



The Components of the Development of Faculty Members at Universities of Medical Sciences in Iran and the World: A Systematic Review

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Abstract

Context: In order to fulfill its tasks and goals, higher education systems need qualified and competent faculty members. The need for faculty development programs is currently obvious.

Objectives: The present study aimed to determine the components of faculty development at universities of medical sciences in Iran and across the world, in which, the concepts and dimensions of development, the evolution process and the programs for faculty development of universities of medical sciences were investigated up until now, in Iran and other countries.

Data Sources: To obtain the required resources, data were collected through a systematic search in Google Scholar, Medline, Web of Sciences, AIR, ERIC and Springer, ProQuest, and Elsevier databases and from published articles in the Iranian journals available at the SID and IranDoc databases. The articles were selected in accordance with the inclusion criterion of addressing the components of faculty development from different perspectives. Finally, 40 articles carried out in Iran and some other countries and published between 1966 and 2017 were found.

Results: In this study, four dimensions of individual, professional, educational, and organizational development were identified. However, most studies were concerned with educational development and most of the given theories were about training faculty members via scientific workshops and seminars. Furthermore, evaluations were often conducted in the same vein, and in most studies, an organizational perspective was adopted and the focus was on organizational goals.

Conclusions: Considering that the requirements and conditions of faculty members vary across different universities, disciplines and conditions, the development programs should be designed to target specific subgroups and cover a wide range of skills, not just education.

Keywords: Faculty Members, Development, Universities, Medical

1. Context

Higher education systems need qualified competent faculty members in order to fulfill their tasks and goals. In fact, faculty members play the biggest and most important role in improving the quality of higher education as they constitute the main body of universities. Therefore, it is necessary for higher education institutions and universities to pay special attention to these key and valuable resources and plan for their development (1, 2). The development of faculty members has currently become an important part of higher education and in most universities, especially universities of medical sciences, development activities are formally designed for faculty members.

Moreover, the interest in research is growing in this area (1). Before 1960, universities and higher education institutions did not have a proper definition of the faculty members' development programs. In the late 1960s and early 1970s, the faculty members' development concepts and plans were proposed in the higher education discussions (3). The growth of research in this area has been for engaging many scholars, nevertheless, it is still considered a new science, and there is a great need for research in this field. Meanwhile, regarding the multiple roles of faculty members of universities of medical sciences and the challenges ahead, this issue seems more important, especially because faculty members do not pass any specific educa-

tional experience for their role as a faculty member during their studies (4).

The faculty members' development refers to a wide range of activities that institutions employ to renovate or assist faculty members to perform their different duties (5). Over the past decades, several definitions have been used for the development of faculty members. In Gaff and Simpson study, faculty members' development has been defined as "the activities that help teachers improve their skills, design better curriculums, and improve the organizational atmosphere for education" (6). In the studies of Centra, it refers to a wide range of activities used by institutions to refresh or assist faculty members in performing their expected roles (7). Yamani et al. defines the faculty members' development as all activities designed and implemented to improve the performance of faculty members in all aspects and dimensions of their professional life (8). Bland and Schmitz have stated that "the faculty members' development includes a planned activity or a set of programs designed to prepare the institutions and faculty members for their various roles" (9). This broader and more comprehensive definition is generally accepted by the medical education community. The development of professors has been defined in various ways in the literature. Educational development, staff development, faculty development, and academic development are all used in the higher education system in different parts of the world. Although these terminologies have slightly different meanings, they have a common core that refers to the work done by researchers to study and enhance the professional performance of university academia. Based on the importance of the development of faculty members in medical sciences, the studies conducted in Iran and the world expressed different components.

2. Objectives

This study, with a systematic approach, reviews the published articles on the components of the development of faculty members at universities of medical sciences in Iran and the world to give a summary of various findings of different researchers.

3. Data Sources

The present study is a systematic review on the development of faculty members of universities of medical sciences and the results are based on studies conducted in Iran and other countries which are extracted from different databases. In order to obtain the required resources, data were collected from Google Scholar, ScienceDirect,

Medline, Web of Sciences, AIR, ERIC, Springer, ProQuest, and Elsevier. Besides, the articles published in Iranian journals were explored at SID, IranDoc, and Magiran through a systematic search. In the first stage, the research question was "What are the components of the faculty development of medical sciences in Iran and the world?" Research key words were determined to find answers to this question. The researcher first listed all the studies on the development of faculty members in the period 1966-2017, whose titles contained the phrase "development of faculty members", and then other key terms such as empowerment, improvement or development were searched with the main components of development, namely, "educational development", "professional development", "faculty development center" and "individual development". The initial search in the title, abstract and keywords retrieved 325 articles, of which 207 articles with related titles entered the abstracts list because it was necessary to select the articles with a broader perspective on the topic of development. After these steps, the irrelevant articles were deleted, and those published in invalid journals, repetitive articles, those out of the study period, and those published neither in English nor in Persian were excluded. Finally, 40 articles entered the analysis stage.

