile (PP) regardless of the context in which it works.

On the one hand, Coll and Moreneo (2008), as well as Vargas (1996) refer to the PP, as the set of competences where the individual has the ability to put their knowledge, skills, experiences and personal characteristics into full use. in a certain position. On the other hand, the International Board of Standards for Training, Performance and Instruction (IBSTPI) (2012) developed a set of internationally recognized competences for RTDs. These focus on: (a) professional foundations; (b) planning and analysis; (c) design and development; and (d) implementation and management. Therefore, professional development for RTDs establishes the application of research and theory to the discipline, as well as updating and improving knowledge, skills and attitudes regarding the instructional design process and its field of application.

Furthermore, the Association for Educational Communications and Technology (EGTC) defines IDT as a learning facilitator, which improves performance through the creation, application and administration of technological processes and resources (as cited in Januszewski & Molenda, 2008). Consequently, the instructional technology and design specialist is a professional who has the ability to facilitate and improve the educational process through theory, planning, analysis, design, development, implementation, evaluation, and management, supported by instructional methods, materials, and technological resources.

That said, to address the perspective of the labor market of a RTD in higher education, it is necessary to consider what Valente and Varela (as cited in Sánchez-Olavarría, 2014) point out, who need to assess the quality of an individual's professional profile Three aspects must be considered: (a) professional training, (b) professional performance, and (c) labor market demand. These have become indicators that show how higher education institutions (HEIs) respond to the dynamic demands of the labor market (Sánchez-Olavarría, 2014).

On the one hand, the quality in the training of an RTD professional does not only rest on the theoretical and technical aspects, but also on the pedagogical framework under which technology is inserted and used didactically.

In this sense, the knowledge, perceptions and attitudes that one has about the media will become determining factors for their integration in the training process. Hence, Cabero (2006) points out that various factors must be taken into account in this training such as: (a) presentation of content; (b) synchronous and asynchronous communication tools; (c) teaching-learning strategies; and (d) use of technological materials.

Furthermore, Navarro (as cited in García, 2014) states that the IDT should focus on the use of Web 2.0, as a means and resource for carrying out these activities, taking into account virtual learning spaces for education, blogs, wikis, podcasts, e-books, virtual classrooms, among others. Therefore, the quality of RTD training must take into account all these aspects that enable knowledge, interaction, communication and information mediated by technological contexts.

On the other hand, the professional profile in job performance refers to the competencies (behaviors, abilities and knowledge) that people are expected to demonstrate that they are successful in their profession (Díaz-Barriga, 1999). In this sense, the Association for Talent Development (ATD) (Rothwell & Kanazas, 2012), carried out a study by designing and implementing a mixed method, with the purpose of determining the key actions in the successful performance of the IDT. To do this, 26 RTD employers were interviewed, in addition to 1,381 professionals linked to the field.

Where the actions that are commonly performed were pointed out:

- (a) Conduct the needs assessment (76%).
- (b) Design study plans, programs and problem solving (80%).
- (c) Identify appropriate learning approaches (82%).
- (d) Collaborate with the productive sectors (76%).
- (e) Design instructional materials (80%).
- (f) Develop instructional materials (74%).
- (g) Apply learning theories (68%).

(h) Evaluate the learning design (72%).

(i) Analyze, select and integrate technological resources (51%).

As can be seen in the study, all the tasks are important for the participants, even when analyzing, selecting and integrating technological resources obtained the lowest percentage. While the most prevalent action focuses on the design and needs of the learner. Activities that are directly linked to the current practice of the RTD expert in higher education, focused on the search for various job profiles (Campbell, Schwier & Kenny, 2009), for example: instructional designer, teaching designer, project manager, consultant Educational, Instructional Development Consultant, Education Program Designer, Learning Consultant, Education Analyst, Educational Technology Manager, Learning Management Systems Preparation Coordinator, Curriculum Developer, Instructional Facilitator, Program Manager, Technology Specialist educational, technology coordinator, educational technology specialist, media developer, course designer, course developer, educational researchers, instructor, among others. Indeed, there is a diverse field of work in which RTD professionals can participate.

With regard to the RTD labor market demand analysis, it provides an in-depth understanding of the employment situation of higher education professionals linked to the field of information technology and telecommunications (ICT). On the one hand, in Mexico during the first four months of this year, only 295,000 people work within the ICT area, of which only 3.7% are in jobs within upper and upper secondary education (STPS-INEGI, 2020). On the other hand, a study on the employment situation of professionals in the information technology sector in Spain (CCII, 2015) is taken as a reference, considering that similar studies with scientific validity are not yet available in Mexico. The results show that the level of employment of RTD graduates and professionals is very high. Where, the higher their academic training, the higher their level of employment. However, there are employment opportunities in the medium term, in basic, middle and higher education. Likewise, the results show an unmet demand for RTD professionals, derived from a lack of skills in both a second language and behavioral skills.

In short, the perspective of the labor market of a RTD in higher education is considered in three aspects. On the one hand, his professional training, focused on having the necessary skills that allow him in the educational process, plan, analyze, design, develop, implement, evaluate and manage, through the application of instructional methods, materials and technological resources. Aspects that are complemented by what Cariaga (2020) points out when he mentions that the “set of knowledge, skills and attitudes necessary to promote student learning in an increasingly technological world must also be considered, emphasizing the need to adapt the educational context to the world posed by technologies”(p. 7).

Likewise, a clear description of the professional profile for their job performance in the selected educational field. On the other hand, the supply of the labor market that considers their competences, placing them appropriately in the scope of performance in question.

Responsibilities of an IDT

Within the work environment in which an RTD is carried out, a series of functions are established that derive from their professional competences and the context in which they are found. In this sense, it is relevant to mention that the EGTC (as cited in Yeaman, Eastmond & Napper, 2008) proposes 16 professional RTD skills focused on:

- (1) Identifying projects for instructional development.
- (2) Develop evaluations of procedures and instruments; as well as the interpretation of results.
- (3) Create plans for evaluating the entry skills and attitudes of learners and instructors.
- (4) Analyze work structures, activities and content.
- (5) Establish learning objectives.
- (6) Analyze the conditions and characteristics of the instructional environment, identifying the resources of the institution.
- (7) Select sequential processes to guarantee learning.

- (8) Determine instructional strategies.
- (9) Establish a sequence of learning activities, according to the context.
- (10) Evaluate, adapt or, if appropriate, propose the acquisition of instructional resources (means), as well as the production of instructional materials.
- (11) Plan, conduct, and evaluate instructional and training processes.
- (12) Design courses, training programs, and workshops for managing educational systems.
- (13) Plan and monitor instructional development projects.
- (14) Carry out effective communication (visual, oral and written).
- (15) Leadership to work as a team.
- (16) Promote the dissemination and adoption of instructional development processes.

