PERSPECTIVES

Implementing Faculty Development Programs in Medical Education Utilizing Kirkpatrick's Model

Abdulaziz I Alhassan[1,2]

[1]Department of Medical Education, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; [2]King Abdullah International Medical Research Center, Riyadh, Saudi Arabia

Correspondence: Abdulaziz I Alhassan, Department of Medical Education, King Saud bin Abdulaziz University for Health Sciences, P.O. Box 3660, Riyadh, 11481, Saudi Arabia, Tel +966-11-4299999, Email dr.abdulaziz.alhassan@gmail.com

Abstract: Since the 1970s, the definition of faculty development has evolved from improving teaching skills and classroom performance to a full range of activities involving teaching, leadership, mentorship of students, and impacting institutional culture. Unfortunately, in many educational programs, the focus of faculty development is still on classroom performance and research activities. This is troubling given the increased competitive nature of higher education in general, and even medical education, to attract the best students. The purpose of this article is to demonstrate how the Kirkpatrick model can be used as a framework for the development, implementation, and management of a comprehensive faculty development program. An important gap exists within the academic literature regarding a lack of discussion and analysis about how faculty development can be implemented in a way that helps healthcare faculty improve their skills in all areas of academic performance. At the same time, there is a lack of discussion and analysis about the need for medical schools to align faculty development with larger institutional goals and outcomes. The discussion included in this article serves to begin the process of filling that gap within the academic literature by demonstrating that the Kirkpatrick model can be used to implement and manage faculty development programs in which there is an institutional focus rather than an individual focus. By focusing on faculty development that is aligned with larger institutional goals, medical schools can be more competitive and better serve the future healthcare professionals they are training.

Keywords: faculty development program, medical education, Kirkpatrick's model, teaching performance, effectiveness

Introduction

In 1975, faculty development in medical education was defined as planning and undertaking activities to improve the teaching skills of medical faculty, designing improved curricula, and enhancing the overall culture of medical school institutions.[1] Then, in 1976, faculty development was further defined as a broad range of activities that institutions carried out to renew or assist faculty in undertaking their expected role.[1] In 1987, Riegle argued the definition should be broad enough to encompass teaching, research capability, and the impact that medical faculty can have on the culture of their institutions. Moreover, in 1992, Hitchcock, Stritter, and Bland merely defined faculty development and evaluation as strategies to improve faculty teaching performance.[2] Later, in 2013, Leslie, Baker, Egan-Lee, Esdaile, and Reeves defined it as the process of educating and helping medical faculty improve their teaching performance, leadership skills, and opportunities for career development.[3]

Today, however, faculty development in many educational programs simply focuses on actual teaching performance and classroom outcomes rather than recognizing the larger themes of research abilities, leadership, and collaboration.[3] Lately, there have been calls to create an enabling environment where students, who are also future health professionals, are able to upgrade to provide next level of healthcare services. In this regard, preparing educators to create future leaders in the new fields of planetary health and sustainable healthcare is of paramount importance.[4] Some of these interventions to upgrade faculty skills and knowledge aligned with the future needs of health professionals through institutional faculty development programs have already shown promising results.[5,6]

An important gap that exists within the academic literature is a lack of discussion and analysis about how faculty development can be implemented in a way that helps healthcare faculty improve their skills in all areas of faculty performance. If faculty development is about more than teaching performance and classroom outcomes, then a model is needed that faculty and university leadership can use to guide this process. A systematic foundation and approach should be used to provide a framework to help healthcare faculty improve their performance for the benefit of their students they are preparing to be future healthcare professionals and for the benefit of their universities to be more competitive to attract the best students.

