

Standards of Excellence for the Accreditation of Medical Education in Mexico: An Educational Structural Analysis

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Abstract:

Background: Excellence in medical education is a multidimensional, contextual and multireferential process. The accreditation agencies evaluate it through specific standards oriented to various factors that participate in the training of the general practitioner. In order to manage the accreditation process, medical school stakeholders need to have a proper understanding of the structure of the frameworks. To explore this approach, the study was conducted with the purpose of analyzing the structural consistency of the Q standards used to assess the excellence of medical education in Mexico.

Materials and Methods: The study was of a qualitative and documentary type from the approach of the principles of Gadamerian hermeneutics using the Morganov-Heredia technique. The categories of analysis were: institutional orientation, study plan, students, teachers, evaluation, institutional linkage, administration and resources. Binary matrices and adjacency graphs were elaborated.

Results: The 40 standards of excellence analyzed are distributed into source (35%), intermediate (40%), and top (15%) standards, with 282 antecedent-consequent sequences. Eight levels of analysis were also identified (trigger, contextual, activation, regulation, challenge, objectivity, autonomy, and results).

Conclusion: The standards of excellence of the 2018 self-assessment instrument of the Mexican Council for the Accreditation of Medical Education, are understood from the concept of excellence as a process in development, with different levels of analysis located in the concrete reality of the medical school, and with 100% congruence between standards.

Key Word: Accreditation; Structural analysis; Standards of excellence; Quality of education; Medical education; Self-assessment.

Date of Submission: 12-01-2023

Date of Acceptance: 28-01-2023

I. Introduction

The analysis and evaluation of the quality of medical education is a process that has been present in the History of Medical Education, highlighting the Flexner Report of 1910 as a reference. More than a century after Abraham Flexner's conclusions, educational evaluation that precedes the accreditation of medical education is a social fact that accompanied globalization, and is acquiring the function of monitoring, regulating, improving and optimizing the processes involved in the training of the general practitioner^[1]. At the beginning of the 21st century, accreditation is consolidated as a global phenomenon that reflects the need for medical schools to have the national, regional or international accreditation seal for their educational program^[2].

In the 1990s, accreditation was configured as a process that was based on pre-established standards and its compliance was assessed by external peer evaluators who assessed the level of quality of educational programs of higher education institutions^[3]. Subsequently, accreditation was understood as a procedure that led to the social and public recognition of educational programs, for which it was essential that the institutions comply with the standards defined as desirable in reference frameworks that delimited the evaluation criteria of the educational quality^[4].

In the first decade of the 21st century, it was stated that accreditation was a process of social and public regulation carried out by governmental or civil society organizations, whose objective is to evaluate compliance with standards, criteria and indicators that allow ensuring the quality of educational processes taking into account the social responsibility assumed by higher education institutions^[5].

In 2013, the World Health Organization (WHO) defines accreditation as "a review and approval process by which an institution or program is granted time-limited recognition of having met certain established standards"^[6]; and in 2016 he published the "Global strategy on human resources for health: workforce 2030" where he declared in objective 1.1, that "by 2020, all countries will have established accreditation mechanisms for health training institutions"^[7]. In 2016, the International Association of Medical Regulatory Authorities (IAMRA) defines accreditation as "the process by which a credible and independent body assesses the quality of a medical education program to ensure that it produces graduates who are competent to practice safely" and

effective under supervision as trainees (or equivalent), and who have received adequate training, the basis for lifelong learning and continuing education in any branch of medicine”^[8]. For its part, the WFME^[9] understands accreditation as the "certification of the suitability of medical education programs and the competence of medical schools in the delivery of medical education." In the year of 2020, it published the update of the “WFME Global Standards for Quality Improvement: Basic Medical Education”^[10].

In its origins, the accreditation was oriented towards the diagnosis, evaluation and assessment of quality in order to obtain the distinction of an accredited program, with the passage of time the educational requirements and the professional practice of medicine were modified, inducing to understand that the wealth of the accreditation lies in the preparation of an "action plan" aimed at addressing the areas of opportunity identified in the self-evaluation and the external evaluation carried out by academic peers who participate in the evaluation to determine the accreditation. Thus, the accreditation of medical education is based on a multidimensional and contextual evaluation process that allows measuring, verifying, comparing, making judgments and determining the level of quality with which the medical school operates in its mission to train doctors.

The quality models that support the accreditation of medical education in the world are characterized by establishing minimum evaluation criteria that must be met by medical schools and their educational programs, so that they meet social requirements in the context of their mission and vision in particular^[11]. However, there has been an expressed trend in accreditation to promote excellence in medical education beyond basic accreditation standards, as reflected in the 2015 edition of the WFME Global Standards^[12].

In this context, excellence in medical education is a multidimensional, contextual and multireferential process that is built from the promotion of quality in the various factors that participate in the training of the general practitioner, so that a level of achievement is reached, and higher compliance than that established by the basic standards established to grant accreditation recognition. Following this line of reflection, it is understood that both excellence in medical education and the social responsibility of medical schools add value to the recognition of accreditation^[13]. Garzón Castrillón^[14] mentions that excellent medical education must have among its purposes:

- The effectiveness in the adaptation and development of substantive university functions (teaching in medicine, research in medical education and links with the health sector)^[14].
- Consistency with the epidemiological and health system context^[14].
- Strengthen the social responsibility of the medical school through^[15]:
 - the comprehensive and quality education of the student,
 - the interdisciplinary and intercultural articulation of priority areas of medical and educational research,
 - the projection of activities towards society that affect the epidemiological profile, the culture of health and the well-being of the population, and
 - the integration and development of educational actors (managerial staff, academic staff, administrative staff and student community).

