Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

https://doi.org/10.23913/ride.v12i23.1031

Artículos científicos

Hacia una evaluación docente universitaria por competencias

Towards a University Teacher Evaluation by Competencies

Rumo a uma avaliação do professor universitário por competências

Alma Lilia Sapién Aguilar
Universidad Autónoma de Chihuahua, México
lsapien@uach.mx
https://orcid.org/0000-0001-7222-2612

Laura Cristina Piñón Howlet
Universidad Autónoma de Chihuahua, México
lpinon@uach.mx
https://orcid.org/0000-0002-1176-2567

Silvia Patricia Aguirre Espino
Universidad Autónoma de Chihuahua, México
saguirr@uach.mx
https://orcid.org/0000-0003-2860-874X

Luis Antonio Molina Corral
Universidad Autónoma de Chihuahua, México
lmolin@uach.mx
https://orcid.org/0000-0002-3217-6460

Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Resumen

La evaluación de competencias docentes es un proceso necesario para mejorar la calidad educativa de nivel superior. El objetivo de la presente investigación fue analizar las competencias docentes de la plantilla de profesores de la Facultad de Contaduría y Administración (FCA) de la Universidad Autónoma de Chihuahua (UACH). La investigación fue de naturaleza cuantitativa; el diseño fue no experimental, transeccional descriptivo, y el muestreo fue probabilístico. Para ello, además, se realizaron consultas bibliográficas e investigación de campo. Así, con una muestra de 230 docentes, se describió y analizó la situación actual de las competencias docentes en la FCA. Los principales resultados señalan la necesidad de implementar programas de capacitación adecuados a los docentes, ya que se cuenta con áreas de oportunidad que se deben fortalecer, así como tomar en cuenta la influencia que ejercen la edad y la situación laboral de los docentes.

Palabras clave: competencia docente, evaluación docente, universidad.

Abstract

The evaluation of teaching competencies is a necessary process to improve the quality of higher education. The objective of this research was to analyze the teaching skills of the teaching staff of the Faculty of Accounting and Administration (FCA) of the Universidad Autónoma de Chihuahua. The research was quantitative in nature; the design was non-experimental, cross-sectional descriptive, and the sampling was probabilistic. For this, in addition, bibliographic consultations and field research were carried out. Thus, with a sample of 230 teachers, the current situation of teaching competencies in the FCA was described and analyzed. The main results indicate the need to implement appropriate training programs for teachers, since there are areas of opportunity that must be strengthened, as well as taking into account the influence of teachers' age and employment status.

Keywords: teacher competence, teacher evaluation, university.

Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Resumo

A avaliação das competências docentes é um processo necessário para melhorar a qualidade do ensino superior. O objetivo desta pesquisa foi analisar a capacidade docente do corpo docente da Faculdade de Contabilidade e Administração (FCA) da Universidade Autônoma de Chihuahua (UACH). A pesquisa foi de natureza quantitativa; o delineamento foi não experimental, transversal descritivo e a amostragem foi probabilística. Para tanto, foram realizadas consultas bibliográficas e pesquisas de campo. Assim, com uma amostra de 230 professores, foi descrita e analisada a situação atual das competências docentes na FCA. Os principais resultados apontam para a necessidade de implementação de programas adequados de formação de professores, uma vez que existem áreas de oportunidades que devem ser fortalecidas, bem como levando em consideração a influência da idade dos professores e da situação de emprego.

Palavras-chave: competência docente, avaliação de professores, universidade.

Fecha Recepción: Enero 2021 **Fecha Aceptación:** Septiembre 2021

Introduction

The activity of the teacher implies the commitment to have the necessary, sufficient and pertinent competencies to carry out quality education in Mexico, as well as to face the challenges and opportunities that it presents. Teachers have a social responsibility to contribute to the training of students, a comprehensive and humanistic type, through skills that go beyond the professional. For this, the teaching-learning process must make sense for both students and teachers themselves.

Currently, the educational institution is no longer the only channel through which new generations come into contact with knowledge and information (García and Vaillant, 2010). Therefore, teachers require new training scenarios. Teaching practices must be updated in both content and form. The figure of the teacher must now be that of an intermediary between the content and the students, taking into account the diversity of situations in which they are immersed. Now perhaps more than ever, the development of in-service teachers and the training of the new generation of academics are issues of the utmost importance (Brunner, 1994). The educational method, in Latin America and around the world, is energetically impacted by the phenomenon of globalization and the new knowledge society. The educational models and technologies used are growing in terms of plurality and capacity (Inche and Chung, 2012).