The purpose of this article is to demonstrate how the Kirkpatrick model can be used not solely for the purpose of evaluating a healthcare program, but as a framework for comprehensive faculty development. Kirkpatrick Model was first established in 1950′s by Donald Kirkpatrick and it is composed of four consecutive levels including reaction, learning, behavior and results.[1] This model is considered the best-known worldwide tool to analyze and evaluate the effectiveness and results of training and educational programs.[1] It is also used to establish and evaluate short-term and long-term outcomes.[2] Many studies were conducted recommending the use of Kirkpatrick's model to evaluate faculty development programs.[1,2] The creation of such outcomes should be established when designing a faculty development program. In this regard, the use of the Kirkpatrick model is examined in relation to each of its stages and how it can be used to guide and manage faculty development in medical school rather than focusing on needs assessments, which is only related to individuals. The discussion and examination provided in this article is about creating a systematic approach to faculty development for the entire medical school, and how the model can be used to manage and measure faculty development outcomes to improve institutional outcomes. The importance of faculty development, its effect on institutions, profession, and career development will also be discussed. Moreover, application and new suggestions of faculty development program in medical schools will be provided. Finally, the use of Kirkpatrick's model will be critiqued briefly and suggestions for implementing effective faculty development programs will be detailed using the four levels of Kirkpatrick's model.

Importance of Faculty Development

Before discussing and critiquing various recommendations for conducting faculty development, it is important to briefly examine why the issue of faculty development is currently important for both medical instructors and the institutions for which they work. From an institutional standpoint, the days of most universities having little competition for students and their tuition money are over.[7] Universities must compete for students and their tuition money more than ever. Some might argue that medical schools, dental schools, and other types of medical education programs are immune or removed from the enrollment pressures of other academic programs because of the limited number of such programs. The reality, however, is that even while admittance to medical education programs is limited, most universities want to be able to select the best students for such programs, rather than students who are willing to tolerate faculty who are deemed to be poor instructors, or who have created a poor organizational environment. And an effective organizational environment that aims to impart a high-quality educational curriculum requires a shared responsibility between the faculty members to address challenges of teaching and assessment.[8]

It has also been noted that over the past 33 years, outside forces have contributed to the increased concern about faculty development in medical education.[9] Governments that provide student loans and that have a vested interest in the education that future medical professionals receive have become concerned about the concept of faculty development. Furthermore, society has taken an interest in the way in which future medical professionals are trained because that training is correctly perceived to impact the type of care that patients receive as well as the types of interactions that occur between patients and medical professionals.[10] The result for medical education programs, and for the faculty who teach in those programs, is that faculty development to improve teaching skills, interactions, and the type of organizational environment that is created is more important than ever before.

Faculty development is related to outcomes associated with social, financial, and competitive demands from students, university administrators, and society.[10] Medical school faculty members must do more than provide rigid instructions to students, with the burden of achieving positive learning outcomes placed solely on students.[3] They are expected to be actively engaged in the instructional process, and to behave in and out of the classroom in ways that will have the highest

opportunity of providing the best outcomes for students as well as for the larger society. For example, the way in which faculty engage with students in informal ways to provide educational guidance, or whether faculty are involved as leaders and mentors in student-run clubs and organizations. Furthermore, society has taken an interest in the way in which future medical professionals are trained because that training will directly impact the type of care that patients receive, as well as the types of interactions that occur between patients and medical professionals.[1,10] Quality medical education programs are important for society because the way in which future medical professionals are instructed, and the type of culture in which they are instructed, impact their own behaviors. It is not just the quality of education that medical education students receive, but also the larger learning that occurs through informal interactions with faculty.[10]

Future physicians and other medical professionals who are instructed in an environment in which collaboration and collegiality are encouraged are more likely to engage in such behaviors as medical professionals. However, physicians and medical professionals who have been trained in an environment where personal interests take precedence over collaboration or assisting students are more likely to exhibit this behavior to their colleagues and patients.[10] The result for medical education programs, and for the faculty who teach in those programs, is that faculty development to improve teaching skills, interactions, and the type of organizational environment that is created is more important than ever before. In the present perspective, we aim to identify the key areas of medical faculty's professional development and reevaluate them to inform any institutional faculty development reform program.