On the other hand, García-Jiménez^[16] defines 11 criteria of excellence for higher education, which can be applied to medical education. These criteria are:

1. “Solid and progressive strategic governance and management.
2. High standards of academic achievement.
3. Well-established trajectory of employability of graduates.
4. Exceptional learning experiences.
5. Positive satisfaction of the agents of interest.
6. High levels of student satisfaction.
7. Commitment to research and academic development.
8. Support for social, economic and cultural development.
9. Recognition of the social benefit of education.
10. Commitment to internationalization.
11. Promotion of equality and academic freedom”.

The recognition of the social responsibility that medical schools have is influencing the understanding of excellence in medical education. Defined as the ability of medical schools to redirect educational activities, research processes, and services directed to society, social responsibility contributes to excellence by promoting, on the one hand, generating responses to health needs of the population, and on the other, it uses accreditation as a strategy to evaluate the performance and impact of the medical school in its environment of influence^[17]. The evaluation of the quality of medical education programs that are operated in medical schools has been institutionalized through national, regional and global accreditation agencies. Each agency establishes principles, evaluation criteria, standards and indicators to evaluate quality, as well as evaluation methods, although the procedure is generally similar, since they include the preparation of the self-evaluation, the

realization of a visit to the educational institution by a team of peer reviewers and the collegiate opinion to grant accreditation recognition to the educational program evaluated^[18].

In this context, accrediting agencies are gradually aligning the criteria, standards, and indicators to assess the quality of medical education programs with the standards proposed by the World Federation for Medical Education (WFME)^[19]. This is the case of the Mexican Council for the Accreditation of Medical Education (COMAEM), which in 2018 published the self-assessment instrument in which WFME criteria were incorporated to evaluate educational programs through compliance with indicators and standards^[20]. In this case, the challenge is transferred to the academic leaders of the medical schools who must meet the evaluation criteria set out in the standards, which implies renewing management mechanisms that contribute to adequately preparing the self-assessment report and solving the problems that arise. they face in understanding, interpreting and applying the standards^[21].

The 2018 Self-Assessment Instrument (SAI2018-COMAEM)^[20] used by COMAEM to evaluate the educational programs developed by medical schools is structured into 7 sections in which 114 quality standards are distributed (Table 1). 74 (64.91%) are defined as basic accreditation standards and are considered to evaluate and rule on the accreditation of medical educational programs in Mexico. The remaining 40 (35.09%) standards are aimed at evaluating excellence in medical training and are called "Q standards". Initially, compliance with the Q standards was carried out voluntarily by medical schools, but in October 2022, COMAEM published the agreement establishing as a requirement to reaffirm accreditation, compliance with 25% of the "Q indicators", with the purpose of promoting the continuous improvement of the quality of medical education in Mexico^[22]. Following this line of reflection, the question arises: what are the reasons for medical schools not to meet the Q standards? A possible answer can be directed to the analysis of the understanding of these standards^[23]. But it can also be attributed to the interest that educational institutions have in accreditation processes^[21]. Both possibilities again generate other questions; For example, how is the discourse of excellence possible through the Q standards? But it is also feasible to ask: the interest of medical schools in obtaining the social recognition of accreditation, is it motivated by improving educational processes or Is only the institutional requirement met to obtain possible government benefits?

Table 1. Distribution of quality standards in the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

Section	Basic Standards		Standards of Excellence	
	No.	%	No.	%
1. Institutional orientation and governance	9	12.16	6	15.00
2. Curriculum	24	32.43	10	25.00
3. Students	8	10.81	4	10.00
4. Teachers	6	8.11	2	5.00
5. Evaluation	14	18.92	10	25.00
6. Institutional vinculation	5	6.76	3	7.5
7. Administration and resources	8	10.81	5	12.5
Total	74	100.00	40	100.00

Source: Own elaboration with information from SAI2018-COMAEM^[3].

The Q standards, in essence, contribute to the self-assessment of the substantive functions (teaching, research and relationship) and the adjective functions (governance and administration) that the medical school develops to achieve its mission; but they also encourage reflection on their objectives, develop proposals that manage excellence in medical education, and re-establish commitment to society. In this context, the following question becomes relevant: how is the structural consistency of the Q standards used by COMAEM to assess the excellence of medical education in Mexico possible?

To explore this question and contribute to the understanding of the SAI2018-COMAEM that allows leaders and quality managers of medical schools to transfer and apply the evaluation criteria contained in the Q standards to the specific context of the institutions, taking into account their mission and curricular project; The study was carried out with the purpose of analyzing the structural congruence of the Q standards used to evaluate the excellence of medical education in Mexico through the application of the Morganov-Heredia technique.

II. Material And Methods

A qualitative and documentary study was carried out, from the hermeneutic interpretive approach based on the principles of Gadamerian hermeneutics applied to the field of health sciences [24]. Hermeneutics allowed the semiotic analysis of the content that underlies the 40 Q standards of the SAI2018-COMAEM^[20] attending to the following categories of analysis: institutional orientation, curriculum, students, teachers, evaluation, institutional vinculation, administration and resources. In this way, the meaning for the understanding of the

analytical categories within the context of medical education, educational quality and the horizon of understanding of excellence in medical education became evident.

The study was developed in 4 stages. In stage 1, the characterization of the hermeneutical situation was carried out, understood as the relationship between the subject that interprets the text and its hermeneutic horizon^[25,26], a founding relationship from which it is possible to understand the meaning of the 40 Q standards that were included in the study. The research technique used during the stage was documentary research, taking into account the characteristics of the philosophical research method^[27].

