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Teachers Recognize the Need to Develop Their Competencies to Improve Medical Students' Performance

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ABSTRACT

The knowledge society requires physicians to be creative and innovative in different professional practice settings. This is a challenge to medical teachers, who are required to develop competencies beyond those acquired during their professional training. The purposes of this paper were to assess medical teachers' academic competencies, and to identify relationships between teachers' academic competencies and their students' academic performance. A descriptive-correlational study was carried out, in which it was given two questionnaires to a representative sample of 169 students and 77 teachers at medical schools in Mexico. The responses were recorded on a centesimal scale and analyzed using inferential and descriptive statistics. The domain "Recognize the need to develop teaching competencies" was significantly related to the domains "Help students be creative and innovative" ($r=0.64$; $p<0.01$), "Encourage students to work with positive emotions" ($r=0.47$; $p<0.01$), "Help students to use complex thinking" ($r=0.62$; $p<0.01$), and "Teach students to solve problems by integrating knowledge from different disciplines" ($r=0.52$; $p<0.01$). The results suggested that teacher performance is a key factor in the training of physicians under the competencies model.

KEYWORDS
competencies, student creative, socioformation, medical education

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Introduction

Society requires physicians to be creative and innovative, and to be able to identify and transform information into knowledge, thereby contributing to human development. Physicians are expected to help improve life quality of their

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patients and their families, and to contribute to social and economic development (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2015). In this sense, medical education must prepare healthcare professionals to play different roles beyond medical expert (such as advocate, communicator, scholar, professional, collaborator, etcetera) (Jasson & Deborah, 2007 as cited in Al Bu Ali, Balaha, Kaliyadan, Bahgat, & Aboulmagd, 2013). According to Beran (2015), the mechanisms of achieving such outcomes are the implementation of research based education policy and practice in the areas of teaching, learning, assessment, leadership, evaluation, curriculum, and management.

Physicians are often educated under the competency-based model. In this context, the commitment of medical schools and their teachers is integral to the competency-based model. Therefore, the curriculum may include the training of physicians with different perspectives. Physicians may challenge the model of health care, and adapt the perspective within the concept of global development in an attempt to generate better living conditions throughout society. Thus, physician training may require the ability to respond to current and future problems in health and also in health promotion, in a humanitarian way.

Consequently, it is important that teachers recognize the need to develop academic competencies and to promote the training of physicians in accordance with the challenges of the modern knowledge society. "Innovative teaching is a necessity for all teachers in order to meet the educational needs of the new generations" (Zhu, Wang, Cai & Engels, 2013, p. 9). The challenge for teachers is to be able to contribute to the comprehensive development of students' competencies. In the pedagogical paradigm, which focuses on social formation, physician training is seen as autonomous and creative, and with the aim of producing practitioners with strong values (Parra, Benavides, García, et al., 2014). Physicians should be able to apply their potential to generate knowledge and to apply their knowledge to help solve health problems and in the transformation of health systems. It is also important to develop the complex thinking needed to consider different life situations and the need to live ethically (Tobón, 2016).

Nevertheless, one problem is that most medical teachers are not trained as teachers, because their initial formation is in another discipline. The dominant theory of the last century, the Flexner model of medical education, remains in use today in some educational practices. The medical teacher functions in the traditional role model is to transmit knowledge. This may hinder the formation of student competence. In this model of medical education, content is treated as a descriptive letter, topics list, chapters, or units, and the assessment of learning is considered a terminal activity that is conducted through examinations. This assessment encourages students to study only to pass instead of studying to learn important concepts (Moran, Pérez & Pansza, 1996) and is used in some cases as a weapon of intimidation. Therefore, teachers may not encourage their students to develop the competencies needed to solve problems they will encounter in their professional practice.

Wilkerson, and Irby (1998), consider skill development as a tool that could help to improve the educational audacity of institutions. This is studied through the attention to the competencies needed by individual teachers. Nonetheless, an example of the contrary is that medical teachers in the Autonomous University of

Chihuahua attend workshop diploma courses; however, the results of previous research, have shown that changes in teaching practice are unclear, that traditional teaching practices persist, and that the current teacher focus is on developing knowledge (Zhu, Wang, Cai, & Engels, 2013).

On the other hand, current educational theory states that the educational process is bidirectional; that is, the teacher learns, teaches, and supports students by finding information and developing the students' competencies. Thus, the teacher's role is to guide and encourage their student achievements (Parra, Vázquez, & Del Val, 2012). In addition, modern medical education requires a modification in the conventional role of teachers to become more of a mediator of learning. In this way, the current role of teachers is to promote self-learning by the students and the self-development of their competencies.