Today, education must focus even more on each individual actively developing their own competencies, which involves a stimulus to imagination and creativity, as well

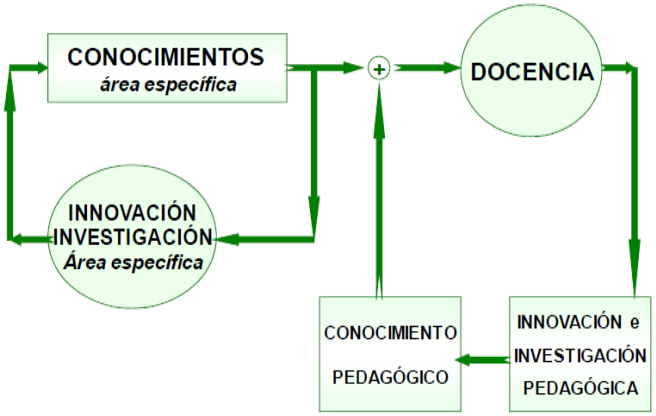
as critical thinking and problem solving that demand the current and future context (Carrera and Marín, 2011). To consummate the development of the student and improve its educational quality, the teacher needs experience, knowledge and interaction between those involved, between him and him.

At present, higher education systems are facing strong mandates to raise the quality of their teaching to the extent that it has become their strategic priority. The discussion about educational models based on competence norms and their performance to improve the relationship between education and functioning are focusing on the need to promote a greater level of flexibility in educational systems. Consequently, in the strategies of different countries the integration of diverse interactive subsystems can be observed; Of great interest are the modular educational plans and the accreditation processes to use the educational offer flexibly in unequal times and spaces. (Rojas, 2000).

You have to be prepared in terms of teaching-learning processes to develop as a university teacher. The accreditation of the institution and its different careers is an aspect of great importance, although it is also the supervision of teaching and how it is imparted, in addition to evaluating pedagogical methods and pedagogical strategies. Thus, the quality of learning in the different educational spaces is ensured (Montenegro and Fuentealba, 2010). The evaluation processes respond to determined purposes that lead to an end in accordance with the nature of their objectives. It is a predominantly human action where there is a degree of subjectivity with the subjects involved in this process (Fernández, Díaz & Leyva, 2016). In addition, the teacher must assess his knowledge and choose the highlights, methodologies and the best time to carry out the evaluation (Mas and Olmos, 2016). In addition to the external evaluation, aimed at professional development, a teacher self-evaluation is necessary (Marchesi and Pérez, 2018).

Behind the institutional scenes, it can be seen that permanent teacher training is in demand, but it is vital to know in which areas of the teaching-learning process they should be applied. For which, it is vital that the target teaching competencies are known, as well as having a parameter of their current state to be aware of which ones require more training work. It should also be considered a feedback for the university teacher, according to Mas (2011), whose flow is presented below in figure 1.

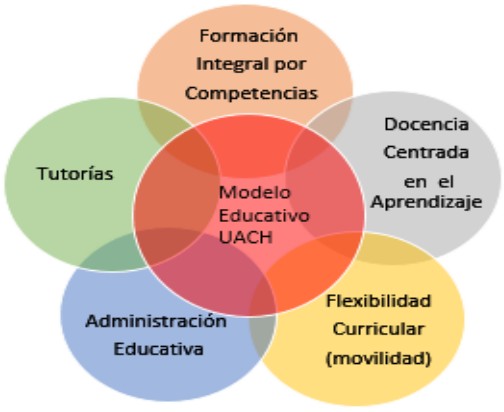
Figura 1. Retroalimentación del docente universitario



Fuente: Tomado de "El profesor universitario: sus competencias y formación" (p. 11), por Ó. Mas, 2011, *Profesorado. Revista de Currículum y Formación de Profesorado*, 15(3).

Now, starting in the 90s, the teachers of the Faculty of Accounting and Administration (FCA) of the Autonomous University of Chihuahua (UACH) began to be guided by the educational model based on learning-centered competencies. It should be noted that the organization of this approach is based on four different pillars: philosophical, conceptual, psychopedagogical and methodological (Marín, 2003). This educational model, presented in Figure 2, considers that every human being has a great series of capacities that can be developed when they show an interest in learning.

Figura 2. Modelo educativo



Fuente: Tomado de El modelo educativo de la UACH: elementos para su construcción, por R. Marín, 2003, México: UACH/Dirección académica.

Together, it places the curricular design and redesign by competencies from an open and flexible perspective, together with the accompaniment of the student through tutorials and an educational management focused on change. The theoretical approach

used in the teaching competencies includes the three knowledge Tobón (2004) talks about: knowing how to be, knowing how to know and knowing how to do.

In relation to the constant demand towards universities to provide quality education, the evaluation of teaching competencies is an essential part in order to improve this requirement. Above all, one must understand and be aware of what the role of the teacher is and how her performance is found. Therefore, the following research questions arise: 1) what is the analysis of the university teacher evaluation by competencies ?; 2) is it possible to highlight the training needs of teachers? And 3) is there an influence of age and employment status on teacher performance?

The general objective of this research was to analyze the evaluation of teaching competencies in the FCA of the UACH. The specific objectives were: 1) to analyze the university teacher evaluation by competencies; 2) highlight the training needs of teachers in the different dimensions into which competencies are divided, and 3) find if there is an influence of age and employment status on teacher performance.