In stage 2, the "point of view", the "direction of the gaze" and the "horizon of the gaze" were characterized, which translates into exposing the actual historical consciousness of the hermeneutic situation of the subject in its historical context, the which is determined by previous experience, prejudices and limitations in understanding^[24]; that is, the comprehension horizon was elaborated that made possible the interpretation of the registration units that were linked to the context units and formed the interpretive framework for their understanding and application in the development of the study^[28]. The registration units were the standards and the context units corresponded to the interpretive framework to understand the relationships between the 40 Q standards.

In stage 3, the analytical phase and the comprehensive phase were developed, which allowed the registration units to be transferred to binary matrices as indicated by the Morganov-Heredia technique^[29-31]. This technique is defined as a semiotic process that integrates graph theory and matrix algebra into educational structural analysis and allows determining the articulation, structuring, and organization of standards in record unit systems determined by the meaning that was previously identified. making it possible to represent the antecedent-consequent sequence of each of the standards^[29-31]. To apply the technique, the binary matrix of the 40 Q standards was constructed and the articulation was determined under the adjacency criterion (antecedent-consequent relationship). Next, the isolated vertices, source vertices, intermediate vertices and top vertices were identified, taking the context units as a reference.

In stage 4 the reconstructive phase and the critical phase were developed; in which, after identifying each standard with a type of vertex, the adjacency graphs corresponding to each of the levels of generality that were identified were elaborated. In this way, the organization of the registration units and their antecedent-consequent sequence were represented. Once the graphs were built, the inter-standard congruence was analyzed and levels of analysis were characterized.

Due to the use of techniques and methods of analysis typical of documentary research, the study was classified as a risk-free investigation; in addition to the fact that the analyzed document is freely accessible.

III. Result

With the SAI2018-COMAEM analysis using the Morganov-Heredia technique to determine the congruence of the 40 Q standards, 14 (35%) source standards were identified, 16 (40%) intermediate standards, 10 (25%) top standards, and 282 antecedent-consequent sequences.

Q standards as structural elements of excellence.

The Q standard defined as "source" corresponds to the standard that is required by another, but they do not have any antecedent standard. This characteristic makes them very influential because the rest of the standards depend on their development. Its importance lies in the fact that they can act on the components of the educational process, depending on the management capacity of academic leaders to control the development of activities that combine inputs (academic program, educational actors, educational resources) and the expected products, for example, through the evaluation of graduates. Due to their location, the sections that contain source standards are sections: 1 ("institutional organization and government"), 2 ("curriculum"), 3 ("students"), 4 ("teachers") and 5 ("evaluation"). Of the total of the 14 source standards shown in Table 2, 36% correspond to section 2, 29% to section 1 and 21% to section 5.

The Q standard identified as "intermediate" corresponds to the standard that is required by another, but in turn, requires another standard as an antecedent, so that they reflect compliance with the standards that precede it, hence its dependence, and at the same time, they influence the standards that are consistently related to it. Its importance lies in the fact that any action on them has a consequence that can amplify or limit compliance with the standards that require them as antecedent; that is, the intermediate standards contribute to the development and cyclical progress of actions aimed at achieving goals that reflect the excellence of the educational process in medical education. Due to their location, the sections that contain intermediate standards are sections: 1 ("institutional organization and government"), 2 ("curriculum"), 3 ("students"), 4 ("teachers") and 5 ("evaluation"). Of the total of 16 intermediate standards shown in Table 3, 31% correspond to section 2, 31% to section 5 and 19% to section 3.

Table 2. Q standards identified as source standards indicating the section to which they belong in the 2018 Self-Assessment Instrument

Section	No.	Standard
1	Q.2	Academic Freedom and Curriculum
1	Q.4	Multi-sector involvement in the mission
1	Q.6	Transparency and decision making
1	Q.10	Evaluation of academic leaders
2	Q.13	Graduate, postgraduate, research and global health
2	Q.16	Curriculum committee members
2	Q.18	Contributions of biomedical sciences
2	Q.22	The use of educational experience
2	Q.28	Clinical fields of health care
3	Q.37	Enrollment/health care needs congruence
4	Q.43	Mission/academic staff congruence
5	Q.51	Reliability and validity of the evaluation instruments
5	Q.58	Curriculum and Accountability
5	Q.61	Follow-up of the performance of graduates

Source: self made.

Table 3. Q standards identified as intermediate standards indicating the section to which they belong in the 2018 Self-Assessment Instrument

Section	No.	Standard
1	Q.5	The mission, the achievement of medical research and education in global health.
1	Q.8	Collegiate government bodies.
2	Q.14	Curriculum and continuous learning.
2	Q.19	Contributions of clinical sciences.
2	Q.20	Contributions of humanities and sociomedicine.
2	Q.26	ICT in the educational process.
2	Q.29	Improvement of resources in clinical fields.
3	Q.36	Results of the admission process.
3	Q.39	Counseling and monitoring of the student's school progress.
3	Q.41	Student organizations.
4	Q.47	Teacher promotion policy.
5	Q.52	Evaluation, learning and feedback.
5	Q.56	Student performance monitoring.
5	Q.60	Professional exam results.
5	Q.62	Permanent curricular updating.
5	Q.64	Access to information about the academic program.

Source: self made.

