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Components of curriculum supervision regarding the accountability of universities of medical sciences

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Abstract:

BACKGROUND: This study was conducted on accountability, aiming to design components for monitoring the curricula of universities of medical sciences.

MATERIALS AND METHODS: This study was a developmental one, conducted in Isfahan University of Medical Sciences with the document and literature review, a focus group, and a survey from 2018 to 2020. The first version of the components was designed by the library research and content analysis method. Following developing the initial tool, its validity was evaluated with a focus group, and the questionnaire was prepared according to face and content validity.

RESULTS: In this study, 73 components were designed in eight domains for curriculum supervision, including requirements (12), needs and goals (6), content (10), teaching–learning strategies (10), educational materials and resources (5), educational time (2), educational setting (10), and evaluation (18).

CONCLUSION: The components of curriculum supervision were designed due to their importance in the evolution and innovation of medical sciences, particularly accountability in the education system, and lack of relevant research. With these components, the current and optimal status of curricula can be determined in universities.

Keywords:

Accountability, curriculum leadership, curriculum management, curriculum supervision

Introduction

Supervision completes the management cycle as an essential part of the unavoidable activity in any educational institution, especially in medical science universities.^[1] It is an effective tool to ensure access to quality.^[2] Educational institutes' supervision in general and curriculum supervision, in particular, are at the heart of educational management.^[3] Higher education curricula are among the factors playing an important role in achieving its goals.^[4] Curriculum supervision, including observing teaching and learning, assisting the instructors in individual and group career progression and evaluating them,

researching, and reviewing the curriculum as a distinct educational function, handles specific roles and responsibilities related to organizational, scientific, cultural, and professional dynamics.^[3]

Nature and approaches to the importance of curriculum supervision are perceived differently in various areas of education;^[3] however, there is a strong agreement among curriculum planners about curriculum supervision, including performance monitoring, information sharing, and problem-solving.^[5] In addition, Cobbold *et al.*, have suggested promoting job growth, assessing competency, maintaining harmonious working relationships, identifying teachers' weaknesses, providing

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support services to subordinates, and ensuring strict compliance with the rules.^[3] Eshun *et al.*, argue that there are different methods of curriculum supervision depending on the educational policies of institutions and countries; with all their differences, an agreed procedure should be established, which is lacking at present.^[6]

Jonyo and Jonyo have shown in their research that curriculum supervision is surrounded by controversy and power struggles, somehow leading teachers to resist, considering observers as system executioners. Most postmodernists, for example, have criticized supervision models for their inflexibility, classification traits, and authoritarianism. They argue that the supervision reduces teachers' independence and creativity to the standard level, forcing them to admit errors and imposed solutions. On the other hand, some believe that curriculum supervision gives supervisors and administrators more information and a deeper insight into what is happening around them; so, instructors learn to identify the barriers and confront their challenges.^[7] Instructors and administrators are jointly responsible for planning and the entire curriculum.^[8] Therefore, supervision is proper when it is received through cooperation between teachers, curriculum specialists, and administrators to improve education.^[7] Although many studies have shown the importance of supervision in curriculum leadership,^[8,9] unfortunately, university administrators and faculty members often focus on administrative and financial issues rather than educational activities.^[10] Stark believes that curriculum supervision, as an essential part of curriculum leadership, has been neglected by the department heads and even those who recommend the main functions of leadership to them. The department heads do not have enough preparation and knowledge for their role and enough time to boost a career when they accept it.^[11] However, the factors hindering the fulfillment of this role, according to Cardno and Collett, include high managerial workload, high expectations of employees and learners, and external demands.^[12]

According to the above studies, to succeed in supervision, specific criteria and standards are needed; but, the lack of accurate and objective indicators is one of the challenges of existing education systems.^[13] While using these standards, an effective leader can determine the extent to which tasks and functions conform to standards and continuously improve quality by choosing the instructors as supervisors. Therefore, for the continuous reform of the university system, it is necessary to establish an efficient supervision system to improve the quality of education and research. It has prompted the country's education officials to target accountability in the education system in the reform plan of medical science universities. It is not sudden and temporary and is supposed to demonstrate that faculty members and

students are serious about teaching and learning and that resources are being expended efficiently and effectively. Managers and faculty members must be accountable to the high-quality educational standards of the college or university. Despite its importance, researchers have unfortunately not been able to find research in this area. Therefore, this study was conducted on accountability, aiming to design components for monitoring the curricula of universities of medical sciences.