In this sense, Seels (as cited in Vargas, 1996) considers that to describe the responsibilities of an RTD, the design, development, use, administration and evaluation must be considered; taking into account that they are the areas of competence of RTD professionals. In design, focused on determining learning aspects. Development, focused on changes in the instructional media.

The use, in the use of processes and resources to learn. Administration, in controlling technology and instructional design through planning, coordination, and supervision. The evaluation, focused on projects, programs and products. Vargas (1996) points out that through these five domains, both knowledge and application are integrated to solve problems. (Theory and Practice) of an RTD Professional. From the above, it is evident that the responsibilities of a RTD in higher education will depend on the actions of their professional competences (Saettler, 1990, as cited in Januszewski, 2001), as well as on the impact they have with respect to the process teaching learning.

To exemplify the above, the organization manual of the UAEM's Continuous and Distance Education Directorate (2011) will be taken as a reference. To do this, some of the functions that are linked to a professional in RTD will be described. On the one hand, the distance education coordinator must: (a) coordinate the planning, organization, supervision and evaluation of distance education (EaD); (b) supervise the design and preparation of teaching materials; and (c) promote the training of material designers. The content manager must: (a) manage and supervise the creation of projects, programs and courses in distance or mixed modalities; (b) establish guidelines and procedures for planning, instrumentation and evaluation of educational programs or courses in any modality; (c) define guidelines and processes for the design of educational materials; (d) establish methodologies for the training of consultants, material designers, instructors and tutors in any modality. The pedagogical manager must: (a) develop pedagogically the proposals and practices of the teaching-learning processes built by the teachers and the content manager; (b) work collaboratively with the content manager; (c) monitor and evaluate compliance with the pedagogical structure of the educational proposals of the coordination. The manager of the learning unit must: prepare didactic resources mediated by ICT, in accordance and relation to what has been developed by the content manager and the pedagogical manager. Therefore, the importance of the responsibilities inherent to the position of an RTD is clarified, based on the competencies that in higher education should be considered as an expert in this area.

Interview Process to fill the position

In all organizations, protocols are followed for the recruitment and selection of personnel, with the objective of making the administration of human resources efficient. Through the application of techniques and instruments that facilitate the hiring of personnel with a professional profile and based on the legal requirements established by it. Higher education institutions are no exception. In this sense, for the recruitment and selection of a professional in RTD, the procedure established by Chiavenato (2000) is taken as a reference.

It should be noted that in the recruitment stage, candidates potentially trained to fill a vacant position are identified and interested (Peña, 1993). Job descriptions provide the basic information about the roles and responsibilities that each job includes. Therefore, Chiavenato (2000) mentions that there are two types of recruitment: (a) internal, the organization tries to fill the vacancy by relocating employees, it does not consider external bodies; (b) external, it is assisted by means of communication abroad. After recruitment, the selection process continues, which is not an end in itself, but a means for the institution to effectively achieve its objectives (Chiavenato, 2000). Where, the only competitive advantage that can differentiate her from another is her human talent, which is achieved through an efficient selection process (PS). Therefore, the staff selection and recruitment process begins the moment a vacancy arises for a current or new position for an IDT professional. So the PS for an IDT contemplates a series of phases:

1. Establish requirements. It refers to detecting and analyzing the needs for hiring an IDT in the higher education institution.
2. Define the job profile. It focuses on the job description for the IDT.
3. Recruitment. It focuses on establishing the type of recruitment and the means for recruiting candidates.
4. Interviews. A formal and deep conversation is carried out that allows evaluating the suitability of the applicant, based on the previously defined job description. Two interviews are carried out. One led by the human resources area and the other by the immediate future boss. It is in this phase, where the candidate must be able to highlight those competences that they possess and that are useful for the position offered. The main idea is that you can focus on developing personal marketing during the selection process, selling yourself correctly.
5. Tests. Knowledge or skills, psychological and personality tests will be applied.

6. Preparation of reports. All information is carefully reviewed and compared to the job description. The selection results are evaluated with indicators established by the institution. Likewise, the candidates' reports are prepared and who will occupy the position is defined.
7. Final interview. Two interviews are carried out with the selected person, one directed by the human resources area and the other by the immediate future boss.

For all of the above, the provision of human resources (recruitment and selection of personnel) (Chiavenato, 2000) in higher education institutions should be a process that is adaptable and flexible to the needs of the position. It must also be participatory, where the people directly related to the vacancy being promoted collaborate in the suitable selection of the professional RTD profile to occupy the respective position.

Prospect of the Labor Camp

In order to address the prospective of the field of work of professionals in RTD, it is necessary to define the term prospective. In this sense, etymologically prospective comes from the word prospectus, which means looking forward, that is, it allows us to visualize the future and act in the present (Rivera & Malaver, 2010). The Organization for Economic Cooperation and Development (OECD) (as cited in Colocho, 2017) refers to it as "the set of systematic attempts to observe the future of science, technology, economy and society in the long term with the purpose of identifying emerging technologies that are likely to produce the greatest economic or social benefits" (p. 2).

Likewise, Luke Georghiou (as cited in Hartmann, 2011), describes it as "a systematic means of evaluating scientific and technological developments that could have a strong impact on industrial competitiveness, wealth creation and quality of life" (p. 335). Consequently, foresight not only aims to know in advance the future of science, technology, economy and society, to identify the impact of new technologies on society, but to design and build it in a collective and participatory way.

In turn, the predominance of knowledge-based economies is demanding that higher education institutions in Mexico expand their coverage to train a greater number of competent professionals, technicians, scientists, and humanists. However, access to higher education at different levels (undergraduate and graduate) is still limited. It should be noted that educational coverage refers to the percentage of students, who according to their age must be enrolled in an educational level (UAEM, 2019). Today, the coverage of higher education in Mexico is 35.8% of the population between 19 and 23 years, that is, only 34 out of every 100 young people of college age can do so (SNIE-SEP, 2019).