Theoretical framework

A few decades ago it was enough for academics who educated in universities to be experts in their subjects; student learning was seen as a minor issue (Ashwin, 2006). However, today it is expected that academics and others involved in professional training are prepared to play their role as educators both in the teaching-learning processes and in the content they instruct.

Teaching, as previously mentioned, is one of the evaluation criteria for the accreditation of professional careers and their programs. As part of this, pedagogical methods and teaching-learning strategies are evaluated, as well as the results obtained in the use of these methodologies, with the intention of affirming or corroborating the quality of learning in these educational spaces (National Commission of Accreditation of Chile, 2016). Likewise, the competences linked to the management of teaching and its resources, as well as the social ones, those that benefit actions of cooperation, leadership and teamwork. Finally, the affective competencies that guarantee attitudes, behaviors and motivations that support the responsibility and commitment of teaching with the training objectives (Toro, Saldarriaga, León, Martínez and Arias, 2015).

In the formation of competencies, responsibility includes educational institutions and also society, the business labor sector, the family and the person involved, that is, the student (Tobón, 2004). In the institutions, in practice, one of the main criteria continues to be the connection and specialization of teachers with the discipline to be taught, leaving

aside pedagogical training. This dynamic means that university teaching focuses on the teaching of disciplines, not giving adequate importance to processes such as training by competencies and the use of information and communication technologies (ICT). Obviously, it is not feasible to require that all these competencies be given in one person, so it will be necessary to have work teams in which specialization in some of them may occur.

Whatever educational model is applied in a university institution, planning is an important element as a basic function of the teaching-learning process. Technological skills are also a factor of social change since they contribute to the expansion and diversification of education. The competency model has revealed a series of requirements that were not used before or were not taken into account: knowledge, know-how, knowing how to be and knowing how to be. The teacher becomes a main and transforming actor in this process through which, it is intended, students become integral subjects, with the ability to function in a world that changes at a speed previously unseen, quickly and constantly, in addition to possessing the knowledge, skills and dexterity to be competitive in a globalized environment (Durán, 2016).

A reference that is worth keeping in mind is the holistic model of teaching competence for the digital world by Esteve, Castañeda and Adell (2018), which is made up of six components: 1) expert in digital pedagogical content, 2) generator and manager of emerging pedagogical practices, 3) able to use ICT to expand their relationship with the family and the environment with the student, 4) increased reflective practice, 5) expert in enriched learning environments and 6) sensitive to the use of technology from the perspective of social commitment. A single model cannot accurately detail all the possible teaching tasks at all educational levels, therefore, the model develops the teaching function within formal education at a pre-university level. In this model, the teacher is a professional committed to his profession and to the environment in which he operates.

Higher-level teachers must have the skills, knowledge, attitudes, and values necessary to deliver quality instruction. In addition, they must successfully undertake the problems that teaching implies, such as reflecting and building knowledge with the application of the three aforementioned knowledge of Tobón (2004). Professional knowledge can be interpreted as a model that explains the professional knowledge or theories that guide action; in the same way, it is guided by scientific and subjective theories that are poorly developed in the training and research process (Cuadra, Castro and Juliá, 2018).

The evaluation of teaching in Mexico is considered a process that is carried out by higher-level institutions for administrative purposes. Externally, evaluation bodies are used, which grant accreditations, and teacher training programs. Internally, it provides information for decision-making and financial incentives to teachers. In academic matters, the information serves to provide training and updating to teachers, yes, however, the results and needs to improve pedagogical skills in terms of planning, conducting and evaluating learning are not linked to training for quality education (Marín, Guzmán, Márquez and Peña, 2013).

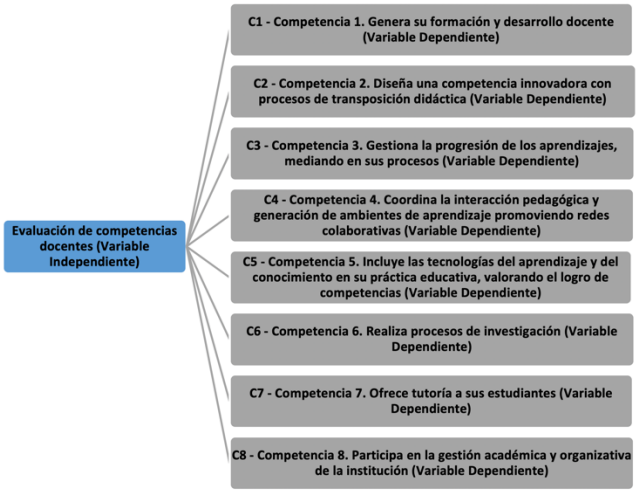
The progression of the model by competencies in higher education is intended to promote the development of these in university graduates, according to Dios, Calmaestra and Rodríguez (2018). The identification of competencies in teachers allows building the competency profile. These are considered here as they are described in the model for the development and evaluation of academic competencies (DECA) validated by Guzmán, Marín and Inciarte (2014). Teaching knowledge is plural and unfolds towards different dimensions, which feed back and update each other. The questions that should guide teaching work today are what skills the 21st century demands and what citizens do we want and need? (Fondo, 2019).