Materials and Methods

Study design and setting

This study is a developmental one, conducted at Isfahan University of Medical Sciences in 2018–2020 using document and literature review, a focus group, and survey; it is the continuation of larger projects called curriculum leadership and curriculum management.

Data collection tool and technique

This study was conducted in two stages. The first step was taken using library research, searching in books, dissertations, articles, regulations, and other documents related to the content analysis method. Using the terms Medical Subject Headings (MESH) of "curriculum supervision," "curriculum leadership," "curriculum leadership," "curriculum management" in databases including "Eric," "Scopus," "PubMed," "Google Scholar," "Web of Science," "IranMedex," "MagIran" and "Sid," the review was conducted. All relevant full-text studies were selected. The components of monitoring the curriculum compilation and implementation were coded, typed, and classified into meaningful sentences. A total of 118 codes were extracted and classified into eight domains. After determining the domains and components, the collected data was reviewed several times. Some components were merged or removed due to overlap or ambiguity, while others were modified to become clearer, and finally, 101 components were selected.

Study participants and sampling

During several sessions, the focus group was reformed with the research team, namely specialists in medical education and curriculum planning. After three stages of modification, some were deleted, some were merged, and some were changed. Finally, the intended tool was developed with 70 components. After the initial development of the tool, it was assessed by face and content validity. The face validity was determined both qualitatively and quantitatively. For qualitative evaluation, the components were provided to 12 faculty members and Ph.D. students of medical training. They were asked to examine them by appropriateness and optimal relation with the domains and words reflecting the concept. For quantitative evaluation, the components

were provided to 12 faculty members and Ph.D. students of medical training. They were asked to remark on the tool's appearance, namely, relevance, clarity, and simplicity, according to the purpose of the study.

Regarding the criterion of simplicity, the four-point Likert scale includes the following components: 1 - It is incomprehensible, 2 - It needs a lot of change, 3 - It needs a few changes, and 4 - It is entirely understandable. Regarding relevance, the four-point Likert scale includes the following components: 1 - It is irrelevant, 2 - It needs a lot of change, 3 - It needs a few changes, and 4 - It is entirely relevant. Regarding the criterion of clarity, the four-part Likert scale includes the following components: 1 - It is vague, 2 - It needs a lot of change, 3 - It needs a few changes, and 4 - It is thoroughly easy to understand. The proportion of being completely clear, relevant, and understandable was calculated for each component. If the acceptable percentage of each component assessment was below 70%, it was reviewed. To quantitatively calculate the content validity ratio (CVR), 13 medical education and curriculum specialists were asked to comment on the importance and necessity of each component. After collecting comments, several ones were removed or modified, and finally, 73 ones were selected.

Ethical consideration

Informed consent was obtained from all individual participants because the research involved no risk to the subjects and no adversely affects the rights and welfare of the subjects. "The study was conducted by the financial support of the National Center for Strategic Research in Medical Education, Tehran, Iran, with the project number of 970869."

Results

This study was conducted on accountability, aiming to design components for monitoring the curricula of universities of medical sciences using a developmental method. A total of 73 components were included in eight domains for curriculum supervision, organized in the domains of requirements (12), needs and goals (6), content (10), teaching-learning strategies (10), educational materials and resources (5), educational time (2), educational setting (10) And evaluation (18) [Table 1]. Face and content validity were qualitatively examined, and the comments were taken into account. The impact score of the items was calculated to quantify the face validity according to the opinions of experts. Those which are higher than 1.5 were kept, and the rest were omitted. The CVR was used to quantify the content validity, based on the table of Lawshe. According to the participation of 13 experts, the ratio was at least 0.53. The components with that ratio and above it remained.