The socioformation perspective explains that being a good mediator of the learning process requires that teachers: a) explore the potential of students in different areas of development (cognitive, attitudinal, and procedural); b) identify students' learning needs; 3) negotiate significant learning through activities that are of interest to students and that emphasize the need to continue learning; 4) offer assistance according to the students' needs as manifested but does not anticipate or take for granted certain needs if they are not evident; 6) give freedom to students to be responsible and committed to do whatever is professionally necessary to ensure their development; 7) promote in their students the ability for individual and group self-regulation and self-management; 8) motivate students to develop a way to systematize information as learned; 9) allow students to make errors and thus learn self-regulation by helping students to learn from their mistakes; 10) respect students' learning styles and rhythms; 11) specify the expected learning outcomes; 12) promote their expression in different ways (Zhu, Wang, Cai, & Engels, 2013; Mexican Association of Faculties and Schools of Medicine [AMFEM], 2012).

In this perspective, teachers should develop academic competencies such as: 1) training and updating; 2) curriculum management; 3) planning the training process; 4) learning mediation; 5) applying medical professionalism; 6) evaluating competencies; 7) producing research and knowledge; and 8) using informatics. These competencies are suggested by the AMFEM (Mexican Association of Faculties and Schools of Medicine, 2012). In this way, competency is defined as the knowledge, abilities and attitudes that teachers show through comprehensive performance. Teachers must develop competencies to respond with commitment to ethical problems and complex situations in a changing environment. Also, they should generate alternative solutions in real situations. This involves learning to know, as well as the expertise to know how to live, and how to be. Subject to contingencies, this creativity should be transferrable to any current and future context (Tobón, 2017). Below, in Table 1, the required competences for teachers are described.

Table 1. Descriptive list of competencies and domains

Competence	Definition	Domains
Training and updating	Teachers show interest in developing teaching skills and to improve their teaching through a metacognitive process and through a process of continuous updating.	-Meet the educational model based on competencies. -Know how to contribute to the comprehensive training of medical competence. -Recognize the need to develop teaching competencies. Analyze the effects of educational intervention on the education of students as a thoughtful process. -Attend courses to upgrade their teaching. Participate in the training of other teachers.
Planning the training process	Teachers plan and develop training processes (educational planning). Teachers organize learning activities, techniques, methods, practices, and educational resources that are consistent with the pedagogical model. This contributes to the comprehensive training of medical competence.	-Plan the process of teaching and learning. Share with students the academic planning and course program. -Design training projects that encourage students to analyze problems within the context of learning competencies. -Design and organize the delivery and acquisition of techniques, methods, practices, and teaching resources to facilitate student learning while considering difference in learning styles. -Develop learning guides that allow students to acquire and develop their skills. -Integrate on the subject, and method into seminars about problem cases. -Integrate into the curriculum, the methods of problem-based learning (PBL) and evidence-based medicine. -Integrate into the academic program the project method. Apply the methods of clinical and epidemiological research. -Integrate laboratory practice into the academic program. -Organize learning scenarios (in the classroom, clinic, hospital, and community center) to include self-learning activities and skill development.
Learning mediation	Teachers coordinate the application of educational processes with efficiency and responsibility. They promote assertive communication in the development of competencies and contribute to the students' ethical development.	-Generate the desire to learn in their students through a process of self-directed, autonomous, and self-regulated learning. -Help students develop the skills and competencies needed in professional profile. -Help students build on solid concepts by complementing previous knowledge. -Encourage students to seek information from relevant sources. -Help students to learn to organize information and identify what is relevant. -Help students to develop values such as responsibility, honesty, perseverance, solidarity, justice, altruism, and humility. -Help students to develop emotions that are positive and to enjoy what they do. -Coordinate educational processes efficiently. Raise issues of context that are relevant and challenging to help students learn to analyze, argue, and resolve. -Help students to learn to solve problems by incorporating knowledge from different disciplines. -Help students develop clinical reasoning skills. Promote participation and collaborative work among