While the average in Latin America and the Caribbean is 42.8% and in OECD countries it is 71.4% (INEE, 2015). However, the coverage goal proposed in the National Development Plan 2019-2024 in Mexico, establishes among its objectives, to ensure greater coverage, inclusion and educational equity in higher education, for a fairer society, reaching 50% in the year 2024. Consequently, coverage should be increased in order for more young people to complete their university studies. In particular, in the state of Mexico, educational coverage is not far from the national situation. The population between 19 and 23 years old, for the 2019-2020 school year was 1,493,271 young people. Where, the enrollment was 441 311, with a coverage of only 29.6%. It should be noted that the Autonomous University of the State of Mexico (UAEM) has an enrollment of 55,489 young people, with coverage of 6.9%. Based on these figures, it becomes evident that educational coverage in the state of Mexico is only 34% (UAEM, 2020). That is why, to increase educational coverage, human, economic, technological resources, infrastructure and equipment will be needed, but primarily agreements between the actors involved and the improvement of teaching-learning processes in HEIs. This will allow planning of the educational offer and the closing of gaps at this educational level. For all of the above, the prospective of the professional field of RTD in higher education focuses on areas of opportunity that derive from the insufficient coverage that occurs at this educational level: (a) distance academic programs; (b) digital teacher training; and (c) development of technological material and resources.

Distance academic programs (PAD). The scope of performance of the IDT will be in the planning, design, development, implementation and evaluation of quality PADs. Including equipment, infrastructure and technology for the operation of the PADs.

Teacher training (CD). The IDT professional will have the opportunity to train and update the teaching staff, as facilitator in the planning, design, development, implementation and evaluation of the programs of the learning units.

As well as, in the creation of learning communities in its different modalities, allowing the development of a solid teaching staff, which participates in consultancies, tutorials and digital design, acquiring the skills for the production of digital materials.

Materials and technological resources (MRT). The IDT will be able to focus on the design and development of audiovisual and multimedia materials in support of PADs. In addition to being a manager for the implementation of technology in classrooms and in virtual learning environments (EVA) or learning management systems (SGA).

Definitely, for higher education institutions to operate their PADs, they must contemplate a digitized administration. Therefore, it is necessary that technology constitutes the element through which all the processes included in digital systems are developed.

Where, the IDT professional participates as manager, leader, guide and facilitator in the operation of institutional substantive and adjective functions.

As well as in its ability to “guide and guide the constructivist mental activity of its students, to whom it must provide pedagogical help through the different media of communication and interaction, in accordance with the discipline that is going to teach” (Cifuentes-Medina, González-Pulido, & González-Pulido, 2020, p. 9).

In addition, the distance study modality will allow expanding the opportunities offered by higher level education to more and more applicants. In particular, those who, due to their residence or work occupation, find it difficult to travel to educational institutions, in addition to allocating certain hours a day to attend classes.

Conclusions

The purpose of this study focused on exposing a referential framework that would allow defining the job profile for a distance education professional, a specialist in higher education. Therefore, after having defined the job profile of a RTD in higher education, it was possible to delineate the perspective of its labor market through a series of indicators that are considered to assess the educational quality of HEIs.

Likewise, the process for the provision of an RTD human resource was described, which does not differ from the standards that are handled by the human resources departments of any organization. Each of the aspects contemplated in the document made it possible to visualize the prospective of the field of the IDT professional, from the point of view of educational coverage in HEIs, as pointed out by Rivera & Malaver (2010), to look ahead.

Therefore, the job profile of a professional in RTD, specialist in higher education is very broad. However, it is emphasized that the RTD must be constantly updated, in such a way that it has the competences that are demanded of it in a given position, as well as acting ethically in the work environment.

From a global vision linked to social problems, where everything is visualized as a system (Senge, 2016). In other words, establish a network of relationships that allow you to understand, understand and study these relationships to identify the essential variables required in the job profile for a distance education professional, a specialist in higher education. Without leaving aside, that the contributions to the field of Instructional Technology and Distance Education are in their hands and it is they who should strengthen the discipline through research and their professional work. His future is encouraging considering that his field of work is fertile ground to promote the benefits of distance education at the higher level.

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Experience on the use of activities for personal development and hard sciences in higher education students

Experiencia sobre el empleo de actividades para el desarrollo personal y ciencias duras, en los estudiantes de educación superior

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DOI: 10.35429/JHRT.2020.17.6.20.27

Received January 20, 2020; Accepted June 30, 2020

Abstract

Objective: To carry out activities called "awakening" in which students are intended to make students aware of their thoughts and their emotions derived from them to make decisions more assertively and not only by imitation or by mere automation. Methodology: They were provided with life reflections in the first 15 days of class for no more than 15 minutes at a time and later, a WhatsApp group was formed with volunteer students, in which they received small reflections and a daily exercise, for 21 days to realize their thoughts and control them for the benefit of their peace and tranquility. Contribution: As a result, more than 70% of both groups considered these activities to be beneficial and useful for their lives. Subsequently, more than 50% of both groups continued in mental diet activity receiving messages and a small exercise, daily for 21 days. In the classroom, there was better at-the-way behavior between them and the teacher during class development compared to previous semesters where this activity was not present.

Resumen

Objetivo: Realizar actividades denominadas "despertar" en las que se pretende hacer a los alumnos conscientes de sus pensamientos y sus emociones derivadas de estos para que tomaran decisiones de manera más asertiva y no solo por imitación o por mera automatización. Metodología: Se les proporcionaron reflexiones de vida en los primeros 15 días de clase durante no más de 15 minutos por vez y posteriormente, se conformó un grupo de WhatsApp con alumnos voluntarios, en el recibieron pequeñas reflexiones y un ejercicio diario, durante 21 días para percatarse de sus pensamientos y los controlaran en beneficio de su paz y tranquilidad. Contribución: Como resultado más del 70% de ambos grupos consideró estas actividades como benéficas y útiles para sus vidas. Posteriormente, más del 50% de ambos grupos continuaron en la actividad de dieta mental recibiendo mensajes y un pequeño ejercicio, diariamente durante 21 días. En aula se tuvo una mejor conducta actitudinal entre ellos y con el maestro durante el desarrollo de las clases comparado con semestres anteriores donde esta actividad no se encontraba presente.

Mental diet, Personal development, Emotions

Dieta mental, Desarrollo personal, Emociones

Citation: HERNÁNDEZ-TINOCO, Araceli & MORÁN-SALAS, María Cristina. Experience on the use of activities for personal development and hard sciences in higher education students. *Journal of Human Resources Training*. 2020. 6-17:20-27.

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Introduction

Society changes, the political, social, commercial system is transformed and current needs require that education also move, evolve and change, this implies having other effective tools that allow strengthening the teaching-learning process.

In my experience as a science teacher of the hard calls, I have noticed how students study and "learn" without learning. They mechanize, memorize, pass the course but there is no meaningful learning. I have noticed that although the students actually attend and enroll in an educational program to be an engineer, lawyer, doctor, among others, not all have the intention of "learning", some attend and pass the subjects but do not learn, nor do they can apply the knowledge.