The Q standard identified as "top" corresponds to the standard that is not a requirement of any other standard, but in turn requires another as antecedent, that is, they are exit standards from the evaluation process of excellence in medical education; which implies that they include criteria that are characterized by their low dynamism and high dependency. They are exit standards, that is, they represent the objectives and goals of the educational process in terms of what is expected in the future as an educational program of excellence, which is why they should not be addressed directly, but through the standards that precede it in the set of Q standards. This implies that they require permanent follow-up and regular and close monitoring to verify the effectiveness of the actions implemented to ensure the desired level of excellence in the educational process. By representing the specific output referents of the SAI2018-COMAEM, they are sensitive to the evolution of the activities associated with the standards that precede them. Due to their location, the sections that contain comma standards are sections 5 ("evaluation"), 6 ("institutional vinculation") and 3 ("administration and resources"). Of the total of the 10 top standards shown in Table 4, 50% correspond to section 7, 30% to section 6 and 20% to section 5.

Table 4. Q standards identified as top standards indicating the section to which they belong in the 2018 Self-Assessment Instrument

Section	No.	Standard
5	Q.63	Curriculum feedback.
5	Q.65	Institutional effectiveness.
6	Q.67	Collaboration with the health sector.
6	Q.68	Interaction between research and education.
6	Q.70	Resources and management for academic mobility.

7	Q.71	Autonomy and resources.
7	Q.72	Infrastructure for the academic environment and medical training.
7	Q.73	Innovation and development in ICT.
7	Q.74	Use of simulation in medical training.
7	Q.77	Administrative quality program.

Source: self made.

Analysis levels of Q standards

When analyzing the binary adjacency matrix using the Morganov-Heredia technique to determine the congruence of the Q standards, 8 levels of generality were identified to elaborate the adjacency graph of the 40 standards. When reviewing the structure of the graph applying the adjacency criterion (antecedent-consequent relationship), direct and indirect transfer, and vertical and horizontal transfer, it was confirmed that the standards that make up each level of generality represented different levels of analysis that contribute to understand each Q standard in the general context of the SAI2018-COMAEM. These levels of analysis are: trigger level, contextual level, activation level, regulation level, challenge level, autonomy level and results level.

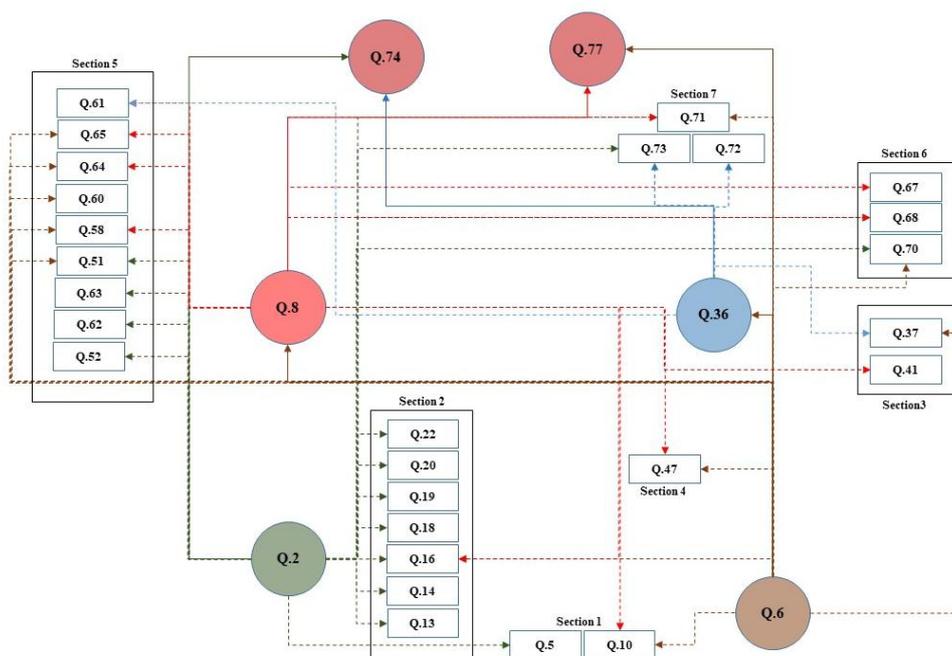


Figure 1. Adjacency graph of the trigger level of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The trigger level corresponds to the first reduction of the initial binary matrix. The graph is integrated with the standards of section 1 (“institutional organization and government”), section 3 (“students”) and section 7 (“administration and resources”); and articulates two source standards (Q.2 and Q.6 standards), two intermediate standards (Q.8 and Q.36 standards) and two top standards (Q.74 and Q.77 standards). These standards are highly dynamic due to the relationships they establish with standards from other sections and levels of analysis, which makes it possible to promote the development of standards towards excellence in the quality of the educational program. Figure 1 shows that it establishes relationships with standards in the following sections: 1 (“institutional organization and government”), 2 (“curriculum”), 3 (“students”), 4 (“teachers”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”). It is recommended that the periodic evaluation of the standards of this level be carried out to strengthen its development and thus generate the institutional impulse for the management of the excellence of the educational program.

The contextual level corresponds to the second reduction of the initial binary matrix. The graph is integrated with 3 standards from section 1 (institutional organization and government) of which 2 are source standards (Q.4 and Q.10 standards) and 1 is an intermediate standard (Q.5 standard). These standards are characterized by a high dynamism that is reflected in the relationships they establish with the standards of the sections corresponding to the study plan (section 2), students (section 3), teachers (section 4), evaluation (section 5), linking institutional (section 6) and section 7 (administration and resources). The relationships observed in Figure 2 represent the centrality of the mission and the evaluation of academic leaders in building excellence in the educational process, which provides added value to the quality of medical education.