		students. -Promote student participation in community care practices. -Communicate with students cordially and respect their rights, feelings, and emotions. -Help students to be creative and innovative. -Identify problems in and strengths of the tutorial process and the role of tutor. -Exhibit interest in the students' development as a whole person.
Medical professionalism	Teachers express and promote medical professionalism through their own examples so that students develop important human values. These values include honesty, respect, humility, justice, patience, loyalty, responsibility, solidarity, tolerance, passion, trust, empathy, commitment, secularism, and compassion.	-Take responsibility for teaching work. -Promote the values of the medical profession. -Demonstrate consistency in thinking, speaking, and acting. -Treat students humanely and empathetically. -Act proactively within the institutional and social context. -Show values, ethical principles, and a profound understanding of social phenomena.
Assessment of competences	Teachers develop a system of valid and reliable assessment to evaluate the competencies and to promote continuous improvement of medical education.	-Plan the assessment process. -Understand how competencies are assessed. -Articulate performance plans (reports, presentations, group discussions, etc.). -Develop a system of valid and trustworthy assessment using various instruments such as: multiple-choice tests, matching (transverse) and estimate scales (longitudinal). -Design relevant assessment instruments that focus on competencies, such as learning maps, objective structured clinical examinations portfolio. -Consider evaluation as a strategy for continuous improvement. -Be fair and objective when evaluating students. -Promote self-evaluation and peer assessment by students. -Provide timely feedback of students' achievements and areas for improvement. -Provide feedback to encourage students to achieve performance levels of greater complexity.

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Research and knowledge generation	Teachers are expected to participate in scientific research projects in their discipline area and in the wider field of education. Using the results of their research, teachers generate knowledge to contribute to improving the health quality care and medical education.	-Participate in research projects in their discipline. -Participate in research projects in the education's area. -Show the ability to Participate effectively in the generation of scientific knowledge in medical education's area. -Participate in conferences, seminars, and other professional development functions. -Help students develop humanistic and scientific thought. -Encourage students to develop research projects.
Informatics	Teachers use technology to access information and to exchange experiences in virtual rooms, online courses and workshops, and videoconferences. This helps to strengthen their teaching competency and to generate interactive learning environments with their students.	-Use electronic media and e-learning platforms as support for teaching. -Use electronic assessment. -Encourage students to use information technologies.

All competencies referred to above are dynamic, open, and constantly evolving. However, there is little objective information about the impact of these teaching competencies on the comprehensive training of physicians. Thus, it is important to explore how medical teachers' academic competencies relate to the academic performance of their students. The students' academic performance must be reflected in their competencies and form the graduate profile. Some of these competencies are as follows: 1) express respect for others; 2) use complex thinking and a systemic approach to analysis and troubleshooting: 3) demonstrate effective behaviors when interacting and sharing within teams; 4) show an entrepreneurial and creative attitude; 5) generate projects that contribute to the improvement of health conditions; 6) apply different languages and data sources to communicate effectively; 7) promote a healthy culture by adopting a healthy lifestyle; 8) understand the basic concepts in health´s area; 9) develop research projects of psychological, biological, and social phenomena that will help solve problems for individuals and society; 10) interact in interdisciplinary and multidisciplinary groups; 11) conduct a comprehensive diagnosis of a patient by systematically assessing a patient's health status; 12) apply administrative accounting and legal aspects, in professional medical practice within an ethical framework.

On the one hand, this article discusses perceptions of teachers and students about the relationships between the need to develop academic competencies; on the other hand, it examines the comprehensive training of physicians to be creative. Given that teacher professionalization is fundamental to teacher quality (Parra, 2006; Autonomous University of Chihuahua, 2008) the performance of students is the result of learning provoked by the intervention of teachers (Sanchez-Mendiola,2012).

Material and methods

Study Type

A descriptive-correlational study was carried out during 2014. The study included students from the Medicine School of the Autonomous University of Chihuahua and teachers attending an academic meeting of schools of medicine. This method was used to assess teachers' academic competencies and to recognize the relationship between these competencies and the students' academic performance.

Instruments

Two questionnaires were applied in a cross-sectional study. The first was given to teachers and included nine complex variables relating to the competencies of teaching and student performance. Students' academic performance was considered the dependent variable. The other eight competencies were considered independent variables: 1) training and updating; 2) curriculum management; 3) planning the training process; 4) mediation of learning; 5) medical professionalism; 6) assessment of competencies; 7) research and the knowledge generation; and 8) informatics. Each of the competencies, which integrated multiple domains, was assessed through the questionnaire. Eighty-seven domains were included in the questionnaire. All of the single variables were measured using a centesimal scale: 79 ordinals and eight nominals.