Therefore, the full text of the articles was analyzed for the purpose of the study. A summary of the studies was prepared, including the article language, the studied country, the goals and method of study and the obtained results. The data were then analyzed and their results were interpreted.

The limitations of the present research include the lack of access to articles in languages other than English and Persian and this lack of access was not associated to those published online.

4. Results

The research scholars in the field of development of faculty members rely on specific assumptions, which can be helpful to better understand this field.

- The development of faculty members refers to a process of enhancing the current situation that varies from institution to institution, college to college and one department to another (10). This development process varies concerning the capabilities and facilities of a university and its faculty members, as well as the different temporal and spatial conditions. The programs administered in an institution may not be effective at other institutions (11).

- The specific needs of faculty members should be identified when developing faculty members (12). New behavioral patterns are formed in children along with physical growth; adults, however, need to grow various social roles,

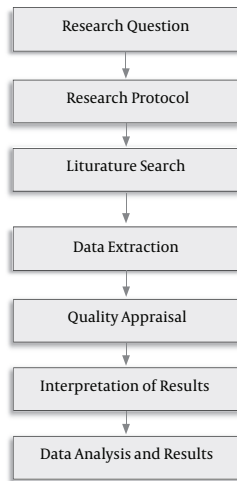


Figure 1. Systematic review procedures

for which motivation and feeling of success are necessary. Faculty members would therefore not seek development without feeling successful and motivated (13-15).

- Planning does not necessarily cause changes, and the determination to make changes can cause resistance. To create changes, the personal views need to be changed first, followed by sharing the vision and goals of the intended change (16). The goals proposed for the faculty members of universities of medical sciences are defined as per university goals. The vision and individual goals of the faculty members should ultimately conform to university goals (17). In recent years, much emphasis has been placed on the importance of focusing on faculty members' development programs, which are not only based on individuals' needs, but also on organizational aspects. Although individual improvement is undoubtedly vital, it is sometimes less important than organizational development. Hence, faculty members often need to strike a balance between the goals of personnel and those of the institution and organization (9).

Most development centers provide similar programs and services, and traditional organizational structures still dominate the centers for faculty members' development. In most universities, traditional strategies, including participation in classrooms, educational workshops, assemblies and conferences, are used for specific, specialized, educational and research topics (18). The most common formats include workshops and seminars, short courses and fellowships and scholarships, and alternative formats include integrated longitudinal plans, decentralized activities, mentoring courses, counseling, self-guided education and computer-assisted learning (5).

- Comprehensive programs for faculty members' development should be formally established by considering the specific features of institutions and the requirements of different disciplines. Supporting sources are crucial for increasing the program quality, since the creation of a formal and organizational program appears to cause widespread acceptance and participation in the development activities by faculty members. One of the main elements of development program for faculty members can point at counseling, reducing workload, increasing support and workshops (19). A comprehensive plan for faculty members not only helps accomplish the university goals, it can also lead to the realization of university goals in a wider community (20).

- Faculty members' development is a continuous process requiring the expenditure of a great deal of time, budget, and effort. Resource accessibility for supporting faculty members' development, i.e. financial resources including external sources or research grants, technological or organizational resources, and reducing faculty members' workload are the factors contributing to faculty members' development (19).

- The positive reinforcement of leaders' and policymakers' program for implementing a development program for faculty members is an important issue (21) that differs with the capacities and facilities of a university and its faculty members and with different temporal and spatial development conditions. Generalizing development needs and setting rigid rules and regulations for faculty members' development in different universities is therefore futile and may lead to the demotivation and frustration of faculty members. Localizing the development model in different universities and institutions is therefore crucial (22).

- Development programs vary in terms of structure and function. The most appropriate alternative depends on key factors including financial support, human resources, university resources and recruitment of interested employees. No models can be considered perfect from all aspects; each model has its own advantages and disadvantages (23, 24).