Throughout history it has been observed that the fundamental element in the development of humanity is education. The behavioral school limits the student to unintentional "comply". Learners need to think on their own, hence teachers must wake them up from their lethargy, so that they realize that they are thinking beings, with dreams and thoughts of their own.

Guichot (2006), affirms that, unlike in the 19th and first half of the 20th centuries, at present, the history of education is written in a global way, a new meaning is given to the global / local and is not limited only to "think globally and act locally" and the double pair is proposed: "think global / act local and think local / act global" (Morin *et al.*, 2003).

In modernity, the human being is increasingly moving away from nature, but that modernity even distances the individual from his basic primary being, such as dreams and needs. Suddenly individuals are immersed in meeting the expectations of others, doing, feeling or thinking in relation to the people around them, therefore, they forget about them. Later, there are thoughts that haunt the minds, that bother, because inside they do not agree with all that they do and as a result stress, anxiety and illness occur.

Guichot (2006) explains that Freire, one of the most transcendent pedagogues of our time, justifies education as a process that occurs because of man's need to continue growing as a person. In this sense, one should not lose the perspective that in the classrooms not only is taught in a disciplinary way, people are also trained. Therefore, the development of human values must be encouraged, such as responsibility, discipline, respect, among others. At the same time, encourage the development of autonomy and include activities so that students discover that they are thinking individuals capable of interacting with their environment, their conditions and their own contexts. The role of teachers is to generate meaningful learning, understood as "learning with understanding, with meaning, with transfer capacity, which starts from previous knowledge and allows the construction of new ones, in addition to the predisposition to learn (Moreira, 2012).

In addition, it is important that teachers support the student to achieve self-knowledge and self-regulation, where motivation allows the subject to recognize which factors they can have control over and which they cannot, which facilitates learning. And for this to happen, students have to be convinced that they want to study because it suits them, because they like it and because they want to be agents of change. Not because they were told that way, because that is what a professional does or because it should be that way for people their age. Teachers can encourage them to fall in love with what they do and become passionate about what they do and motivate.

Education is a means of transmission of social rules, all this makes up the culture of the society to which these individuals belong. Education evolves with history and this evolution gives rise to new ways of relating, not only between individuals, but also with oneself and with everything that surrounds it, animate and inanimate.

Previously, almost until the middle of the last century, researchers assumed that a large part of human actions were caused by physiological, biological or hereditary factors. It is not until the 1960s that psychologists began to study more frequently the impact of the environment on the character of people, and it began to be verified that this has even more effect on people than heredity itself.

At the end of the eighties, educational psychology emerged, whose task is to study and define the field of study of the teaching-learning process and the relationship that exists between psychology and education. Today's educational psychology began with the efforts of physicians, psychologists, and teachers who were interested in how they could promote better learning in the classroom, what strategies worked best, and how humans learned.

Howard Gardner, an American psychologist broke the classic paradigms of the beginning of the last century, which only contemplated logical-mathematical and verbal intelligence, measured in the tests of C.I. (Intelligence quotient). This psychologist broke into the eighties, stating that the human being does not have a single intelligence, but has a set of these and that they are useful to solve problems. The intelligences contemplated by Gardner are: spatial / visual, musical, kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical and naturalistic. They can all develop and express themselves creatively. Teachers based on multiple intelligences can make students aware so that they contribute with their own creations and stop making copies of what they learned in the classrooms, that they begin with their transformation by becoming responsible and being active. In addition to focusing on solving problems and finding solutions, on making changes that lead them to develop their thinking skills, that allow them to make their personal wishes and needs come true, always betting on their creativity.

Due to the aforementioned, it is necessary for teachers to guide the student to develop intellectual and socio-affective capacities that allow him to become aware of himself and be able to work with others. Therefore, the role of teachers has been transformed by requiring that they make use of pedagogical and humanistic strategies that support them so that students acquire efficient, comprehensive and effective learning. Learning as a process should focus not only on the development of cognitive skills, but it is also necessary to include socio-affective skills, all with the aim that students can "learn to learn" and self-regulate their learning (Crispin *et al.*, 2011, Fernández Berrocal and Ruiz, 2008)

Another concept comes into play in these times, Emotional Intelligence (EI), which implies using two key emotional competencies: The first is the individual's ability to recognize their own and other people's emotions; while the second is the ability of human beings to use information to resolve conflicts and improve interactions with other people (Goleman, 1996). Therefore, if the student obtains socio-emotional competencies, she will be able to broaden her horizons and experiences, will be motivated and encouraged to find her own way of learning and developing her university career.

The objective of this work was to qualitatively analyze the impact of personal development activities (short talks on personal reflection and mental diet) offered to first-semester students who are taking the Biomathematics subject taught in the undergraduate of Biology, of the University Center of Biological and Agricultural Sciences, of the University of Guadalajara, during the 2019A and 2019B school cycles

Developing

Two actions were developed in class during the teaching of the Biomathematics subject, for students of the first semester of the Biology career at the University of Guadalajara, during the 2019A and 2019 B school cycles. One was short talks of personal reflection directed towards the students. thoughts and their effects. The second action consisted in offering students extra-class support related to what was called "mental diet", consisting of a series of short writings, which included an exercise for each day, in order to reinforce the content of the writings and they can discover the best of them. With the purpose of getting the information to the interested parties and due to the frequent use of the cell phone among them, WhatsApp was used. The "mental diet" was administered for 21 days in order to create new neural pathways (habits of thought). Furthermore, participation in the "mental diet" was voluntary.

Short talks

Each day before starting the class for 15 days, 15 minutes of what is called here the “awakening” process were included. This included reflections to make the students aware of their thoughts... what do you think? Your thoughts define your feelings and living conditions... Topics such as “we are what we think”, “difference between I AM and I AM”, “positive words”, “Time we dedicate to reproduce and transmit tragedy and discontent”, “news and its toxicity”, etc.

Each class began with a sentence, a very brief development was made with examples and ended with motivating questions.

The topics of the sentences that were developed in class were the following:

- We are what we think.
- What do I dedicate my thoughts to every day.
- Thoughts and illness.
- Difference between I AM and I am.
- What happens outside are our interpretations.
- I do not understand what happens outside.
- I do not judge, I do not criticize.
- Wishes.
- Destiny and life plan.
- I am what I can or I am what I want.
- Enjoy the road not the destination.
- Here and now.
- More surprise less expectation.
- One day at a time.
- I can see things differently.