Discussion

This study was conducted on accountability, aiming to design components for monitoring the curricula of universities of medical sciences using a developmental method. In this study, 73 components were included for curriculum monitoring and designed in 8 domains, including requirements, needs and goals, content, teaching-learning strategies, teaching materials and resources, educational time, educational setting, and evaluation, respectively. Monitoring as a structured approach to deep reflection on performance ensures the proper implementation of the whole curriculum cycle, leading to the goals' achievement.^[2] Therefore, according to the study, it includes all factors involved in the growth promotion and development of the learning process. Curriculum planning is a process, each stage of which requires important and varied decisions. However, unfortunately, most administrators in practice are limited to monitoring the teacher training,^[14] provided specific criteria and standards are needed to supervise the entire curriculum cycle and evaluate the level of success.^[15] For this reason, it is necessary to include supervision in all curriculum components according to what we have obtained in our study.

Similar features and roles consistent with our study have more generally been addressed in other curriculum supervision studies. However, some have not been mentioned in any available sources, less mentioned, or included in other features (3.5–7). For example, the educational setting in this study had eight components. Manufactured tools are always compared with similar available ones to determine their detection and evaluation rate. However, in this study, due to the lack of similar ones, it was not much possible. However, with the available texts, the comparison was possible in general. For example, Hawkins and Shohet consider the main focus of curriculum supervision on the regular setting, skill development, planning promotion, quality assurance, and standards maintenance.^[16] According to Bekoe, Eshun, and Attom, the curriculum supervision includes guidance, counseling to instructors and bringing them to the minimum standards of effective education; Developing the capability of teachers; Improving learners' learning; Adapting the curriculum to the needs and abilities of learners following national standards; And raising the level of service quality at the institutional level.^[17]

Requirements include overseeing issues, such as advocacy policies, appointing executives, timely review, professional development, and so on. It is consistent with the research emphasizing offering courses to professors based on their ability, expertise, interest, and experience and only inviting capable professors

Table 1: Domains and components of curriculum supervision

Domain	Components
Requirements	Having supportive policies; regular and continuous process for compilation and revision; designating responsible people to implement and change; communicating the curriculum to all benefactors; employing appropriate measures for timely review; supporting the development office roles; researching into education to solve problems; paying attention to international growth, professional development and curriculum design based on the communication program; curriculum alignment, appropriateness, relevance and coherence
Needs and goals	Updating needs based on up-to-date knowledge of the field, needs, and conditions of the community and learners; setting goals according to demands, facilities, and priorities; participation of all benefactors in setting goals; defining goals according to the perspectives and missions in the curriculum
Content	The content relevance to the goals; proportion of content volume (meeting the standard size of the content in proportion to the course); suitability of sequence, coherence, diversity, balance, recognition of repetitions, and elimination of duplications; selection of interdisciplinary and interprofessional education content based on needs; being up to date; availability and usability of content
Teaching - learning strategies	Connecting scientific principles to the concrete situation and combining thought and action; establishing a collaborative learning environment; appropriate grouping of learners; applying the active, diverse, and appropriate teaching methods; usefulness of teaching resources in learning; timely and appropriate feedback to learners; paying attention to the talents and creativity of learners; effective lesson planning (introduction, main topics, summary and break); encouraging thinking; analysis and searching; asking students' opinions
Educational materials and resources	Allocating adequate, up-to-date, and health educational facilities, materials, and resources; financing and attracting potential financial support; devoting a reasonable amount of time to training, rest, and support; providing sufficient skilled staff
Educational time	Devoting sufficient time to education and performing time management in the classroom
The educational setting	Teamwork and appropriate communication; developing trust, sense of belonging, and intimacy; establishing healthy scientific relationship and interaction between professor and student; encouraging a creative approach; strengthening connections between students and their peers within a university and inter-university; making sense of commitment and responsibility to the job description; doing things within the framework of regulations, adhering to discipline; fostering a culture of accountability to oneself, audiences and managers; ensuring the fair distribution of responsibilities among professors; developing the reliable indicators of quality for evaluation and promotion of the teacher
Evaluation	The two-dimensional table of the test; designing questions according to the topics and resources taught; standard question bank; proportional formative and cumulative evaluation; appropriate mechanism for dealing with student protests; quantitative and qualitative analysis of academic achievement tests; comprehensive assessment at the time of graduation based on the needs of the community; assessing students' academic achievement; indicators and standards required for course evaluation; defining the evaluation process and its implementation; emphasizing the continuity, realization, and use of evaluation results to correct the lesson; supervision and assessment of the faculty; accurate feedback to the faculty to modify; judging, encouraging, punishing, ranking and correcting actions based on the results of faculty evaluation; making continuous correction and improvement based on monitoring and evaluation results