Effect of Faculty Development on Institutions and the Profession

It is useful to consider what it means for faculty members to undergo training to improve outcomes for their institutions. The institutional outcomes, which can also be considered organizational goals, are not necessarily synonymous with the outcomes for the individual faculty members. Trying to improve institutional outcomes or outcomes for the profession overall may work against the interests of individual faculty members. This is true for the same reason that most planned organizational change efforts in all industries are not successful. It may be the result of the way planned change efforts, to improve organizational outcomes, ask organizational members to do more work for the same remuneration. In fact, even if an organizational change results in the same amount of work for the same pay, it is still expected to add to the burden on faculty members, even if only in the sense that they are being asked to spend time learning new procedures and skills. Thus, faculty members should be expected to resist faculty development if it is not presented in a way that is advantageous to them personally and interrelated to their career development.

It is for these reasons why a systematic means by which to carry out and measure faculty development is needed in medical schools. It is easy for faculty to view any faculty development efforts as not applying to them or being another example of additional work with no benefit. Institutional leaders need to be able to provide a means of understanding faculty development that does not seem arbitrary. Instead, faculty development needs to occur in a way that benefits both faculty and the institution with clear steps in the process that can be managed and measured. The Kirkpatrick model can be used to provide the systematic approach that is needed to help faculty members to improve their professional development, while also providing institutional leaders with a systematic approach for measuring performance improvement.

Effect of Faculty Development on Career Development

Career development is something that cannot be overlooked in an industry in which issues of promotion and tenure are often the basis by which faculty are able to continue teaching in medical education programs. Medical education faculty are indeed concerned with the activities that will lead to promotion and tenure, such as publishing original research and ensuring that students are able to pass the tests and evaluations necessary to allow them to practice as medical professionals.[3] If promotion and tenure are only based on the number of studies published in each amount of time or the percentage of students who pass specific tests or evaluations, then those are the metrics that medical education faculty will be more concerned about. However, if medical education programs base decisions about promotion and tenure on a broader range of metrics such as leadership skills and teaching performance, along with more traditional metrics, then faculty will have to adjust how they view career development. The desire to encourage medical educational faculty to think about faculty development in terms of leadership skills, teaching performance, and career development that is based

on more than the number of research studies published in academic journals is the reason for the faculty development program recommended in this paper.

The discussion and evaluation of the Kirkpatrick model provided in this paper adds to the body of knowledge about medical school faculty development because of the way in which the model can be used to motivate faculty to think about the full range of skills related to faculty performance. Unlike so much of the existing body of literature in which faculty development is approached from the standpoint of program evaluation, the intent of this discussion and examination is about using the Kirkpatrick model as a framework for managing a comprehensive faculty development program. In this way, the goal is not simply to evaluate a faculty development program, but to effectively create, manage and measure short-term and long-term outcomes.

Application of Faculty Development Programs in Medical Schools

It is generally the norm in universities and medical schools for faculty development to be decentralized, which means that different faculty development initiatives occur across different departments. The problem with this type of faculty development is that different departments have different levels of funding and different levels of support from department leaders, with the result being that some faculty have access to quality faculty development activities, while other faculty essentially have access to no faculty development at all. A better approach to faculty development is a centralized faculty development effort in which a single committee or deanship is responsible for overseeing and carrying out faculty development activities.[11]

An important benefit of a centralized approach to faculty development is that improvements in faculty skills and performance can be centralized and standardized across an entire university.[11] Furthermore, a single faculty development committee or deanship can serve as a leader to examine the performance of each college in a university and determine where resources are needed to address deficiencies in faculty skills.[3,12] In this regard, financial and collaborative resources are better utilized across the entire university setting. At the same time, the faculty development process becomes a collaborative process rather than an individual effort.

Finally, a centralized approach to faculty development allows university leaders to hold department chairs and faculty accountable for achieving improvements in faculty performance.[13] Faculty and department chairs can be rewarded for their improvements in faculty roles and duties. In addition, faculty who need additional assistance with faculty development can be given the attention that they need to improve their skills and behaviors.