Methodology

The nature or focus of the research was quantitative of the applied type. Likewise, it was transectional or transversal. The research work was carried out at the FCA of the UACH. The type of sampling was probabilistic. The design was non-experimental, in the field, supported by consulting electronic sources. For the validation of the strategy, data collection was used by applying the instrument, which contains general data and eight teaching competencies divided into four dimensions; in total, 44 questions were closed to be measured with a Likert scale constructed from the following values: 0 = Not at all, 1 = Little, 2 = Fair, 3 = Fairly, 4 = Excellent; and multiple choice for general data. The information collection was carried out in Excel and the coding for the statistics was carried out using SPSS version 22 software. The instrument yielded a Cronbach's alpha of 0.930 acceptance. The validation process of the items, meanwhile, was based on univocity and relevance indices, whose results were positioned at levels from 0.90 to 1.00, where the range of the maximum value is one and the minimum zero (Carrera, Vaquero and Balsells, 2011). The instrument used was taken from a survey prepared by Valles et al. (2017) during an investigation carried out on teaching competencies at the UACH.

Stratification sampling was carried out, dividing the population into strata based on the age and employment status indicators obtained from the general data of the applied instrument. Then a cluster or hierarchical conglomerate analysis was carried out to establish groups based on a set of variables that, in this case, were the evaluation of the performance of teaching competencies by dimensions developed in the FCA of the UACH with respect to age groups and employment status. The number of groups, their description and validation, in addition to the cluster graph by dendrogram, were determined. Afterwards, the k-means analysis was carried out and, finally, a gap analysis was made that served to corroborate the result from the collected data and compare the performance developed with the expected or ideal performance, all of which contributed to the design of a strategy. The independent variable analyzed was the evaluation of teaching competencies (cause), which was not manipulated. While the dependent variables (effect) were the eight different competences that were divided into the following dimensions: Teaching, Research, Tutoring and Management (figure 3). The sample consisted of 230 participants and was calculated with a confidence level of 95%.

Figura 3. Variables



Fuente: Elaboración propia

Results

Primarily, in order to evaluate the competencies developed by the teachers of the FCA of the UACH, it is assumed that these competencies are divided into four dimensions, namely: Teaching, Research, Tutoring and Management.

The internal consistency reliability of the instrument was estimated using Cronbach's alpha, which reported acceptable results ($\alpha \geq 0.70$), taking as criteria the

recommendations of George and Mallery (2003, cited in Hernández and Pascual, 2018). The instrument proved to be consistent in validity and reliability as shown in Tables 1 and 2.

Tabla 1. Escala: confiabilidad

		N	%
Casos	Válido	227	98.7
	Excluidos[a]	3	1.3
	Total	230	100.0

[a] La eliminación por lista se basa en todas las variables del procedimiento. La exclusión de tres participantes fue debido a que las respuestas estuvieron fuera de los valores en la escala de Likert propuestos para el instrumento.

Fuente: Elaboración propia

Tabla 2. Estadísticas de fiabilidad

Alfa de Cronbach	Alfa de Cronbach basada en elementos estandarizados	Número de elementos
0.930	0.934	44

Fuente: Elaboración propia

The random sampling by stratification is presented in tables 3 and 4, where the frequency of the age and employment status indicators is shown.

Tabla 3. Edad

		Frecuencia	Frecuencia acumulada
Válido	De 20 a 29 años	26	26
	De 30 a 39 años	54	80
	De 40 a 49 años	60	140
	De 50 a 59 años	57	57
	De 60 a 69 años	30	87
	Total	227	227
Perdidos	Sistema	3	1.3
Total		230	100.0

Fuente: Elaboración propia

The next step is to multiply the cumulative frequency from 40 to 49 years by the coefficient, which is equal to the sample size among the population, 230/543 = 0.42 × 140 = 59, that is, the size of the random sample by stratification . Whereas, for the cumulative frequency of 60 to 69 years, the random sample by stratification is 37. And when merging them, there remains a random sample by stratification of 96.

Tabla 4. Situación laboral

		Frecuencia	Frecuencia acumulada
Válido	Profesor de tiempo completo	33	33
	Profesor de hora clase	129	129
	Administrativo	26	155
	Contratado	36	191
	Técnico	1	192
	Profesor de medio tiempo	2	194
	Total	227	227
Perdidos	Sistema	3	1.3
Total		230	100.0

Fuente: Elaboración propia

Next, the cumulative frequency of 33 full-time teachers is multiplied by the coefficient, which is equal to the sample size among the population, 230/543 = 0.42 × 33 = 14, that is, the random sample size times stratification. While for the cumulative

frequency of class, administrative, contract, technical and part-time teachers, the random sample by stratification is 83. And when merging them, there remains a random sample by stratification of 97.