These exercises were carried out as a disruptive measure to move the students' comfort zone and change the concept of the way of teaching subjects as demanding as hard sciences, specifically in Biomathematics. This seemed an excellent way to make changes, with activities that forced the students to reflect, to externalize their thoughts, invited them to realize their own attitudes and thoughts. Likewise, they realized that making mistakes was learning, that allowed them to eliminate what contaminated them and they could be free to choose not to drink or not to think. Specifically, the aim was to develop emotional intelligence through these activities in order to create positive environments and increase the willingness of students to acquire new learning and skills that would lead them to mastery of the subject.

Each day a short and short topic was developed, allowing students to participate with comments and / or questions. Afterwards, the established planning of the Biomathematics subject continued.

At the end of the course, a questionnaire with open questions was applied, in order to know the degree of satisfaction of the strategy used. Responses were collected and analyzed later. In particular, the questions aimed at knowing what they had liked about the short talks and their impact on their person (Annex 2).

Mental diet

At the end of the 15 days of brief talks, what was called "Mental Diet" began, which was a dynamic of observation and mastery of thoughts by sending a daily reflection, accompanied by an activity through WhatsApp. The exercise included short explanations and a task for each day. (ANNEX 1), in the course of 21 days, in order to create a habit.

The students were invited and registered voluntarily, they participated by doing the exercises for each day, during the established time. This diet was based on the one developed by Neville Goddard, with slight modifications that allowed expanding the exercises and notes of Healing your life by Louis Hay, A Course in Miracles and the publication of endorphins: the hormones of happiness by José Miguel Gaona to abound in the subject.

At the end of the semester they were sent an online questionnaire to evaluate and find out the impact of this activity and its usefulness (Annex 2).

Results

The groups of the Biomathematics subject were made up of 52 students in the 2019A calendar and 42 students for the 2019B calendar. The course was taught three days a week, two hours each.

Talks

At the beginning of each class during the first 15 days except the first day in which the frame of the subject and the way of work and evaluation are explained. Each class developed a topic in a very compact way, it never exceeded 15 minutes of the class. The subject was taught and immediately afterwards asked what they knew about it.

For example, for the topic Difference between I AM and I am

Question What is the difference between I AM and I am?

The answers were very mechanical, definitions without context, without emotion, they only answered unanswered. "Being" they related to space, location and "I AM" they related to everything they were in relation to social data and academic degrees; I am Mexican, I am a woman, I am a student, etc. when what was really wanted is that they try to describe themselves in relation to their wishes and dreams, as human beings. The "I am" was developed as a temporality data of which they are seldom aware. I AM a dreamer who wants to live like this, I AM someone who likes to teach, I AM someone who likes to live and work. I am: "sick" "sitting" "tired" "studying". The objective was to make them aware of how they use words to describe or qualify themselves without thinking that it is not the best way to do it or that they do it without wanting this to be the case really, without intention. They are driven mechanically. For example, they say "I am stressed" they say it without thinking, they do not want to be stressed, but they declare it and this in turn pigeons them into "being stressed" and they do nothing else to move from that place and they remain stressed.

At the beginning of the class in which the aforementioned topics were included, the students' astonishment towards the topic was noted, they even had a hard time participating when they were asked questions, they answered with laughter and surprise, it seemed like a do with Biomathematics? " but they could quickly get their attention, they even showed more attention than other previous groups.

After 15 days, the subject stopped being developed, without prior notice. The students didn't say anything, the math class continued, then one of the students asked "Are you not going to see what you were giving us at the beginning of classes?", I replied, "I don't know, what Do you say? Is it necessary? They answered among others: "we don't have to reflect", "How do we know that we are doing well?", "No one gives us what we see there and it helps us to use our minds in another way", these are some of the responses received.

For the "start talks" for the 2019A group, the question was asked a week after they had stopped giving them and for the 2019B group immediately when the class did not start as usual they asked about the talks requesting more of them. The request was used to involve them in the second activity, "the mental diet" and the students were asked that those who were interested to register in the league that was provided to them in the WhatsApp of the "Biomate" group arranged for the group called "Mental Biomate Diet".

As a result of the exercises, the students emphasized the phrases or words that, in their perception, did not contribute to something positive from the work we did. They were more aware of the words they used and what they said was more thoughtful. Some even after having spoken, they said "if I was clear?" "Did I say it appropriately and with emotion? They were already more aware of what they were saying and how they expressed themselves. Maybe joke and joke at first, but then it was normal for the semester.

Some students were interested and asked for bibliographic references to continue their development on their own.

Regarding the question Did you like the strategy used?, The students of the 2019A calendar considered that they liked it by 70%, and those of the 2019B calendar liked it by 75%. For the question of whether they had reflected on their thoughts before in 2019A, 49% of students say that they had never reflected on what they think, while in 2019B 54% had not done it before.

In 2019A 2 students and in 2019B 2 students considered the activity useless and that it only took up effective time from the subject.

For the question, if they believe it necessary to include this type of activities in the classes, 70% of 2019A and 72% of 2019B consider that they should be included in the programs.

Mental diet

For the mental diet, 32 students from group 2019A (62%) and 27 students from group 2019B (64%) voluntarily signed up.

From the responses to the questionnaire, it was revealed that in 2019A only 32 were recorded and 10 that if they wanted to do it, they did not sign up because they forgot, 10 decided not to take it.

In 2019B, 27 signed up, 6 forgot to do so, and 9 decided not to participate.

Of the participants in the mental diet, 60% of 2019A consider that the activity contributed something to their lives, while in 2019B it was 80%. Among the contributions they mention that: "it improved their life", "it helped them to understand", "it gave them security" and "it gave them tools".

Contribution to the educational relationship and the learning process

This type of activities in my appreciation paid for more interaction with the students from as people. Suddenly talking about what we feel leads to better relationships and more trust in the teacher-student relationship. It is no longer just about what they "should do" what they "should learn" knowledge-assessment-qualification and distance between student and teacher.

In the daily deal there was more camaraderie and they remembered phrases and situations mentioned in the exercises and brought it to class. For example, when a student asked another for something in an inappropriate way, someone mentioned for example "it sounded like a demand, did I perceive that?" Immediately afterwards, the applicant student corrected the way he had done it and there were even apologies. Very interesting indeed. They are useful activities to start making better work environments. Create them by example, not just imposing or demanding. Many do not know how to do it any other way.

Recommendations to other academics

The times that are shared with the students are very important, you have a temporary relationship with them, very close, without realizing it, without becoming aware of the closeness with them, even for that short time and the teacher generally does not allows you to enjoy the activity of teaching and learning from each of the students, either inside or outside the classroom. In addition, students are educated and enjoy "going to school" in our hard science classes.

Annex 1. Content of the Mental Diet applied to Biomathematics students.