New Suggestions for a Faculty Development Program

The effectiveness of a faculty development program depends on how a program is evaluated and what objectives need to be measured. These questions have been addressed by Steinert et al who suggested using Kirkpatrick's model to evaluate the outcome of faculty development activities. This model is based on four levels of educational outcomes: Level 1 concerns learners' reactions to the educational experience; Level 2 reflects learning and learners' changes in attitude towards teaching and learning, and modification of knowledge or skills because of the learning. Level 3 relates to changes in behavior from the new learning; Level 4 has to do with results based on wider organizational and participant changes resulting from the educational intervention.[11]

Researchers and faculty who have conducted faculty development efforts in medical education have argued that Kirkpatrick's model provides an effective means by which to design and assess the outcomes of faculty development programs.[11] However, other researchers who have examined the literature on faculty development outcomes using the Kirkpatrick model have noted that there are relatively few in-depth studies about the model.[14] In this regard, an important gap exists within the academic literature related to the need to connect faculty development programs with expected short-term and long-term outcomes for both faculty and the institution. Using a model for the purpose of program evaluation is not appropriate if there is no systematic way in which to implement, manage, and measure the outcomes of such a program. Faculty development needs to move beyond a sole focus on the individual and function in a way that connects individual performance and behavior with the larger goals and outcomes of the institution. In this way, the performance of the faculty can be measured in terms of the larger impact on the performance of the institution.

In the following section, 13 systematic reviews that adapted this model will be discussed, and recommendations will be presented for future programs using this model as the foundation for implementing, managing, and measuring the outcomes of a comprehensive faculty development program. The information presented in the remainder of this paper will demonstrate that the Kirkpatrick model can be used as a framework for implementing and managing a comprehensive faculty development program. It will also demonstrate the importance for institutions and institutional leaders to connect faculty development with the larger issues and goals of the institution.

Critiquing the Use of the Kirkpatrick's Model

Researchers in thirteen research studies undertook systemic reviews of studies by using the Kirkpatrick's model to measure the effectiveness of faculty development activities and educational programs. These systematic review articles were conducted considering Kirkpatrick's model to evaluate faculty development activities and programs through the years 2006 to 2022 that covered studies from 1980–2020. Steinert et al covered studies from 1980–2002 and Leslie et al reviewed studies from 2001–2010 for instructors in medical education and their institutions.[3,11] Sorinola, and Thistlethwaite covered studies from 1980–2010 about faculty development activities in family medicine.[15] Steinert et al covered studies from 1980–2009 designing faculty development initiatives to promote leadership in medical education.[16] Sinclair, Kable, and Levett-Jones reviewed studies from 2004–2014 about effectiveness of internet-based e-learning on clinician behavior and patient outcomes.[17] Moreover, Steinert et al covered other studies from 2002–2012 as an update to the previous systematic review conducted in 2006.[2] Phuong, Cole, and Zarestky reviewed studies from 2005–2015 about faculty development for teacher educators.[18] Phillips et al reviewed studies from 2000–2018 about effectiveness of the spaced education pedagogy for clinicians' continuing professional development.[19] Bilal, Guraya, and Chen reviewed a systematic review and meta-analysis from 2003–2016 about the impact and effectiveness of faculty development programs in fostering the faculty's knowledge, skills and professional competence.[5] Johnston et al reviewed studies from 2007–2011 about faculty development initiatives in academic dentistry.[20] Phuong, Foster, and Reio reviewed studies from 1990–2018 to investigate the current faculty development literature, concentrating on the identification of faculty development activities, evaluation methods, outcomes, and influential factors.[21] Ahadi et al reviewed studies from 2000–2020 about evaluation of teacher professional learning workshops on the use of technology.[22] Kumar et al reviewed studies about 2013–2020 about faculty development programs in medical education in the eastern Mediterranean region.[23] These studies reported high participant satisfaction on the reaction level of Kirkpatrick's model which continues to be used to inform effective implementation of medical faculty development programs globally.[24] Researchers found that participants reported a positive change in their attitude after partaking in such faculty development activities.[2,3] Participants also claimed they were more informed about educational philosophies and teaching skills that they could implement to improve their teaching practice. However, few studies revealed the measurement of the effectiveness of faculty development activities and programs addressing the changes on the highest level of Kirkpatrick's model which are changes on the organizational level. For example, according to this article, critiquing the 13 systematic reviews in a chronological order, the first systematic review conducted by Steinert et al found that few studies had explored any differences in organizational procedures.[11] The last systematic review conducted by Kumar et al stated that only four out of 23 studies addressed the changes in the organizational level of Kirkpatrick's model of program evaluation.[23] Nonetheless, an important criticism of the limited research about faculty development is that it has not focused on long-term outcomes. McLean et al indicated that much of the research only examined short-term changes in behavior or changes within small departments or groups of faculties rather than on a large scale across medical schools.[1] Also, much of the data gathered in these studies was based on self-reported feedback, therefore there was no rigorous evidence on the influence of faculty development programs on student performance or on instructors' instructional skills.[3,9,11,13] However, it is important that faculty development programs be aligned to learner outcomes which also depend upon effective and timely delivery of feedback.[25]