- Faculty members of medical departments do not receive any training in professional development before beginning their career. Given the complexity of their occupational duties, they need to receive training regarding a wide range of professional development skills (2).

In the 1960s, faculty member development was seriously proposed and has continuously grown up to date in terms of quantity and in other development fields, most of which established within different structures. The main focus, however, appears to have been on learning and education in all types of institutions (25). In fact, most of these

centers offer similar programs and services, while traditional organizational structures still govern in many of these centers (18). The first article published on the development of faculty members comprised a report on a survey of medical faculty members. This study was conducted in the US in 1977, and showed that most faculty members feel under-prepared to play their role as a teacher and welcome the opportunities provided to learn more about education and teaching. Thereafter, Jason worked through educational workshops, films, and educational materials with a special emphasis on group discussion and received help from the Association of American Medical Schools (AAMC) to create clinical education opportunities. Today, a more stringent student evaluation of faculty members in the US higher education system has led to the emergence of programs that improve the teaching methods of faculty members in colleges and universities. The most common type of faculty development activities in medical reports involves teaching methods improvement. These common topics found in all articles on different fields of medical sciences include curriculum design skills and learner support and assessment. How these competencies should be taught is also addressed in literature, with a focus on answering the major question of what knowledge and skills and attitudes are required for faculty members involved in medical sciences education. All these articles concern educational development plans, faculty member training programs and methods of evaluating these programs (26, 27).

The most common type of faculty members' development activities in medical reports is associated to education method improvement. Although teaching is the main role of most faculty members, the education quality is affected by the performance of a faculty member in other areas such as research; faculty member development should therefore be also incorporated in areas which are not limited to education and teaching (27).

Although the term development of faculty members' is often used to describe the activities and programs designed to improve faculty members' teaching skills, scholars and experts in this field have recently considered the term for development of the activities and plans associated to the multiple roles of faculty members (as mentor-researcher-faculty member and member of a larger academic community), and to support them in their multiple roles such as education, research and services, considering four types of development in their plans, i.e. individual, educational, organizational and professional.

- Steinert argued that faculty members' development involves the preparation of individuals' knowledge and skills in terms of teaching and learning, curriculum design and planning, evolution and assessment of learners, evaluation of programs and leadership, and seeking knowledge

and research (5). It can also change or reinforce the attitudes and beliefs about the different aspects of the roles and responsibilities of faculty members (28).

- Both organizational and individual development is essential for developing faculty members (29). Boyce et al. emphasized the organization, in terms of structure and roles and responsibilities, student-related activities, teaching abilities, knowledge and research abilities as well as practical and professional abilities, i.e. leadership and professional planning, as the components required for a comprehensive model of faculty members' development (30).

- Bergquist and Phillips considered faculty members' development a combination of activities associated with individual development (changes in beliefs and values), educational development (changes in the process of communication and human interaction) and organizational development (changes in organizational structure and authorities) (29).

According to Wilkerson and Irby, a comprehensive faculty plan should comprise (A). Professional development (the promotion of scientific and research achievements) (B). Leadership development (fostering planning and change skills) (C). Educational development (teaching improvement through mentoring) and (D). Organizational development (empowerment and participation in targeting and policy planning and development of reward systems) (31).

- Camblin and Steger found the main development dimensions to comprise educational development (promoting the skills of faculty members in the application of teaching technology, curriculum and lesson plans), professional development (the growth and development of faculty members in their professional roles), organizational development (needs, preferences and organization of the university), occupational development (preparation for job promotion) and individual development (life planning, interpersonal skills, and individual faculty development) (32).

- Power classified faculty members' development into three levels of educational, professional, and organizational development and considered educational and professional development at the micro level and organizational development at the macro level (33).

- Steinert classified faculty members' development into five dimensions, namely (1) - Development in education (2) - Development for leadership and management (3) - Development for research (4) - Development for professional and academic progress and (5) - Development for organizational changes (5).

- Ghourchian et al. also divided development into three sections, namely organizational, individual, and moral development (34).

- Pourkarimi and Nave Ebrahim proposed three dimensions for faculty members' development, namely professional development (skills associated to teaching, service provision, interpersonal relationships, research, writing, technology and education), organizational development (creating motivation, academic leadership, organizational structure, organizational climate and culture, innovation in the design and implementation of the program, holding meetings, support, access to technology, reward system and networking between members and team-building) as well as individual development (independent action, autonomy and self-regulation, self-efficacy, empowerment, occupational guidance, creativity, risk-taking and innovation, job commitment, job quality, organizational wellbeing, professional moral and time management) (35).