The second questionnaire was given to students and included nearly the same complex variables except that training and updating, curriculum management, and planning of the training process, were excluded. These complex variables belong exclusively to teachers. Sixty variables were included: 56 ordinal and four nominal. Both questionnaires were validated in a pilot study of 37 subjects. The data were subjected to a reliability analysis using the coefficient Cronbach´s alfa (Cronbach, 1951). The alpha coefficient for the first questionnaire was 0.892, and the alpha coefficient for the second was 0.928; this suggests that the items have high internal consistency (Nunnally, & Bernstein, 1994). The study sample compromised teachers and students enrolled in the school in August, 2013. The total student population was 1345, and the total teacher population was 235. Both temporary and permanent teachers employed by the medicine school were included in the teacher population.

Participants

A simple random was selected (Bonomi, Patrick, Bushnell, & Martin, 2000) with a confidence level (z) of 95% and an accuracy level of 7% (0.07). This corresponded to 77 teachers and 169 students; these were considered the sample sized needed to obtain valid results that could be generalized to the population studied. The sociodemographic characterization of teachers and students is shown in the table 2. The teachers and students were selected arbitrarily and answered the questionnaires anonymously. The data were collected to a database.

Table 2. Sociodemographic characterization of teachers and students

	Teachers		Students	
Individuals	77		169	
Age (years) (mean ± standard deviation)	47.4 ± 12.20		19.94 ± 1.88	
Experience (years) (mean ± standard deviation)	13.40 + 10.71		-	-
Gender (individuals)	21 females	56 males	81 females	88 males
Age (mean ± standard deviation)	40.27 ± 10.43	49.64 ± 11.93	19.90 ± 1.63	19.96 ± 2.086
Experience (years) (mean ± standard deviation)	10.73 ± 10.11	14.34 ± 10.84	-	-
Marital status (individuals)	11 married	50 married	80 single	88 single
	6 single	3 single	1 married	1 divorced
	2 divorced			

Ethics Statement

This research was approved by the Ethical and Research Committee of the State´s Central Hospital and the UACH´s School of Medicine and Biomedical Sciences. The oral informed consent was acquired from all participants. The consent procedures used to obtain participant consent were approved by the Ethics Committee. The Regulation of the General Health Law on Health Research of Mexico, published in the Official Journal of the Federation on January 6, 1987, Article 23.

Statistical Analysis

The results were analyzed using inferential and descriptive statistics.

Description: In the first level of descriptive statistics, the teacher profile was characterized using measures of central tendency and variability. The limits of normality to one standard deviation (SD) were established to identify the variables above and below the norm. This was done by identifying the variables with values higher or lower than the range of ±1 SD from the analysis of means. The second analysis was a Pearson correlational analysis, to examine the connections between variables of interest to the research. Correlation coefficients

(r) were considered significant at the level of $p \leq 0.01$. The third analysis was comparative: it uses student's *t*-test, in which it compares the responses of the variables of interest between teachers and students. Significance was accepted at $p \leq 0.05$.

Results

The teachers responded that providing the subject program to the students when the semester starts was the most important domain (Table 2). This domain corresponds to the competence called "Planning the training process". In this process, the teachers included seminar cases and projects. They also responded that epidemiological clinical research and promotion of students' participation in practice in the community as important. These results indicate the areas that teachers thought they needed to improve.

Table 2. Competencies, domains, atypical higher and lower scores (*), and SDs.

Name Competency	Domain	Atypical Higher scores	SD	Domain	Atypical Lower scores	SD
Training and updating	3. Recognize the need to develop teacher competencies	87.32	20.24	6. Participates in training of other teachers	28.44	36.28
Planning the training process	13. Disclose academic planning of the program with students	89.55	19.73	17. Integrates problems case into seminars	56.28	36.57
				20. Integrates project methods into the academic program	55.70	36.20
				21. Applies the methods of clinical and epidemiological research	52.37	39.49
				22. Integrates laboratory practice into the academic program	44.74	40.71
Mediation of learning				36. Promotes student participation in community care practices.	54.77	33.50
Medical professionalism	42. Promote in students the values of the	82.87	21.94			

	medical profession					
	43. Act consistently in thinking, speaking, and acting	83.93	17.63			
Assessment of competencies	47. Plan the assessment process	82.91	39.45			
Research and knowledge generation				58.Participates in research projects in their discipline	51.59	37.94
				59. Participates in research projects in the education area	33.57	36.74
Informatics	64. Use electronic media to support for teaching	84.85	22.02	65. Uses e-learning platforms	47.84	35.59
				66. Applies electronic evaluation	43.51	35.45

Note. * The atypycal higher and lower scores were estimated by adding or subtracting 1 SD to the mean.