Day ONE We have no neutral thoughts

Day TWO Emotions and illness

DAY THREE Imagination

DAY FOUR Imagination and desire

DAY FIVE What you think determines the character of life

DAY SIX We are what we think

DAY SEVEN Reality and perception

DAY EIGHT Cause and effect

DAY NINE I don't make judgments

Day TEN Anticipate

DAY ELEVEN Only the good

DAY TWELVE Keep an eye on your internal conversations

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DAY THIRTEEN Thanks

DAY FOURTEEN Repent

DAY FIFTEEN Choose

Day SIXTEEN Move

Day SEVENTEEN Check

Day EIGHTEEN Live in the end

DAY NINETEEN Meditate

DAY TWENTY Assume

DAY TWENTY-ONE Persist, don't despair

Annex 2. Final evaluation questionnaire for students

Life Plan and SELF-REFLECTION Activity

During 15 days before starting the class, a few minutes of reflection were dedicated to the life plan with the topics: who am I? What wish from life? Understanding my thoughts and their relationship to emotions.

- 1- What was your perception of having worn it in class?
- 2- Did you like it? Yes / no explain
- 3- In your perception, was it useful or not? Please extend your answer beyond a simple YES or NO.
- 4- Do you think this type of activity is necessary in your professional training? Explain

On the other hand, a "Mental diet" group was formed on WhatsApp in which a brief explanation and a simple daily exercise were developed for each day for 21 days.

- 1- Were you part of this group?
- 2- Why did you or did you not include yourself in the group?
- 3- If you were part of the group, answer the following questions:

a) Did the activity add something to your life? Explain

b) What did it give you that you didn't have before?

c) Have you reflected before on the way you think? Explain

d) Did something change in your life?

Explain

e) What do you keep?

Conclusions

More than 50% of both groups perceived the reflections as positive and useful. Attitudinal change was perceived in the group during the work in the classroom and in the relationships between them during the activities. At least half of both groups mention that they have never reflected on their thoughts before and what they invest them on.

More than 50% of both groups signed up and participated in the mental diet shared by WhatsApp. Among the contributions that students mention to their lives, the ones that stand out the most by frequency are that: they improved their lives, gave them security and gave them personal tools.

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Labor paradigms expressed in a model of development and training of personnel for the productive sector

Paradigmas laborales expresados en un modelo de desarrollo y capacitación de personal para el sector productivo

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DOI: 10.35429/JHRT.2020.17.6.28.33

Received January 25, 2020; Accepted June 30, 2020

Abstract

Based on the results of an investigation "Alternatives of human development with labor qualification", attributes are extracted as inputs that the workers indicate as important in: job performance, training, human development and job reality expressed in task variability, job identity, importance of work, autonomy of functions and performance feedback. Integrated results reflect an innovative development and training scheme based on worker needs parallel to personnel administration. The integrated results reflect an innovative development and training scheme based on worker needs parallel to personnel management. Personnel development has four levels: 1st Strategic planning of work development. In this part, the organization reviews: job profiles, recruitment and selection techniques; 2nd Diagnosis of training and development needs: the employee's trajectory is evaluated from: induction, interview to visualize the worker's expectations, skills, attitudes and experience, a personalized business career design is built; 3rd Development and job training with an apprenticeship program: application in three strata: staff who make managerial decisions; employees of administrative, management and logistics services; line operators and maintenance services; 4th Context, work processes and aspects of the employee's personality, experience, work climate, type of work and level of command, nature of the work, high-performance collaborative tasks, operations management, production, technologies, etc.

Staff training

Resumen

En base a resultados de una investigación "Alternativas del desarrollo humano con habilitación laboral", los trabajadores señalan atributos importantes del desempeño laboral, capacitación, desarrollo humano y realidad laboral expresada en variabilidad de tareas, identidad laboral, importancia del trabajo, autonomía de funciones y retroalimentación del desempeño. Los resultados integrados reflejan un esquema innovador de desarrollo y capacitación basado en necesidades del trabajador paralelo a la administración de personal. Desarrollo de personal tiene cuatro niveles: 1º Planeación estratégica del desarrollo laboral. En ésta parte, se revisan en la organización: perfiles de puestos, técnicas de reclutamiento y selección; 2º Evaluación y diagnóstico de necesidades de capacitación y desarrollo: de la trayectoria del empleado desde: inducción, entrevista para visualizar expectativas, habilidades, actitudes y experiencia del trabajador, se construye un diseño de carrera empresarial personalizado; 3º Desarrollo y capacitación laboral con un programa de aprendizaje: aplicación en tres estratos: el personal que toma decisiones directivas; empleados de servicios administrativos, de gestión y logística; operarios de línea y servicios de mantenimiento; 4º Contexto, procesos laborales y aspectos de personalidad del empleado, experiencia, clima laboral, tipo de trabajo y nivel de mando, naturaleza del trabajo, tareas colaborativas de alto rendimiento, administración de operaciones, producción, tecnologías, etc.

Modelo capacitación de personal

Citation: SALINAS-AGUIRRE, María del Consuelo, HERNÁNDEZ-CUETO, Jaquelina Lizet, YAÑEZ-FLORES, Sara Margarita and EMILIANO-CASTILLO, Carlos Daniel. Labor paradigms expressed in a model of development and training of personnel for the productive sector. *Journal of Human Resources Training*. 2020. 6-17:28-33.

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Introduction

In "The structure of scientific evolutions" by Thomas Kuhn (1962), the paradigm concept was born, as "subjective lenses", which give a perspective of support to theories, ideas, concepts and thoughts expressed in models that reflect the reality of current scientific communities, which contributes to science with truths recognized as universal at a certain historical moment. Today, a paradigm is described, as a partial way of seeing the world, which simultaneously hides and prevents the perception of other qualities, Urzúa (2016). It becomes a Paradigm of Complexity with Morín (2000), he says, a paradigm is restricted when the disciplinary vision is particular and becomes generalized, by including multiple interdisciplinary or transdisciplinary perspectives.

The generalized complex paradigm of the proposal is to innovate the development of people, with an approach focused on the opinions that the worker claims to need, in addition to having a multidisciplinary perspective from pedagogy, personnel management, industrial psychology and total quality at work.

It is urgent to reinvent and change theories of personnel management to train and develop human resources in a diverse way, as an adaptation "a priori" and necessary to these drastic changes in the way of life that include reinvented business work, from environments virtual and with unthinkable ways of working, socializing, producing, marketing, etc. in the past.