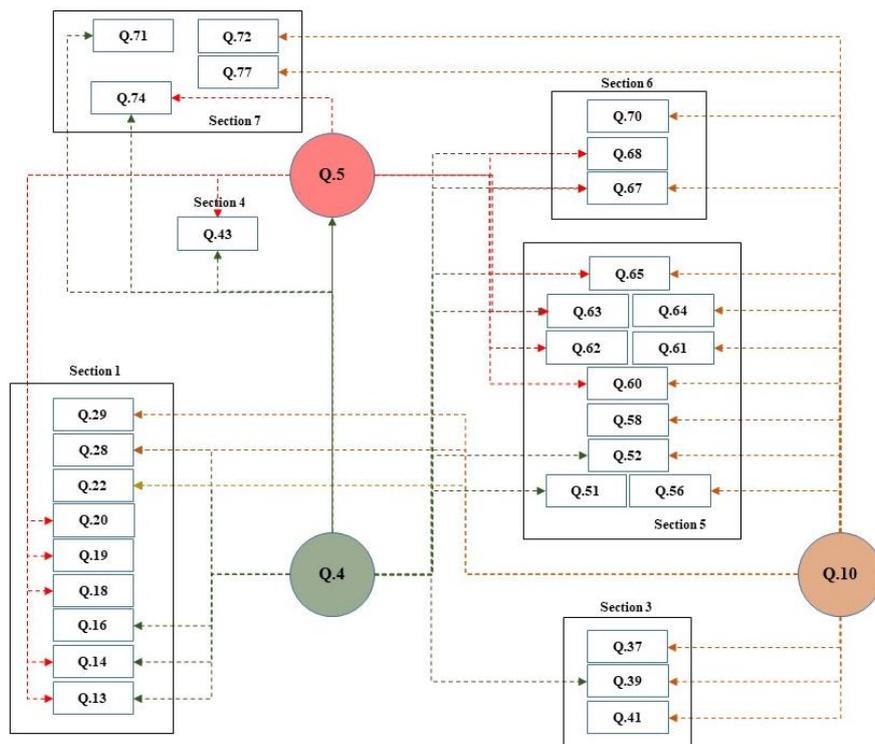


Figure 2. Adjacency graph of the contextual level of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The activation level corresponds to the third reduction of the initial binary matrix. The graph is made up of standards from sections 2 (“curriculum”), 3 (“students”), 4 (“teachers”) and 7 (“administration and resources”); and articulates three source standards (Q.13, Q.16 and Q.43 standards), two intermediate standards (Q.14 and Q.41 standards) and 1 top standard (73 standard). These standards help to promote the development of quality for compliance with the standards with which they are related (see figure 3); therefore, by promoting its development, it facilitates compliance with the different standards of the following sections: 2 (“curriculum”), 3 (“students”), 4 (“teachers”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”).

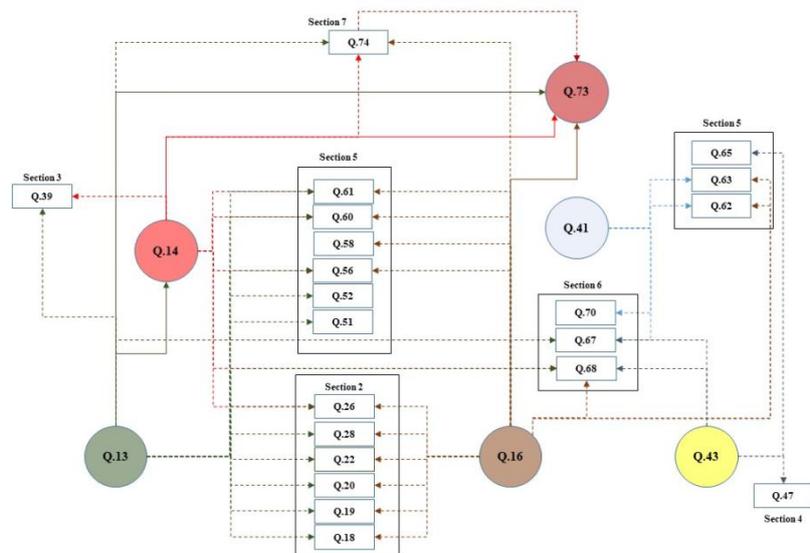


Figure 3. Adjacency graph of the activation level of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The regulation level corresponds to the fourth reduction of the initial binary matrix. The graph is made up of standards from sections 2 (“curriculum”), 4 (“teachers”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”), in which two source standards are located (Q. 22 and Q.58), two intermediate standards (Q.19 and Q.47 standards) and two top standards (Q.68 and Q.72 standards). They are characterized by their high dependence on the standards of sections 2 (“curriculum”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”) due to the relationships established with them, as can be seen in the figure 4. When helping to comply with other standards, it is advisable to frequently record the development and compliance with the standards of this level.