Moreover, the faculty development program must ensure to educate instructors about the importance of applying what has been learned both during the intervention and afterwards for change to occur, and follow-up must be done.[11] Specifically, instructors must practice skills, and receive feedback on them, have the desire to change, know what to do and how, and have a supportive work environment, and rewards for changing.[11] McLean et al additionally explained that

instructors must know why they need to attend a faculty development program so that they feel that their time and effort were well spent.[1]

Implementing an Effective Faculty Development Program

Kirkpatrick's model is the foundation in this paper for evaluating educational outcomes. We suggest that Kirkpatrick's model could be improved upon and then applied in a particular program. It could be particularly used as a starting point for the creation of a faculty development program. This means that in establishing any new program for faculty development, Kirkpatrick's four levels could be used as objectives for measuring outcomes. This aligns with McLeanet al's observation about the importance of developing objectives and measurable performance criteria early in the planning process.[1] In establishing objectives, planners should also consider measuring the long-term impact of any faculty development activity. This is particularly true given that many universities have fallen short in the faculty development area because of their focus on teaching activities. Consequently, faculty development is largely based on providing instruction to faculty members without developing and providing processes that allow faculty members to apply what they have learned in a way that will elicit feedback from others.[5,26] In contrast, such programs should aim for faculty members to engage in higher order thinking that moves them from merely gaining knowledge to applying and being evaluated on the knowledge they have learned. This would allow developers to measure the impact of faculty performance on students and evaluate the program's effectiveness on the institution. In the following section, we present a recommendation for a new faculty development program in three stages: the planning stage, the implementation stage, and the evaluation stage. All three stages should be considered when planning a new faculty development program.

Planning Stage

There are three steps in the planning stage in creating a faculty development program. The first step is to identify the problem and the general needs of the institution. This step requires that administrators and expert medical education faculty determine the objectives of the program by examining the current state and the desired outcome. This includes considering the internal resources available and external resources to be used, the appropriate time for conducting such a program, its cost-effectiveness, and the appropriate activity for specific interventions. They must also decide the type of short interventions that can be useful and what type of long-term type of program is needed to achieve the desired outcome for instructors, students, and the institution.

The second step is to conduct a needs assessment of the target participants.[1] These needs must be explored through determining the level of knowledge required of each discipline, the skills required, and the individual needs of instructors. This can be done through categorizing instructors into senior faculty, junior faculty, and those new to the academic field. Moreover, a needs assessment must be conducted frequently to ensure the program is meeting the needs of all faculty members. Also, without understanding the faculty development needs of the diverse groups of members of the faculty, including seniors and juniors, or across various departments, clinical or otherwise, the aim of faculty development and training outcomes may not be realized.[27] An institutional needs assessment exercise may be required to identify the key areas of the faculty's training requirements. This will establish a baseline for any subsequent training and will help provide data for comparison in the evaluation phase.[28]

The third step in the creation of a faculty development program is to determine appropriate goals and specific measurable outcomes based on the problem identification and needs assessment that have been conducted.[11] These goals and objectives must be based on the problems that have been identified. Even more, objectives should be based on the larger goals that administrators and faculty might have about changes and improvements in how faculty members provide instruction and interact with students. Based on the goals agreed upon, measurable outcomes for each goal must be identified. An appropriate tool that can measure the desired outcomes must also be chosen. For example, if the goal is to enhance teaching skills in the classroom, this can be measured by improvements in student assessments.