An innovative model is proposed parallel to the administration of personnel to train and develop workers according to a diagnosis of needs expressed in an investigation of "Alternatives for human development with employment qualification" Salinas M.C. (2015). These results enriched with a non-experimental field research with opinion surveys of university workers and work experience of the researcher in the UAdeC's Senior Rectory Office for 10 years, where a Manual of the organization, job analysis and evaluation was carried out to job performance, these tools are constituted for implementation in a university staff database system (designed in Java language).

The methodological scheme of the staff development model is parallel and integrated to the functions of the human factor within organizations.

The methodology directly linked to the work processes is transformed into the "know how" for the development of people within the company according to the profile and work needs. An added value is presented when the worker's needs are satisfied, this translates directly into motivation and satisfaction at work, which results in optimal performance reflected in the quality of the product and service provided to consumers.

The interdisciplinarity and multidisciplinary educational work approach forms an amalgam of scientific disciplines that they intend to develop from a humanistic perspective, various authors contribute from 1991 to 2009, among them: Schultz D.P .; Martínez Izaguirre R .; Werther Werther W.B. and Davis K .; Hodgetts R. M. and Altman S. and Pérez S. U.

Methodology to be developed

The etiology of this training model for companies is, on the one hand, the research "Alternatives for human development with labor qualification" Salinas M.C. (2015), with a non-experimental, quantitative design, with a vertical cross-section, when collecting the data from a sample, a piloted instrument with a Cronbach Alpha of 0.92 is applied, the measurement of 6 signal variables to characterize the random sample of 210 subjects. employees in three public agencies (one is university), the questionnaire of nominal variables are grouped into three complex axes: personnel training, development needs at work and context and work environment, this last axis is based on studies of organizational behavior on constant variables from the work of Hodgetts RM and Altman S. The statistical treatment of descriptive analysis data is carried out with percentages and readings of means and indicators of central tendency. The correlational study is with Pearson and the multivariate one using the factorial method, the first 5 factors are analyzed with an explanation of 68% of the phenomenon, the first factor that refers to human attributes that matter to workers such as self-realization, but through transcending in social aspects, it presents a variance of 32.64 is the one with the highest eigenvalue.

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In addition to this research, an investigation carried out to the staff of the Autonomous University of Coahuila is taken as a basis, for the preparation of the Organization Manual with job profiles and another for Performance Evaluation that were the input of a computer system of human resources, prepared for the data administration of the Autonomous University of Coahuila, in the Mayor's Office of the Rectory (2000).

These two investigations integrated into the work experience acquired in personnel administration in the Subdirectorate of Senior Officials Office of the UAdeC, resulted in a model of personnel development and training based on the real needs of the workers of the university institution.

Results

The change from a traditional and obsolete paradigm of "safe work" with expectations of earning a living, conforming and suffering a job to maintain a hard life where the important thing is to meet the objectives to give economic results, accepting any opportunity with the philosophy "the end justifies the means" by Machiavelli, where you have to study and strive hard to control, anticipate and anticipate any setback and meet strategically planned short, medium and long-term goals. The current paradigm is one of dynamic and sustainable work with ecological perspectives, where independent professionals are rewarded, innovation and betting, visualizing, invoking and creating a dream, crystallizing changes with talents and service to others, the purposes are enjoyed and compromised. of persevering, flowing, collaborating, choosing constant and personal renewal, connecting and introjecting natural values in favor of the conservation of humanity.

The results of the descriptive analysis of the research "Alternatives of human development with work authorization" show workers that 64% have morning shifts, 21% evening shifts and 15% mixed; 78% are women, the rest are men in an age range between 18 to 78 years, the functions in most correspond to middle positions, which include office, service, supervision and management jobs.

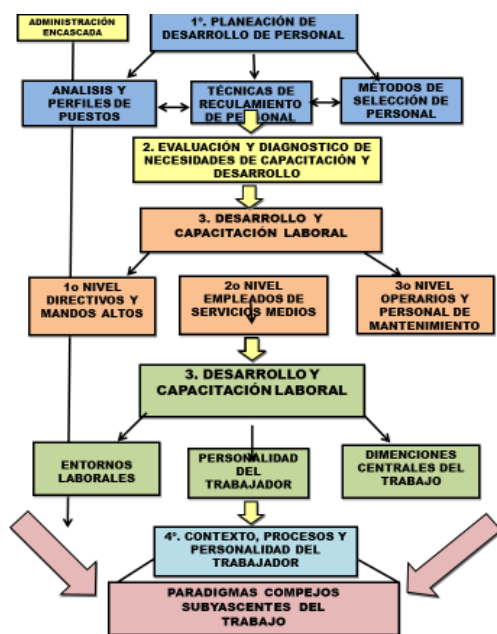
In the correlational and factorial analysis, personal aspects stand out in the foreground, as significant (with an r squared of 0.25), the variables of the axis "development needs at work", especially those of individual development. Second, culturally learned variables were found of importance for the workers, such as needs in personal development such as: giving results, orienting oneself to serve society, greater personal value is given to jobs related to jobs that involve reasoning functions, activities of the front and left part of the cerebral cortex such as; thinking, understanding and problem solving. In a second level of importance, the workers surveyed importance at work to tasks of the position linked to social and cultural learning such as prestige, hierarchies of command power, social status, responsibilities and obligations that imply dissemination, authority and social reputation before the community that they live.

What is relevant found in the field research carried out with a questionnaire to analyze and shape the university's job profiles is: 63% of workers give priority to relationships with peers over work, 76% opt for tasks in collaboration with peers, 56% prefer managerial and decision-making positions, 92% privilege people with studies, 54% do not like physical tasks, 27% feel they are less in maintenance and cleaning positions, 34% prefer to have work in other parties, 86% like parties and social gatherings, 82% are obedient to the boss's orders, 32% have more than one boss simultaneously, 22% are engaged in research, and 60% are bosses and 40% subordinates, for which the decision-making hierarchy is invested according to administrative theories, 89% are hired by acquaintances or relatives.

Annexes

Paradigm in the training model

Staff development and training paradigms



Acknowledgments

To the UAdeC staff who collaborated in supporting the application and answering of the investigations and to the directors for supporting personnel investigations.

Conclusions

The training model within the strategic administration of the institution has four levels or consecutive stages:

1st Strategic planning of work development. This part refers to the preparatory actions prior to establishing a career plan for the worker within the company. In this part, they are reviewed in the organization:

1.1. Analysis and job profiles. Investigate and document all job positions, delimiting key and auxiliary functions, as well as requirements to fill the position. The parts of the job function analysis are: 1.1.1. Identification of the worker with her generals. 1.1.2. Generic job description: it stipulates in summary the main function of the job position. 1.1.3. Job Specific Description: Critical actions required that are repeated to achieve job results.