For the analysis of clusters or hierarchical conglomerates, three homogeneously conformed groups were obtained by means of a dendrogram that uses Ward's linkage; In the cluster characteristics by dimensions, the highest scores are three and four, so they have a positive inclination towards the question and scores of one to two. Thus, cluster one belongs to teachers who only have a positive inclination in five of the indicators of the Teaching dimension, while in the other dimensions their inclination is low. In cluster two, they are teachers with a positive inclination in all indicators of all dimensions, and finally, cluster three has a positive inclination in almost all indicators of the Teaching dimension; There is only an exception in two indicators, for the Research dimension it only has a positive inclination in two indicators and a low inclination for the Tutoring and Management dimensions. The characteristics of group three were high in score of the variables regarding the performance of the teaching competencies of the Teaching dimension in six of the 17 indicators. Group two scored high on the competencies of all dimensions. And finally, group three has 15 of the 17 indicators with high-level evaluations of the competencies of the Teaching dimension. It should be noted that group two consisted of 23 study subjects, of which 15 belong to an age of 50 years or more and eight belong to the age of 49 years or less. Of the total sample of 230, 62% belong to the second group, while 38% are subjects 50 years of age or older. Therefore, age influences the evaluation of teacher performance in all dimensions. Regarding the influence that the employment situation may have on teaching performance, the calculation of k-means was carried out and it resulted, according to the analysis of variance (Anova), that the variable has contributed significantly to the discrimination in the cluster, as well as that the distances are separated in the centers (Table 5). And finally, in cluster two are the teachers who have a more positive inclination in all the indicators of all dimensions. So the form of hiring or employment situation also influences the performance of teachers.

Tabla 5. Distancias entre centros de clústeres finales

Clúster	1	2	3
1		8.142	5.663
2	8.142		7.111
3	5.663	7.111	

Fuente: Elaboración propia

The clusters have differences between the employment situation of full-time teachers and the other forms of hiring.

Tabla 6. Número de casos en cada clúster

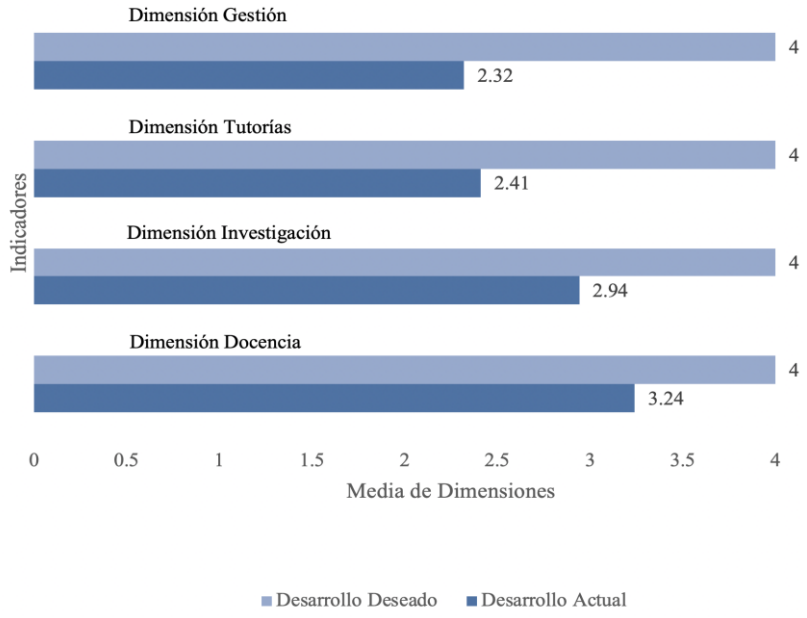
Clúster	1	15.000
	2	51.000
	3	31.000
Válido		97.000
Perdidos		.000

Fuente: Elaboración propia

Table 6 shows the membership of the number of cases in each of the clusters.

Figure 4 shows the result of the gaps in the different dimensions to assess teaching skills.

Figura 4. Dimensiones Docencia, Investigación, Tutorías y Gestión



Fuente: Elaboración propia

The evidence collected in the theoretical framework makes mention that the different dimensions are not just a wish, but a requirement of the university teaching profile. In the analysis of the results, it can be observed that there are important areas of opportunity, especially in research, mentoring and management. In the analysis of gaps on dimensions, it can be seen that the Teaching dimension is the best evaluated, since it has an average score of 3.24 out of 4, the maximum expected value. In addition, some characteristics of the Research dimension have been identified, such as conducting and directing research, although not so much in publication, collegiate work and international collaboration. The score in this dimension is 2.94 out of 4, the maximum expected value, so training in this area is necessary. Regarding the Tutoring and Management dimensions, the area of opportunity is greater, since they only have 2.41 and 2.32, respectively, of the expected optimum already mentioned.