Implementation Stage

After determining the goals of a faculty development program and its measurable outcomes, appropriate activities and their processes must be decided. This stage should be carefully discussed amongst the administration and the developers

to decide which activities can appropriately be established. In this stage, the developers must consider processes for the activities and design the process steps based on the types of interventions that will achieve the greatest benefit for participants. This can be accomplished through categorizing faculty needs and then deciding on the goals for an activity. For instance, decision-makers must decide whether the goal of an activity is to provide orientation for new faculty members or general instructional development in medical education for instructors in all specialties in the respective medical school. Or, alternatively, instructional development for a particular department may be the goal of an activity. For the first category concerning general needs, such as the orientation of new faculty, the activity will be targeted at those new faculty members who are either new to academia or new to the institution. After faculty members attend the activity, a follow up process should be established to update them about new policies or procedures.

For the second category, the activity aims at instructional development about medical education in general that could be useful across different specialties, with the importance of faculty follow up. Specifically, after the activity, those who attended could be encouraged to apply the activity in their department and to teach other colleagues. This could then allow the instructors who attended the original training to adapt what they learned for their specialty and department.[29] For example, if they learn about a new teaching model, such as Problem-Based Learning, or new student assessment strategies, they can adapt the appropriate information to their specialty or department needs to achieve a desired outcome.

The third category, which is instructional development for a particular department, the suggested process for follow up be put in place with the participants after the training. This will ensure they have understood the new knowledge and are applying the required skills. For example, if faculty members attend a seminar about a new approach for skills in a particular discipline, a follow up process should be established with them. They could also be provided with additional resources, such as any new information about upcoming events or conferences that will give them more information about the new skills, they have learned.

Moreover, when planning a faculty development program, the diversity of faculty must be recognized, and consideration given to their responsibilities, status, and timing of events. Organizing and categorizing instructors by their ranks would help ensure each faculty member achieves the optimal benefit from the program and help faculty members work effectively as a group. Moreover, for the instructional development activities' goal, activities should be differentiated among the different levels of faculty to achieve the most satisfaction. This is important because what constitutes a suitable intervention for a junior faculty member will likely be different from what is appropriate for a senior faculty member. For example, junior faculty members will not be interested in attending activities such as a workshop on how to be a mentor for other faculty members. Another important element in a faculty development program is that faculty members who are new to academia will need information on teaching methods, career development, and how to obtain tenure.[7] Experienced faculty who are new to a medical program or institution may become bored with information about obtaining tenure that is irrelevant to them.[29] Thus, the time available for faculty development needs to be efficiently used, based on the needs of different types of faculty members.

Evaluation Stage

At this point, a plan can be made to evaluate the outcomes of a faculty development program. This is based on Kirkpatrick's model of the four levels of learner outcomes, which will be explained in three stages. The first stage will address the first level of Kirkpatrick's model—that is, to measure participants' satisfaction with the faculty development program. The second stage will address the second and third levels of Kirkpatrick's model that evaluate learning, attitude changes towards learning, and changes in behavior from the faculty development program. The third stage will address the fourth level of Kirkpatrick's model – evaluating the effectiveness of the faculty development program in an institution. The implementation of an evaluation mechanism using these three stages is given as follows. In the first stage, data can be collected to evaluate the program based on the participants' perceptions, that is, their satisfaction or dissatisfaction with the program. For example, participants can self-report whether they found the program useful and if they felt there was enough follow up and directions to enhance what they learned. For a general activity such as orientation, feedback can be taken immediately after attending the activity. For an instructional development activity, feedback would be given after participants have an opportunity to apply what they learned in the training. This stage then addresses the first level of Kirkpatrick's model. The second stage would evaluate the faculty development program based