- According to Pourkarimi, the factors influencing faculty members' development include rules and regulations, managerial support, program orientation, organizational structure, participation of faculty members and managers' attitudes. This author concluded that the factors predicting professional development include managers' attitudes and organizational culture, and that the predictor variables of organizational and individual development include managerial support and organizational culture. Moreover, he noted the methods required for faculty members' development, include educational workshops, educational seminars, study opportunities, inviting professors, consultation, research grant, facilitating access to scientific resources, educational and research awards as well as the factors affecting the effectiveness of development programs, include acceptance and organizational support, acceptance by faculty members, valid and appropriate and regular programs, considering a suitable leadership for the program, appropriate dissemination of information about development programs, focusing on one topic, establish relationships between development programs and reward structures, creating an atmosphere of interest and trust in the program, providing the required financial and human resources, strong managerial support, creating interest and motivation in faculty members and academic culture. Pourkarimi believed that proper leadership and accurate needs assessment are key factors contributing to the success of development programs (36).

The components and sub-components of faculty members' development were identified and summarized in [Table 1](#) through a literature review.

The faculty development of medical sciences can be considered in two general dimensions.

The first dimension focuses on the faculty and includes:

- Professional development such as the skill of providing specialized services and performing research projects

- Individual development such as managerial and leadership skills and life planning

- Educational development such as classroom management and mastery of educational content

The second dimension focuses on the contextual and environmental factors supporting faculty members and includes organizational development such as academic leadership and organizational culture.

[Figure 2](#) shows the conceptual framework of faculty development in medical education comprising the identified codes and primary and secondary components.

5. Discussion

Given the different definitions and attitudes of scholars towards faculty development, different approaches are proposed from different perspectives to help managers apply appropriate solutions to the faculty development. The present study was conducted to investigate these approaches through a literature review.

Although faculty members' development is a term often used to describe the activities and programs designed to improve faculty members' teaching skills (8), scholars and experts in this field have recently used the term "faculty members' development" for the activities and programs that focus on the multiple roles of faculty members (as mentor-researcher-faculty member and member of a larger academic community) (29). The main focus appears to have been on learning and teaching in all types of educational centers. In fact, most of these centers provide similar programs and services, and traditional organizational structures still dominate faculty members' development centers (18). According to Steinert, faculty members' development prepares knowledge and individuals' skills for learning and teaching, curriculum design, learner's evolution and assessment, program assessment, leadership and management and scholarship and research (5). This program can also reinforce or undermine the attitudes and beliefs about different aspects of the roles of faculty members and change or strengthen their responsibilities (5).

Research refers to the concept of faculty members' development with keywords such as development, improvement, promotion, growth, and advancement. A large body of research performed on faculty members' development focus on professional skills, whereas development and the effective aspects and the opportunities for the emergence of faculty members' competencies require further investigations. Research has been mainly focused on the organizational perspective and goals, and researchers have failed to adequately investigate faculty members as stakeholders. Programs for developing faculty members appear to be associated with holding workshops by the educational

Table 1. Indicators and sub-components identified for faculty members' development

Component	Researcher
Professional development	
Specialized services	Camblin and Steger (32), Srinivas and Adkoli (37), Centra (7), Pourkarimi and Nave Ebrahim (35) and Ahmady (17)
Research activities	Centra (7) and Pourkarimi and Nave Ebrahim (35)
Individual	
Organizational skills	Wilkerson and Irby (31), Skeff et al. (4) and Steinert (5)
Individual skills	Bergquist and Phillips (29), Camblin and Steger (32), Ghourchian et al. (34), AhmadAbadi et al. (38), Pourkarimi and Nave Ebrahim (35), Bland and Schmitz (9)
Ethics skills	Bergquist and Phillips (29), Ghourchian et al. (34) and Steinert (5)
Educational	
Teaching	Wilkerson and Irby (31), McKee et al.(18), Steinert (5), Pourkarimi and Nave Ebrahim (35), Centra (7) and Amady (12)
Design lessons and strategies	McKee et al. (18), Camblin and Steger (32), Wilkerson and Irby (31), Amady (12), Srinivas and Adkoli (37)
Assessment and advice	McKee et al. (18), Steinert (5), Wilkerson and Irby (31), Srinivas and Adkoli (37)
Organizational	
Policy making	Wilkerson and Irby (31), Camblin and Steger (32), Steinert (5), Clark et al. (38), Pourkarimi and Nave Ebrahim (35) and Bland and Schmitz (9)
Organizational structure	Bergquist and Phillips (29), Pourkarimi and Nave Ebrahim (35), Amundsen and Wilson (28) and Bland and Schmitz (9)

development centers for improving teaching. However, the demands of different disciplines still need to be addressed.