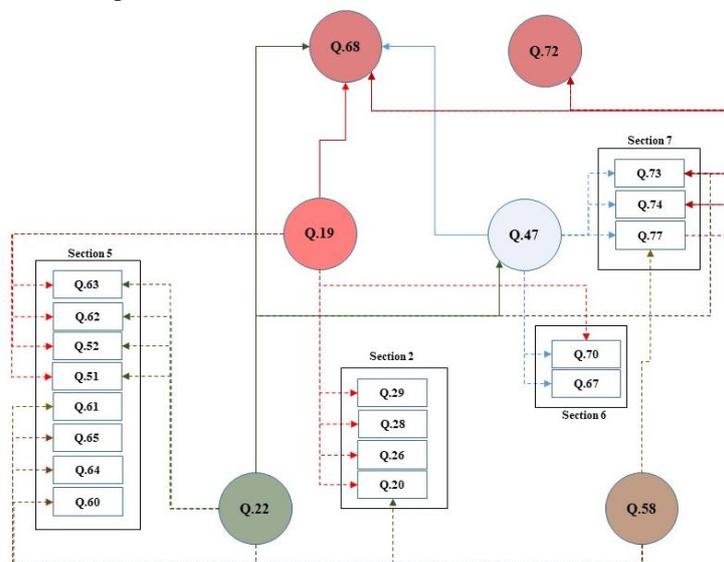


Figure 4. Adjacency graph of the regulation level of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The challenge level corresponds to the fifth reduction of the initial binary matrix. The graph was integrated with standards from sections 2 (“curriculum”), 3 (“students”) and 7 (“administration and resources”). It is made up of 1 source standard (Q.18 standard), three intermediate standards (Q.20, Q.26 and Q.39 standards) and 1 top standard (Q.71 standard). These standards are characterized by being very dynamic, but also very dependent in such a way that they have the potential to modify the compliance of the standards that are associated with them, as is the case of the standards shown in figure 5 and which correspond to sections 2 (“curriculum”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”). The dynamism that characterizes them causes the evidence for their compliance to vary frequently, which is why it is advisable to periodically record their development since they have the potential to justify the change of the curricular project in the future to lead it to a level of excellence.

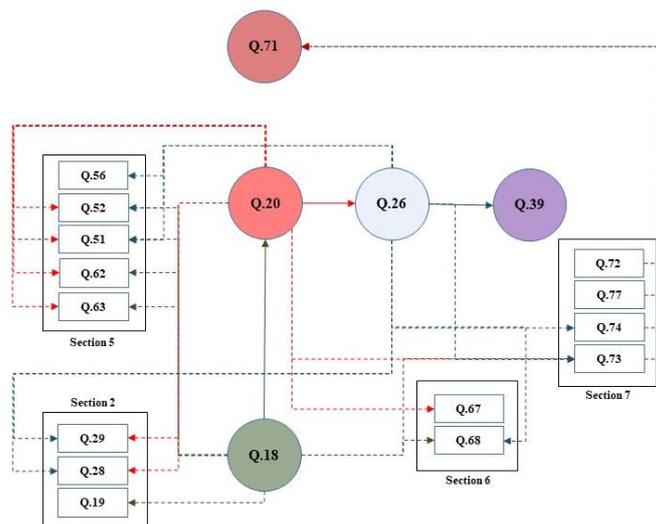


Figure 5. Adjacency graph of the challenger level of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The level of objectivity corresponds to the sixth reduction of the initial binary matrix. The graph was integrated with standards from sections 2 (“curriculum”), 5 (“evaluation”) and 6 (“institutional vinculation”), and articulated two source standards (Q.28 and Q.51 standards), two intermediate standards (Q. 29 and Q.52) and 1 top standard (Q.70 standard). The standards at this level are characterized by being highly dependent on standards that precede them and moderately driving, hence they represent the possibility of intervening so that their evolution is the desired one for adequate compliance. Figure 6 shows the relationships with standards in sections 3 (“students”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”).

The level of autonomy corresponds to the seventh reduction of the initial binary matrix. The graph was integrated with standards from sections 3 (“students”), 5 (“evaluation”) and 6 (“institutional vinculation”), articulating 1 source standard (Q.37 standard), two intermediate standards (Q.56 and Q.60 standards), and 1 top standard (Q.67 standard). The standards at this level are characterized by being little influential or driving and little dependent, they represent past trends or inertia of the standards related to this level. They reflect a certain autonomy because in their structure they are not determinant for the future of the educational project and do not constitute a challenge for excellence, however, they must be aligned with the mission and the learning results of the educational program, so that the value is redimensioned. attributed to these standards so that they have a greater influence on the development of quality through integration with the standards with which they are related and are located in sections 3 (“students”), 5 (“evaluation”), 6 (“institutional vinculation”) and 7 (“administration and resources”), as shown in Figure 7.

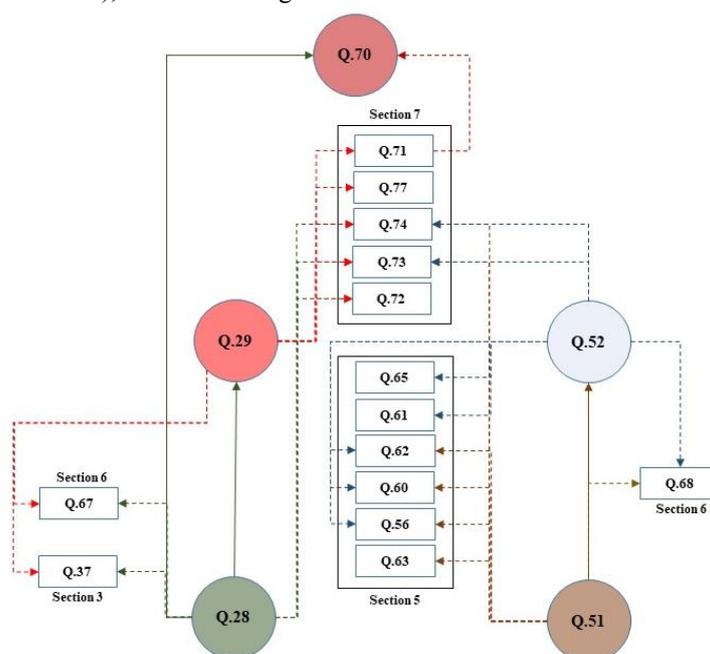


Figure 6. Adjacency graph of the level of objectivity of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