1.1.4. Eventual description of the position: eventual tasks, which complement the work activities of that specific position. 1.1.5. Requirements of the position: studies, special knowledge or physical skills and previous experience essential to occupy the job.

1.2. Recruitment techniques. Apply the methods according to the required personnel and the potential to develop of possible candidates.

1.3. Personnel selection methods. Carry out the possible candidate: documentation, interviews and evaluation of experiences, vocation, knowledge, abilities, previous expectations, aptitudes, needs, opportunities to be trained, necessary psychometric and psychological studies.

2nd Assessment and diagnosis of training and development needs. Detection of opportunities from recruitment, selection, hiring, induction, specific evaluations for the position, interview of the candidate by the personnel department, an analysis of the candidate's trajectory will be carried out to prospect a future projection, such as development plan and permanence within of the organization. Expectations, motivations, experience are taken into consideration for the business career design.

3rd Development and job training. Carrying out a pedagogical intervention program with personalized learning programs with an application in three strata: 3.1. Level. Personnel who make senior management decisions. 3.2. Level. Middle service employees in job hierarchies, with administrative functions, management of resources / processes and operational logistics of the work. 3.3. Level. Production line operators and property cleaning and repair services.

4th Context, work processes and aspects of the employee's personality. The climate or work environment, in two aspects:

4.1. Environmental aspects of the environment: operational processes, nature of work, type of product or service, line of business, clients and suppliers, leadership styles, task logistics, labor administration systems, regulations of the collective bargaining agreement, hierarchical level of command, socioeconomic level of origin, public policies applicable to the institution or business, use of information and automation technologies, training and enrichment of the job, breadth and density of tasks, performance evaluation, system of rewards and incentives for staff, feedback performance, industrial safety, job stability, wage and salary system, medical care, occupational hygiene and ergonomic facilities appropriate to the type of work and quality of working life. 4.2. Worker personality, which includes: person and behavior style, skills, competencies, personal previous experiences, individual needs and expectations, collaborative attitudes, motivation towards work, job satisfaction, work and family affective relationships, conduct disorders, illnesses professionals, identification with the position, personal motivations, professional vocation, resilience and adaptation to changes, self-realization at work, initiative, creativity, autonomy, health and lifestyle.

To complement the work, consider in this new complex paradigm the strategic planning of the organization in terms of mission, vision and to implement the model, take into consideration the 4.3. Central dimensions of work. 4.3.1 Variety and enrichment at work, integrate the diversity of tasks into the job functions, as well as take care of the quality and density of workloads. 4.3.2. Identity with work, promoting emotional aspects of identification and attachment to the organization in workers. Implement meaning to work and recognize the importance of personal prestige and social status of work activities. 4.3.3. Autonomy of the worker, to allow innovation and creativity in work functions outside of what is already systematized and programmed at work. 4.3.4. Feedback, give performance evaluation results as areas of opportunity for development and necessary training courses, Hackman J. R. and Oldham G. R. (2005)

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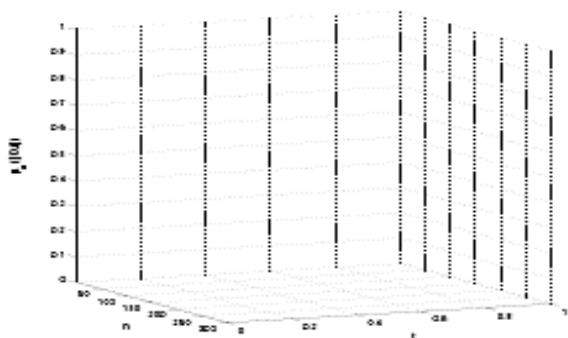
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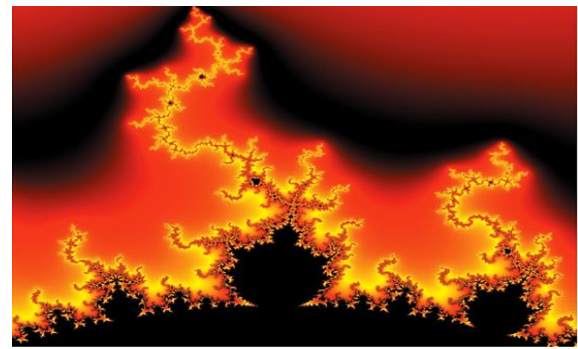


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Editor Responsibilities

The Publisher undertakes to guarantee the confidentiality of the evaluation process, it may not disclose to the Arbitrators the identity of the Authors, nor may it reveal the identity of the Arbitrators at any time.

The Editor assumes the responsibility to properly inform the Author of the stage of the editorial process in which the text is sent, as well as the resolutions of Double-Blind Review.

The Editor should evaluate manuscripts and their intellectual content without distinction of race, gender, sexual orientation, religious beliefs, ethnicity, nationality, or the political philosophy of the Authors.

The Editor and his editing team of ECORFAN® Holdings will not disclose any information about Articles submitted to anyone other than the corresponding Author.

The Editor should make fair and impartial decisions and ensure a fair Double-Blind Review.

Responsibilities of the Editorial Board

The description of the peer review processes is made known by the Editorial Board in order that the Authors know what the evaluation criteria are and will always be willing to justify any controversy in the evaluation process. In case of Plagiarism Detection to the Article the Committee notifies the Authors for Violation to the Right of Scientific, Technological and Innovation Authorization.

Responsibilities of the Arbitration Committee

The Arbitrators undertake to notify about any unethical conduct by the Authors and to indicate all the information that may be reason to reject the publication of the Articles. In addition, they must undertake to keep confidential information related to the Articles they evaluate.

Any manuscript received for your arbitration must be treated as confidential, should not be displayed or discussed with other experts, except with the permission of the Editor.

The Arbitrators must be conducted objectively, any personal criticism of the Author is inappropriate.

The Arbitrators must express their points of view with clarity and with valid arguments that contribute to the Scientific, Technological and Innovation of the Author.

The Arbitrators should not evaluate manuscripts in which they have conflicts of interest and have been notified to the Editor before submitting the Article for Double-Blind Review.

Responsibilities of the Authors

Authors must guarantee that their articles are the product of their original work and that the data has been obtained ethically.

Authors must ensure that they have not been previously published or that they are not considered in another serial publication.

Authors must strictly follow the rules for the publication of Defined Articles by the Editorial Board.

The authors have requested that the text in all its forms be an unethical editorial behavior and is unacceptable, consequently, any manuscript that incurs in plagiarism is eliminated and not considered for publication.

Authors should cite publications that have been influential in the nature of the Article submitted to arbitration.

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