The two main types of development identified according to the findings were development with a focus on faculty member and with a focus on the organization.

Three main categories of components associated with the focus on faculty member are as follows: Individual development, Educational development and Professional Development, each with their own variables, which refer to the faculty's main competencies and skills. After reviewing the findings, eight categories of these variables were identified and categorized.

(1) Individual development emphasizes the dimension of attitude, focuses on the beliefs and values of the faculty, and refers to the faculty members' characteristics and capacities associated with the faculty itself (29). The indicators of individual development comprise organizational development (5, 31), individual development (18, 29, 38) and ethical development (5, 29).

(2) Educational development focuses on courses and curricula, and helps to improve the skills of faculty members in designing better educational programs with the purpose of empowering students for learning and preparing materials and facilities by faculty members, and includes activities that facilitate student learning, and provides educational materials and redefines the curriculum (6).

(3) Professional development is the set of competen-

cies required for faculty members to provide stakeholders with specialized services. Centra (7) and Pourkarimi and Nave Ebrahim (35) have separately presented a research dimension as an aspect of faculty members. Other researchers proposed a research dimension as a form of a professional dimension (32, 35).

The contextual issues associated with faculty member development have been rarely addressed in literature, with few studies addressing educational development, and holding faculty members responsible for planning. A review of literature also suggests the faculty members' need for training in the field of teaching for instance, and refers to evaluation methods, management and leadership strategies and research methodology. Individual, behavioral and organizational developments are also mentioned in literature with a focus on planning for training the faculty members. Moreover, how to evaluate faculty member development programs is discussed; the underlying factors contributing to faculty member development are rarely addressed. Certain articles refer to the result of the intervention in the behavior and practice of the faculty members, and the majority of discussions are on workshops and how they are administrated and assessed in terms of professional skills.

The components identified include policies and structures for focusing on the organization, which are used to somehow improve the organizational environment and support faculty member development (5).