Discussion

The competency model has revealed the transformation that the teacher's profile has undergone, a set of requirements that were probably not used before, such as the knowledge of Tobón (2004), where knowledge, being and being are combined. be, among other aspects that are currently considered essential and unavoidable for the new generations that are demanding new conditions towards the preparation of the emerging model (Durán, 2016). In the Teaching career at the Escuela Universitaria de Magisterio (Escuni), in Madrid, Spain, four specific competences of disciplinary and professional training common to all teacher profiles are identified: cognitive competence (knowing), functional competence (knowing do), personal competence (knowing how to be) and ethical competence (knowing how to be). The objectives stated by the European Union, as well as undergraduate degrees, are aimed at providing the university student not only with knowledge, but also strategies to continue learning and training throughout life (Megía, 2016). It is important to emphasize that any competence is a complex knowing how to act, where the important thing is not the resources, but the way in which the person harmonizes, forms, activates a great variety of resources, intrinsic and extrinsic, to act in a variety of situations. It is a complex, multidimensional concept, so identifying the most outstanding features that characterize it helps to unravel its true dimension and scope, and favors its correct use (Ruiz y Aguilar, 2017).

Teacher evaluation is one of the most important factors to improve educational quality. Therefore, an external evaluation aimed at professional development is necessary in close connection with the usual self-evaluation of the teachers themselves (Marchesi and Pérez, 2018). Currently, for educational practice, competence is a word that can be perceived more as a fashion, an ideal, than as a point of view through which it is possible to situate learning, since its definition leads to confusion and ambiguity. For this reason, its instrumentation is given in a wrong way, as well as its planning, implementation and evaluation criteria in the educational field, which is why it is very significant that the university teacher, being the forger of professionals, has pedagogical clarity of it (Rojas, Luna and Hernández, 2018).

From the Bologna process in Italy, a new organization of academic activity began to be required to undertake, within the social framework of information and knowledge, the challenges arising from innovation. The integration of competences in higher-level studies provides a basic element to help the formation of a society in constant change, which constantly reformulates its demands and aims to make university training more professional by linking the university, society and the workplace. In the coming years, the teacher must achieve a series of competencies that allow him to attend and solve problematic situations related to a practice that creates change, through professional development, with the possible reconstruction of reality and a personal and professional positioning. cash. Therefore, it is timely to overcome a type of academic and commercial visualization of teaching work, and promote a teaching-learning model based on reflection and self-criticism about practice, and thus lead the teacher to question their own professional practice. In addition, he must know the courses he teaches and how he must instruct the students, therefore, he demands scientific and educational technical knowledge in his professional activity, as well as analysis and reflection skills, understanding and application of the process through teaching skills (Palacios, López y Fraile, 2019).

The analysis of one's own perception serves to measure competence based on allegations and feelings of the same subject, and in this way face the certification tests that organizations seek to accredit (Durán, Prendes and Gutiérrez, 2019). A profile in accordance with social, cultural and labor demands implies that all professionals acquire sufficient skills to adequately develop the occupations around their job. This need is confirmed in the structuring of the different professional profiles and it is the duty of higher education to satisfy it, since the impact of their work activities and the importance

that this has in achieving a more equitable and just society must be taken into account. all people (García and Aznar, 2019).

An integration of scenarios similar to the real one constitutes the evaluation of teaching competencies. There are models that provide guidelines for the creation of teacher performance evaluation instruments that provide the necessary evidence of validity, but not great fidelity in Mexico. Validity consists of the level to which evidence and theory support the ways of interpreting the results in a test for the presented uses of an assessment. More systematic, methodical and comprehensive evaluation tools are required, in addition to the models currently under evaluation (Lobato, Alpuche, Trejo and Martínez, 2019). Analyzing and identifying strategies that contribute to promoting mentoring programs is a key factor in educational quality. This is a difficult matter because it requires the collaboration not only of the educational system itself and of the study plans, but also of all the agents involved and collaborating institutions (Megía, 2016). In the research carried out by the FCA at the UACH, strategies have also been identified to achieve the potentialization of teachers in the development of their profession, based on the skills necessary to carry out their performance in the institution, in addition to complying with certification processes.

Conclusions

The FCA of the UACH is working on the constant training of teachers in a systematic way. The definition of the teaching competencies profile that has been evaluated will contribute significantly to strengthening the teaching staff, by integrating innovations in a training program that emerges from this study, since this research will also have repercussions as a diagnostic instrument that aims to generate better educational practices. Higher-level education must evolve to be of better quality; not only innovation is necessary, but also reinforcing the areas that should be consolidated. It is a commitment to students and the community in general, since future professionals must leave prepared for the performance of their professional activities, but they must also be responsible citizens and committed to the society in which they live. In the same way, it is also a commitment of the educational institution with its teachers.