to teach.^[18] In the domain of needs and goals, the supervision was provided according to up-to-date knowledge, community's needs, worldwide demands, and facilities, with the participation of all benefactors. Furthermore, in the content's domain, its relevance to objectives and observance of sequence, order, diversity, balance, coherence, awareness, availability, and interdisciplinarity was monitored. Given that conducting the needs assessments is essential to show the needs of the curriculum process and improve it;^[19] Therefore, regular communication and consultation with the community, including employers, and graduates is a way of receiving market feedback.^[20] Numerous studies consistent with our research have emphasized flexibility and diversity,^[21] balance and equilibrium,^[22] relevance,^[23] and attention to the interdisciplinary approach.^[8]

In the teaching-learning strategies' domain, items including integration of thought and action, collaborative learning environment, grouping, active and diverse teaching, and asking students' opinions were considered as components of supervision which are consistent with a study emphasizing the establishment of appropriate

strategies, context, and conditions of practical training, informing students about their curriculum, and active teaching approaches.^[18]

In the domain of educational materials and resources, providing and attracting financial, material, and human support and adequate up-to-date and appropriate support were under supervision. In the educational time domain, allocating sufficient time and providing proper management were determined. Other studies have emphasized monitoring how to use human and physical resources,^[18] providing teaching and learning resources as roles of curriculum supervision.^[17] Ensuring compliance with the rules governing the institutions should be considered as its main goal. It enables the curriculum administrators to follow what is and has been in the curriculum implementation guide.^[3]

Proper teamwork and communication, developing trust and intimacy, encouraging creativity, commitment, and responsibility, adhering to discipline, fair allocation of responsibility, and accountability were the main components of supervision in the domain of educational

setting. Consistent with our findings, Valizadeh also believes that motivation and mutual trust create good conditions for self-direction and self-confidence in under supervision groups.^[2] Motivated teachers need less supervision.^[24] Supportive supervision is a learning situation for both the supervisor and the instructor.^[7]

In the evaluation domain, supervision components are classified into three sub-domain of student, course, and teacher, including formative and summative evaluation, quantitative and qualitative analysis of exams, faculty evaluation with appropriate criteria and methods, and relevant feedback and actions. One study emphasized that feedback, including immediate, person-to-person feedback through a conference, a two-way dialogue between the supervisor and the supervised person, and the recording of all formal and informal meeting information, can prove very useful to curriculum monitoring.^[17] Wiggins also points out the necessity and quality of feedback and believes that helpful, tangible, practical, user-friendly, timely, and consistent feedback leads us to the goal.^[25] Another study has focused on examination evaluation, intelligent feedback of evaluation results to professors, appropriate measures for timely correction of the curriculum, and so on.^[18]

The study's strengths and opportunities include: Introducing innovation, reviewing the opinions of experienced, capable, interested, skilled professors in reviews, initiatives, and innovations in the curriculum subjects, examining the detailed aspects and dimensions of curriculum supervision (contrary to the very general-purpose tools available in the texts), paying attention to the educational setting that is often neglected, and using the authors' experience of previous and extensive studies (the compilation of books, dissertations, and numerous articles in this field).

Limitation and recommendation

Lacking referable tools and sources due to the pure essence of this field and accessing the general-purpose tools can be mentioned among the weaknesses and limitations of this study. Planning to hold face-to-face and virtual workshops for all principals and faculty members to get acquainted with the components of curriculum supervision and curriculum supervision planning due to current face-to-face and virtual education in the university is also one of the suggestions of this study. This tool is suggested for interpreting and implementing curriculum monitoring activities by administrators, faculty, and students in the current circumstance.

Conclusion

Considering the importance of curriculum supervision in the evolution and innovation of medical sciences,

especially the accountability in the education system, and lacking enough research in this regard, according to the present study, curriculum supervision included eight domains and 73 components with necessary details in the form of prepositional phrases. The validity was proved by quantitative and qualitative assessments. The components were proportionally distributed in two dimensions of supervision and curriculum. Providing curriculum supervision components to determine the current and favorable situation in universities can take a small step towards its importance.

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Conflicts of interest

There are no conflicts of interest.

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