Although some researchers have addressed the organi-

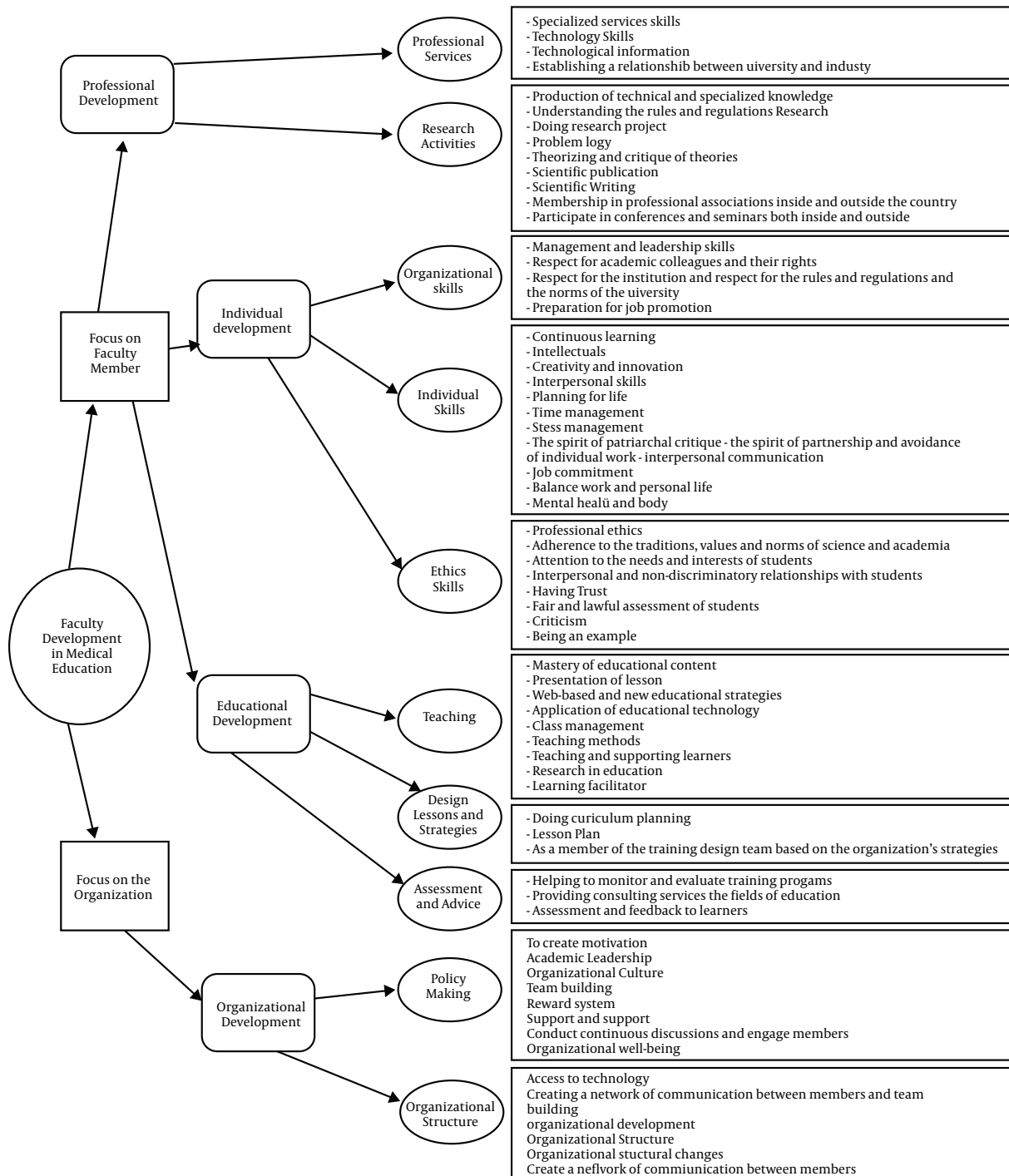


Figure 2. The conceptual framework of faculty development in medical education

zational culture, two areas have been mostly proposed for the organizational progress (6, 35, 36).

(1) Policies that are based on indicators, namely 'moti-

vation', 'academic leadership', 'team building', 'rewarding and encouraging', 'supporting system', 'attracting membership participation' and 'organizational welfare' (5, 31,

32).

(2) A structure that includes indicators such as access to technology, establishing a communication network between members and team building, improving the organizational environment and structural changes of organizations (28, 29, 35).

Faculty development cannot be properly planned independent of other important factors at play (22) associated with an effective faculty development program; for instance, this program should have a clearly defined mission, be systematically planned to target special sub-groups, should cover a wide range of skills including and not limited to education, should cover theoretical and practical applications of the programs, and more importantly it should obtain the faculty members' view of what is needed, obtain a broad understanding of the faculty members, target all faculty roles and should not be limited to the education and training that regularly occurs. Furthermore, the development of faculty members serves as a tool for improving and promoting organizational changes.

According to the results of the present study, managers and practitioners of the university are recommended to take a comprehensive look at the faculty development plans and consider all aspects.

Up-to-date executive plans are also recommended to be designed and implemented based on each of the components and sub-components identified for faculty development, and the results of the implementation of these programs to be assessed and evaluated.

Moreover, future research can test and validate the conceptual framework presented in this study in other statistical communities and using other methods.

6. Conclusion

Given the current evolutions in higher education systems, the need for faculty members' development is increasingly felt. Methods used in many institutions over the past few decades are, however, inconsistent with the current needs and challenges of faculty members (39). The majority of studies are focused on educational development. Most theories have suggested training faculty members through workshops and seminars, and the evaluations performed were mostly in the same direction. Research reveals that the needs and conditions of faculty members in different universities are distinct and unique and differ by discipline and condition. The development of faculty members cannot be similarly envisaged in all institutions or professional stages. Much of the research on development appears to be focused on areas different from medical sciences, while the conditions of the faculty of

medical sciences significantly differ from other higher education disciplines. Moreover, universities and higher education institutions have special targets such as educational objectives, research goals and social services and make efforts to achieve their goals. These institutions therefore need to invest on their most important capital, i.e. faculty members, who need constant development and improvement and have individual goals and specific expectations from development. The university goals should therefore match the goals and expectations of the faculty members.

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Footnotes

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