Based on the data presented, it is necessary to develop training plans specifically aimed at the different stages of professional life. Training plans aimed at new teachers and those who are more experienced, follow-up plans and innovation to the experience already acquired and also in the different training and development needs that are required in the dimensions in which the teaching work is made up and Its performance. Here

specific needs were detected in the Teaching dimensions, which is the best evaluated, followed by the Research dimension; the most lagging behind, that of Tutoring and Management, where the opportunity to develop is more extensive and urgent.

Recommendations

After conducting a teacher competency assessment analysis, there is an area of opportunity on teacher training and development. A need to involve the teaching staff at the research level is highlighted, as well as to combat a significant lag in mentoring and management, since it presents a deficiency that must be addressed. It is also recommended that these trainings be carried out involving teachers of all ages and forms of work situation, where they coexist and share all the experiences and innovations among fellow teachers, to raise the educational quality of the institution and for the benefit of all.

Study limitations

There is the limitation of the change in the educational model that was implemented in August 2019, and the information used here corresponds to the previous model. However, it should be noted that, although there are some changes in the educational model in the FCA of the UACH, it will continue to include competencies.

Future lines of research

Evaluate teaching skills periodically to generate strategies and actions to train teachers in areas of opportunity.

References

Ashwin, P. (2006). *Changing Higher Education. The Development of Learning & Teaching*. London, England: Routledge.

Brunner, J. J. (1994). *Educación superior en América Latina: una agenda de problemas, políticas y debates en el umbral del año 2000*. Buenos Aires, Argentina: Consejo Latinoamericano de Ciencias Sociales.

Carrera, C. y Marín, R. (2011). Modelo pedagógico para el desarrollo de competencias en educación superior. *Revista Electrónica Actualidades Investigativas en Educación*, 11(1), 1-32.

Carrera, F., Vaquero, E. y Balsells, M. (2011). Instrumento de evaluación de competencias digitales para adolescentes en riesgo social. *Edutec. Revista Electrónica de Tecnología Educativa*, (35), 1-25. Recuperado de https://www.edutec.es/revista/index.php/edutec-e/article/view/410.

Comisión Nacional de Acreditación de Chile (2016). Criterios de evaluación para la acreditación de carreras profesionales, carreras profesionales con licenciatura y programas de licenciatura. Recuperado de www.cnachile.cl /Paginas/Acreditacion-Pregrado.aspx.

Cuadra, D, Castro, P. J. y Juliá, M. T. (2018). Tres saberes en la formación profesional por competencias: integración de teorías subjetivas, profesionales y científicas. *Formación Universitaria*, *11*(5), 19-30. Recuperado de https://dx.doi.org/10.4067/S0718-50062018000500019.

Dios, I., Calmaestra, J. y Rodríguez, A. (2018). Validación de la escala de competencias docentes organizacionales y didácticas para educadores. *Revista Mexicana de Investigación Educativa*, *23*(76), 281-302.

Durán, A. A. (2016). Formación en competencias del docente universitario. *Educere*, *20*(67), 529-538.

Durán, M., Prendes, M. y Gutiérrez, I. (2019). Certificación de la competencia digital docente: propuesta para el profesorado universitario. *RIED. Revista Iberoamericana de Educación a Distancia*, *22*(1), 187-205.

Esteve, F., Castañeda, L. y Adell, J. (2018). Un modelo holístico de competencia docente para el mundo digital. *Revista Interuniversitaria de Formación del Profesorado*, *32*(1), 105-116. Recuperado de https://dialnet.unirioja.es/servlet/articulo?codigo=6441415.

Fernández, L., Díaz, L. y Leyva, E. (2016). Competencias genéricas en docentes del nivel superior en el Estado de Guerrero. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *6*(12).

Fondo, M. (2019). Seis competencias docentes clave para el siglo XXI. *marcoELE. Revista de Didáctica Español Lengua Extranjera*, (29), 1-14.

García, Z. y Aznar, I. (2019). El desarrollo de competencias investigativas, una alternativa para formar profesionales en pedagogía infantil como personal docente investigador. *Revista Electrónica Educare*, *23*(1),1-22.

García, C. M. y Vaillant, D. (2010). Desarrollo profesional docente: ¿cómo se aprende a enseñar? (Vol. 115). Narcea Ediciones.

Guzmán, I., Marín R. e Inciarte, A. (2014). *Innovar para transformar la docencia universitaria. Un modelo para la formación de competencias*. Maracaibo, Venezuela: Universidad del Zulia.

Hernández, H. A., y Pascual, A. E. (2018). Validación de un instrumento de investigación para el diseño de una metodología de autoevaluación del sistema de gestión ambiental. *Revista de Investigación Agraria y Ambiental*, *9*(1), 157-164. Recuperado de https://doi.org/10.22490/21456453.2186.

Inche, J. y Chung, A. (2012). Estudio prospectivo para la enseñanza superior virtual al 2030. *Industrial Data*, *15*(1), 120-126. Recuperado de https://doi.org/10.15381/idata.v15i1.6260.