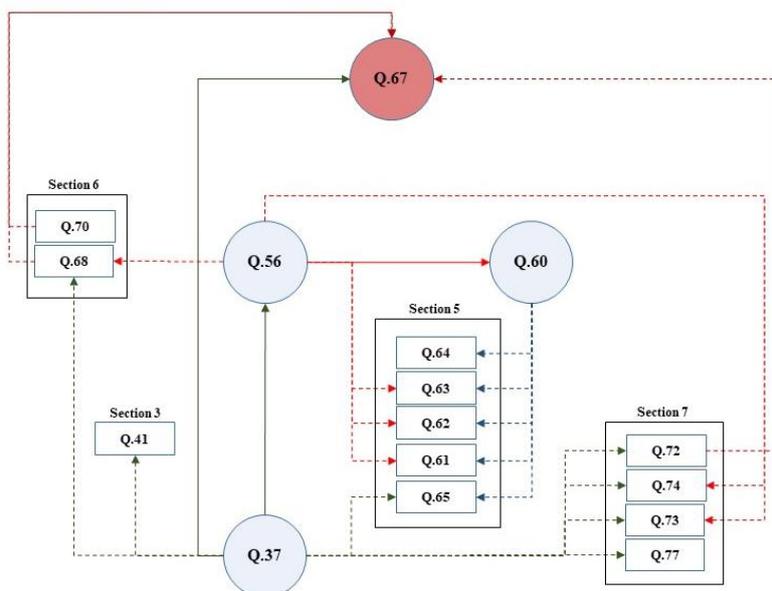


Figure 7. Adjacency graph of the level of autonomy of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

The level of results corresponds to the eighth and last reduction that was made to the initial binary matrix. The graph was integrated with standards from section 5 (“evaluation”) articulating 1 source standard (Q.61 standard), two intermediate standards (Q.62 and Q.64 standards) and two top standards (Q.63 and Q.65 standards). Standards at this level are characterized by low motor skills and high dependency. They represent the expected result when projecting into the future, which is why they require close follow-up and monitoring to verify consistency with the levels that precede it. In this sense, it is advisable to analyze them after compliance with the standards to which they are related, which focus on standards in section 6 (“institutional vinculation”) and section 7 (“administration and resources”), as shown in figure 8.

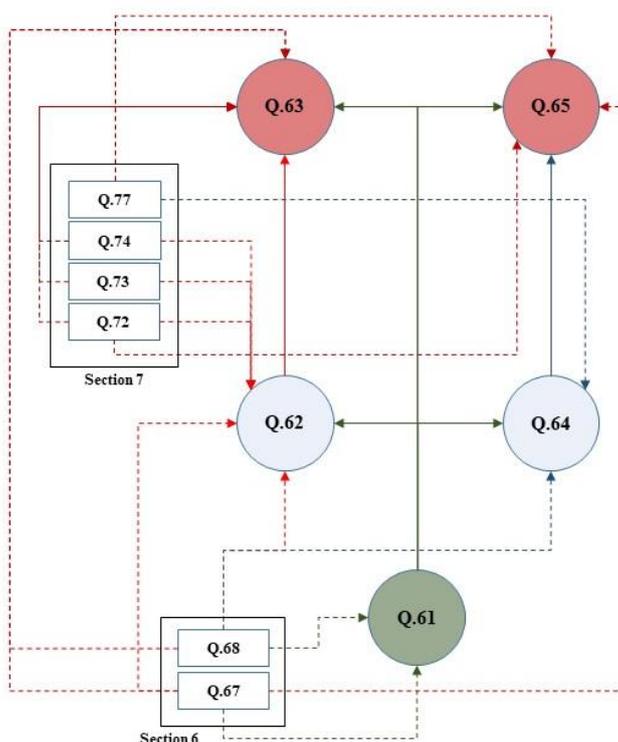


Figure 8. Adjacency graph of the level of results of the Q standards of the 2018 Self-Assessment Instrument of the Mexican Council for the Accreditation of Medical Education.

IV. Discussion

The horizon of understanding from which it is possible to analyze excellence in medical education continues to generate debates in the international community. Currently, excellence is understood as a multifactorial educational phenomenon associated with educational quality, which must be permanently built in such a way that it transcends the educational discourse and materializes in the reality of the medical student for the benefit of society in general, and of the health system. health in particular ^[13]. In this line of reflection, Grifoll^[32] exposes the need to build a theoretical-conceptual framework that makes it possible to promote a culture of excellence in quality in higher education. Thus, COMAEM programmatically exposes the scenario from which it aspires to promote excellence in medical education; which is reflected in the integration of standards of excellence to the SAI2018-COMAEM.

This approach is based on the classic concept of excellence in terms of full compliance with the standards defined for this purpose. However, in the construction of the statements that describe the standards, the influence of the WFME^[12] is recognized when using the term "should" in each standard and indicator of excellence, which implies that the "spirit of the standard" lies in promoting the development of excellence in medical education in Mexico. This double meaning in the understanding of the Q standards generates a conflict in the interpretation of each indicator to satisfactorily comply with the evaluation criteria requested in the standards.