From the teachers' point of view, providing the subject program to the students at the beginning of the semester was the most important simple variable (score of 89.55) within the competency called Planning the training process.

On the one hand, the teachers recognized the requirement to develop their own within the process called "Training and updating" (Table 2). However, they also reported that they infrequently participated in training events as instructors (Table 2). These results suggested the need to improve this domain. On the other hand, the teachers and students noted that professors use electronic media to support teaching in 84.85% of the sessions. However, the atypical lower score of 47.84% suggests that professors use e-learning platforms to a limited extend. This indicates another improvement´s area.

Coherence in ways of thinking, speaking, and behavior is strongly correlated (r= 0.90, Table 3) with the teachers' empathetic and human dealings with students. Moreover, teachers promote student values such as responsibility, honesty, perseverance, solidarity, justice, altruism, and humility. These results showed the importance of the teachers' ethical behavior.

Table 3. Pearson correlation coefficients (*) between teacher competencies and teachers' or students' academic performance

VARIABLE	CORRELATED WITH:	r value
CONTINUOUS UPDATING Recognize the need to develop teachers' competencies.	Teacher help students be creative and innovative. Teach students to solve problems by consolidating knowledge from different disciplines.	0.64 0.52
	Teachers help students develop positive emotions to enjoy what they do.	0.47
PLANNING OF THE FORMATION PROCESS Share with students the planning of the academic program.	Help students to use complex thinking and systematic approaches in problem solving.	0.62
LEARNING MEDIATION Promote student participation in community care practices.	Contribute to the formation of medical competence. Students provide comprehensive health service and quality to society, and interact in interdisciplinary and multidisciplinary groups.	0.59 0.46
Identify problems and strengths of the tutorial process and the role of the tutor.	Demonstrate effective behaviors when interacting and sharing in teams. Students assess the patient fully and systematically to identify clinical changes to conduct a comprehensive diagnosis.	0.43 0.56

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MEDICAL PROFESSIONALISM		
Promote in students the medical profession values in a context of respect for life.	Students: generate projects that contribute to the improvement of health conditions.	0.61
Shows coherence in thinking, speaking, and behavior.	Shows human and empathetic dealings with students.	0.90
	Help students to development values such as responsibility, honesty, perseverance, solidarity, justice, altruism, and humility.	0.41
ASSESSMENT OF COMPETENCIES		
Plans the assessment process.	Students: express an entrepreneurial attitude.	0.66
Understands how competencies are assessed.	Students: demonstrate effective behaviors and interact and share with the team.	0.59
	Students: employ complex thinking and a systematic approach to the analysis of problem solving.	0.56

Note: * Correlation coefficients (r) were considered significant at the level of $p \leq 0.01$

The variable "Teachers' planning of the assessment process" was strongly related to "Students' entrepreneurial attitude" (Table 3). The variable "Teachers' sharing of the planning of the academic program" correlated with the variable "Students' use of complex thinking and a systematic approach for analyzing and solving problems" (Table 3). These results indicate that the planning processes are important for student's academic performance. However, these results do not explain how the teachers' performance promotes these student domains.

The variable "Teachers' recognition of the need to develop competencies" correlated significantly with the variables "Teachers help students be creative and innovative" ($r = 0.64$), "Teachers help students develop positive emotions and enjoy what they do" ($r = 0.47$), and "Teach students to solve problems by integrating knowledge from different disciplines" ($r = 0.52$) (Table 3). These results suggested that teachers' academic competencies may be related strongly to students' academic performance from the socioformation perspective.

A comparison between teachers and students is shown in Table 4. The views differed significantly between teachers and the students with respect to the variables "Is consistent in the way of thinking, speaking, and acting", "Promote in students the values of the medical profession", and "Use electronic media as support for teaching". The students' scores were higher than those of the teachers for these domains. This is interesting because the teachers promote these competencies in students.