Lobato, V. M., Alpuche, H. A., Trejo, M. J. y Martínez, G. A. (2019). Desarrollo de evidencias de validez de una prueba de desempeño sobre competencias docentes: EDOE. *Investigación en Educación Médica*, *8*(29),45-57.

Marchesi, Á. y Pérez, E. M. (2018). *Modelo de evaluación para el desarrollo profesional de los docentes*. Madrid, España: Fundación SM.

Marín, R. (2003). El modelo educativo de la UACH: elementos para su construcción. México: UACH/Dirección académica.

Marín, R., Guzmán, I., Márquez, A. y Peña, M. (2013). La evaluación de competencias docentes en el modelo DECA: anclajes teóricos. *Formación Universitaria*, *6*(6), 41-54.

Mas, Ò. (2011). El Profesor Universitario: sus competencias y formación. Profesorado. Revista de Currículum y Formación de Profesorado, 15(3),195-211. ISSN: 1138-414X. Disponible en: https://www.redalyc.org/articulo.oa?id=56722230013

Mas, Ò. y Olmos, P. (2016). El profesor universitario en el espacio europeo de educación superior. La autopercepción de sus competencias docentes actuales y

orientaciones para su formación pedagógica. *Revista Mexicana de Investigación Educativa*, *21*(69), 437-470.

Megía, C. (2016). *Competencias del profesor mentor del aprendiz de maestro. Una propuesta de formación*. (Tesis de doctorado). Universidad Nacional de Educación a Distancia.

Montenegro, H. y Fuentealba, R. (2010). El formador de futuros profesionales: una nueva forma de comprender la docencia en la educación superior universitaria. *Calidad en la Educación*, (32), 253-267.

Palacios, A., López, V. y Fraile, A. (2019). Cuestionario de percepción de competencias docentes de Educación Física. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, *19*(75).

Valles, H., Parra, H., Guzmán, I., Marín, R., Delgado, C., Marín-Trejo, R., Avitia, Y., Arias, R., Piñón, L., Gutiérrez, M.C., Sapién, L., Soto, M. y Franco, P. (2017). *Competencias académicas del profesor universitario*. Chihuahua, México: Universidad Autónoma de Chihuahua.

Rojas, A., Luna, J. y Hernández, I. (2018). Competencias docentes transversales para el quehacer de profesores de pregrado en Psicología. *Educación y Educadores*, *21*(3), 461-481. Recuperado de https://educacionyeducadores.unisabana.edu.co/index.php/eye/article/view/8506.

Rojas, I. (2000). La educación basada en normas de competencia (EBNC) como un nuevo modelo de formación profesional en México. En Valle, M. (coord.ª), *Formación en competencias y certificación profesional* (pp. 45-75). Ciudad de México, México: Universidad Nacional Autónoma de México.

Ruiz, M. y Aguilar, R. (2017). Competencias del profesor universitario: elaboración y validación de un cuestionario de autoevaluación. *Revista Iberoamericana de Educación Superior*, *8*(21), 37-65.

Tobón, S. (2004). *Formación basada en competencia: Pensamiento complejo, diseño curricular y didáctica* (1.ª ed.). Bogotá, Colombia: Ecoe Ediciones.

Toro, I., Saldarriaga, J., León, M., Martínez, J. y Arias, O. (2015). Competencias docentes para la enseñanza de la metodología de la investigación y la evaluación de trabajos de grado y tesis doctorales en administración. *El Ágora USB*, *15*(1), 137-151. Recuperado de https://doi.org/10.21500/16578031.7.

Rol de Contribución Autor (es)	Autor (es)
Conceptualización	Alma Lilia Sapién Aguilar «principal» Laura Cristina Piñón Howlet «igual» Silvia Patricia Aguirre Espino «igual» Luis Antonio Molina Corral «que apoya»
Metodología	Laura Cristina Piñón Howlet
Análisis Formal	Alma Lilia Sapién Aguilar «igual» Silvia Patricia Aguirre Espino «igual»
Investigación	Laura Cristina Piñón Howlet
Recursos	Alma Lilia Sapién Aguilar
Curación de datos	Silvia Patricia Aguirre Espino
Escritura - Preparación del borrador original	Alma Lilia Sapién Aguilar «igual» Laura Cristina Piñón Howlet «igual» Silvia Patricia Aguirre Espino «igual»
Escritura - Revisión y edición	Alma Lilia Sapién Aguilar «igual» Laura Cristina Piñón Howlet «igual» Luis Antonio Molina Corral «que apoya»
Visualización	Alma Lilia Sapién Aguilar «igual» Laura Cristina Piñón Howlet «igual» Silvia Patricia Aguirre Espino «igual»
Supervisión	Alma Lilia Sapién Aguilar «igual» Laura Cristina Piñón Howlet «igual» Luis Antonio Molina Corral «que apoya»
Administración de Proyectos	Alma Lilia Sapién Aguilar
Adquisición de fondos	Alma Lilia Sapién Aguilar «igual» Laura Cristina Piñón Howlet «igual» Luis Antonio Molina Corral «igual»