In this scenario, the presence of Q standards in the 7 sections of the SAI2018-COMAEM guarantees that the medical school develops activities based on a comprehensive approach to excellence. Thus, the results show that the sections aimed at evaluating the study plan and assessment, which concentrate 50% of the Q standards, are related to the rest of the sections of said instrument; which is consistent with what is reported in the international literature and with the model of the "four wheels of the car of excellence", through which Campos^[33] indicates that excellence should focus on the "updated medical paradigm", "balanced teaching", "appropriate environments" and "self-regulated learning". The 40 Q standards address, to a greater or lesser extent, each one of these "wheels of the car".

Using the Morganov-Heredia technique to identify the source standards, intermediate standards and top standards represented the first approach to the structural analysis of Q standards. The results obtained show that the 14 source standards are located in sections 1 to 5, which it allows the independence of the dimensions included in each section, since the source standards are the starting point in carrying out the self-assessment as they are the standards that do not have antecedent standards.

Similarly, sections 1 to 5 contain the 16 intermediate standards. These can have a double function in the antecedent-consequent relationship. At some point they can be the antecedent for the fulfillment of a subsequent standard with which it is related, or they can be the consequent of the standard that precedes them in the relationship they establish. These types of standards make it possible to establish relationships between the different sections.

Finally, the top 10 standards are distributed in sections 5, 6 and 7. This distribution implies that the last 3 sections of the SAI2018-COMAEM are aimed at evaluating the expected results in the curricular project, taking into account the different aspects that contribute to the development of educational excellence.

The structural analysis of the adjacency graph to represent inter-standard coherence made it possible to identify 8 levels of analysis (trigger, contextual, activation, regulation, challenge, objectivity, autonomy, and results). These levels are based on the context of the criteria evaluated by each group of standards, as well as on the influence they may have on other standards of the same level or with standards from different sections to which they are related.

In this sense, the trigger level articulates standards related to academic freedom, transparency in decision-making, governance structure, and administrative quality; that by establishing the actions that strengthen these areas, it contributes to detonating the excellence of medical education, addressing aspects of the 7 sections listed to prepare the self-assessment. Recovering the analogy of Campos ^[33], it is the ignition that will start the "wheels of the car of excellence).

The contextual level is focused on standards associated with promoting different actions related to the achievement of the mission of the medical educational program; which explains the absence of top standards and relationships with standards in the curriculum section.

The activation level addresses the analysis of the educational curriculum in its relationship with different aspects such as the mission, continuous learning and the development of information and documentation technologies (ICT). At this level, the grouped standards imply strategies and actions that allow activities to stand out that will lead to compliance with the standards of the curriculum and evaluation sections, as central axes of excellence in medical education.

The level of regulation goes from the educational experience to the feedback of educational research to the educational program. At this level, accountability and the contribution of clinical sciences to the curricular

project are incorporated, hence the regulatory approach of this level, since it makes it possible to activate actions that provide feedback to the entire medical school based on the recognition of its social commitment.

The challenge analysis, its purpose is to rehabilitate the influence of the contribution of biomedicine, medical humanities and social sciences applied to medicine, in conjunction with the introduction of ICT, monitoring of student academic progress and institutional autonomy for use the resources. All these elements constitute a challenge in the development of excellence in medical education.

The objectivity analysis refers to the assessment, in the concrete reality, of the clinical fields and clinical training scenarios, the evaluation of learning through reliable and valid instruments, to generate strategies that fundamentally strengthen the evaluation section. , as well as administration and resources.

The level of analysis of autonomy is aimed at generating policies, strategies and actions that promote the development of the evaluation and administration and resources sections. So that the standards included at this level do not work autonomously in relation to the rest of the Q standards. Thus, instead of leading to an inappropriate interpretation of the criteria to justify their compliance, they contribute to providing added value to the process. in terms of excellence in medical education.

The level of analysis of results has the purpose of assessing the effort of the medical school to achieve excellence by analyzing the follow-up of graduates, curricular updating, information and feedback to the study plan, to culminate with the evaluation of effectiveness. institutional in terms of the achievement of the mission and the learning outcomes that characterize the educational program of the medical school.

It is important to note that the study carried out is the first international approach to understand the structural logic of the actions that accrediting agencies use to promote levels of excellence. For this reason, it is not exempt from limitations, such as the absence of empirical studies that contribute to the analysis of the different Q standards defined by COMAEM, so that a certain level of subjectivity can be attributed to develop the study; however, the use of the Gadamerian hermeneutics approach and the Morganov-Heredia technique help to limit the subjectivity bias of the study. Another relevant limitation is the absence of empirical evidence that contributes to complementing and contrasting the results obtained through the theoretical and documentary analysis of the Q standards. However, this limitation opens horizons for the development of research processes in the field of excellence. in medical education; In addition, the results obtained in this study contribute to the understanding of the Q standards in such a way that the analysis is facilitated when the academic leaders of the medical school develop the self-assessment report.

V. Conclusion

COMAEM has defined in 2022 the strategy to promote excellence in medical education by meeting 25% of the Q standards; however, it does not have a theoretical-conceptual framework that shows the horizon of understanding on which it is possible to analyze the construction of the standards.

Through the educational structural analysis carried out, source, intermediate and top standards were identified, but not isolated, which allows us to affirm that the level of congruence of the Q standards is 100%. This congruence is also reflected in the levels of analysis that were characterized and that ascend in level of complexity from the standards that contribute to detonating the strategies and actions for the development of excellence, to the evaluation of the results in terms of the achievement of the mission and learning outcomes of the educational program.

Finally, it is possible to conclude that the standards of excellence included in the SAI2018-COMAEM, are understood from the concept of excellence as a process in development, with different levels of analysis located in the concrete reality of the medical school, and with a 100 % of congruence between standards.

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