Table 4. Comparisons between teachers and students

Variable	Students	Teachers	t value	Df	p
X42. Promote in students the values of the medical profession	91.16	78.58	4.81	267.00	0.00
X43. Is consistent in the way of thinking, speaking, and acting	91.68	79.67	5.75	260.00	0.00
X64. Use electronic media as support for teaching	91.23	81.22	3.74	268.00	0.00
X65. Use e-learning platforms	37.72	54.71	3.86	266.00	0.00
X68. Express respect for others	86.86	80.74	2.58	267.00	0.01

Discussion and Conclusions

The results of this research demonstrated that teachers reported the most important domains as "Plan the process of teaching and learning", "Share with students the academic program and course program", "Create learning environments through the design of training projects", and "Design training projects that encourage students to analyze problems within the context of learning competencies". In addition, teachers use PBL that promotes self-directed learning and contributes to students using complex thinking; i.e., they are able to relate knowledge and to link these items with the real-life situations, and to take a holistic point of view of health problems (Mexican Association of Faculties and Schools of Medicine, 2012). Niwa, Saiki, Fujisaki, Suzuki, and Evans, suggest that PBL is superior to the conventional methods used to develop cognitive ability, whereby suggests some superiority of PBL in the acquisition of medical knowledge.

Another point noted by teachers was the need to develop academic competencies as mediators of learning. This variable was related to the variable "Promote creative and innovative students". According to the teachers, these attributes help students solve health problems by articulating their knowledge from different disciplines. Also, creativity and innovation have gained importance for the development of the knowledge society in the present century (Ferrari, Cachia, & Punie, 2015). The teachers should influence attributes in these students, and their individual factors (Nam, 2004).

From the viewpoint of socioformation, mediation is performed through 10 key actions. These actions are sensitization, conceptualization, problem solving, values formation, ethical aspects of life, collaborative working, assertive communication, creativity, crosscutting, resource management, and metacognitive evaluation (Mexican Association of Faculties and Schools of Medicine, 2012). To the extent that teachers implement these actions from their own experience and interests and consider the life cycle of students, the teachers contribute to the formation of citizens (Parra & Tobón, 2015).

Teachers recognize the need to develop academic competencies by contributing to the students' development of positive emotions and enjoying what

they do. The attributes needed in today's medical training are consistent with the challenges of the knowledge society. Emotional health intelligence is a key concept that promotes interpersonal and communication skills in the medical profession. Emotional intelligence in medicine helps in the doctor–patient relationship and issues related to quality of care and patient satisfaction; the performance, level of participation, and satisfaction of medical professionals; and the training and development of clinical communication skills (Hernández-Vargas C, & Dickinson-Bannack, 2014).

This investigation also found that teachers are consistent with their way of thinking, speaking, and acting. They apply empathetic ways of dealing with students and promote in students values such as responsibility, honesty, perseverance, solidarity, justice, altruism, and humility, which are values needed by physicians. This finding indicated that teachers apply the pedagogical paradigm centered on the socioformation concept, which helps doctors to be independent and critical, and to use creative-generative methods (Parra & Tobón, 2015). Training is realized from a flexible and open perspective that does not impose limits of student development and that recognizes the great potential of students when allowed to show and develop their interests.

In the pedagogical socioformation paradigm, students and teachers work together into an ethical life project. In this process, people seek personal fulfillment according to the vital needs of growth and by assuming the challenges within their social context. It also contributes to the development of entrepreneurial and creative attitudes, collaborative work, and acquiring the skills to meet the challenges of the current and future contexts (Mexican Association of Faculties and Schools of Medicine, 2012). The pedagogical socioformation promotes the development of complex thought, which refers to the understanding of the world as an entity in which everything is intertwined, as in a tissue composed of fine threads that are woven together in a complex fabric (Morin, 1999).

These results lead to other research questions such as: What aspects of teaching practice should be updated to promote competencies in medical training within the knowledge society? Why promote the formation of innovative and creative and physicians with socioformative pedagogical paradigms? The results of this research showed that teachers' competencies significantly affect the overall performance of students.

It is important to promote a comprehensive program for strengthening of teachers that goes beyond offering courses that improve only their salary payment. It is necessary to offer a range of training options that can improve teaching practices and that meet the needs of teachers in two ways. The first is within the faculty through dialogue among peers in schools and through learning communities where they can analyze educational problems, the teaching experience, and planning of the formative process of their students. This will contribute to the pedagogical role of teachers. The second involves options outside of the school according to the specific needs of teachers. These might involve enrolling in courses, diplomas or graduate programs at other institutions to improve their teaching competencies. The comprehensive program for strengthening of teachers must be assessed objectively to measure its impact on medical education quality according to national and international standards.

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The Authors reported that no competing financial interest.

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