on student and mentee outcomes. Feedback can be collected from students and mentor and from students' achievements, such as grades or pass/fail rate. Thus, changes in faculty knowledge and behavior can be measured, and this stage addresses the second and third levels of Kirkpatrick's model. In the fourth stage, we can evaluate the progress of faculty performance and student outcomes that reflect the effectiveness of any faculty development program in the institution. If improvements occur in each of these areas, then the program can be considered successful. Also, if there is increased cooperation between areas, and faculty establishes opportunities to share information about best practice, this could be considered an indication of success. Studies have shown that this cooperation within team members facilitates capacity building leading to achieving of educational outcomes.[30] However, if improvements do not occur in each of these areas, then further evaluation and identification of program needs will have to occur. This stage will address the highest level of Kirkpatrick's model. Additionally, it is also essential for the evaluation phase to identify the key indicators of faculty development to track their performance and assess the needs for further refresher trainings.[31]

Filling a Gap in Faculty Development Literature

The information presented in this discussion and analysis shows that the Kirkpatrick model, which has received little attention within the academic literature related to faculty development, can be used not only for evaluating faculty development programs, but as a foundation for implementing, managing, and measuring the performance and outcomes of faculty development. An important aspect of the Kirkpatrick model is the ability to use the model as a means of aligning faculty development and performance with larger institutional goals and outcomes. As medical schools compete for the best students, it is necessary for all faculty and institutional leaders to have a systematic approach through which they focus on the full range of actions and behaviors of faculty, such as classroom performance, research, interactions with students, leadership, mentoring, and their impact on the culture of the institution.

It is recognized that this paper is not a complete analysis of the Kirkpatrick model for the purpose of implementing, managing, and measuring faculty development in medical schools. However, it is hoped that this paper ser to begin to fill an important gap within the academic literature and to encourage additional research on the use of the Kirkpatrick model for the creation and management of faculty development programs. Furthermore, it is hoped that this model will be recognized as being a foundation for connecting faculty development with larger institutional goals and outcomes as opposed to evaluating individual faculty development.

Finally, the information presented in this paper is part of the on-going evolution of medical education and faculty development. In the past nearly 50 years, faculty development has evolved from being thought of as a personal issue related to the teaching and research of each faculty member to being about the broader performance and culture of the institution. Faculty development is no longer only about classroom performance and research. Instead, it is about how the institution performs in competing against other medical schools and in development future healthcare professionals. In this regard, it is vital for faculty development programs to be directly connected to the larger needs and goals of the institution and the students who are being trained.

Conclusion

The recommendations that have been made in this article allow faculty development to be conducted in a systematic manner but also in a way that can be tailored to the needs of different groups of faculty. The overall result should be faculty members who become better educators and who are able to use current medical education research to evaluate and improve their educational strategies. This also means that these educators aim to establish the foundations for the development of leaders in the field of medicine who can independently address the challenges of modern medicine. Another larger outcome should be that medical education programs will be able to meet the needs and expectations of their stakeholders at a time when needs have changed and will continue to change from a focus solely on instruction to a more well-rounded focus on the outcomes for medical education students. This change can be achieved by promoting a conducive environment for learning, team building, and cooperation within and across the segments of an institution. This reform process would require a broader institutional shared vision for accepting and implementing this renewed strategy to cope with the actual training and educational needs of the faculty members.

Disclosure

The author reports no conflicts of interest in relation to this work.

References

1. McLean M, Cilliers F, Van Wyk JM. Faculty development: yesterday, today and tomorrow. *Med Teach*. 2008;30(6):555–584. doi:10.1080/01421590802109834
2. Steinert Y, Mann K, Anderson B, et al. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: a 10-year update: BEME Guide No. 40. *Med Teach*. 2016;38(8):769–786. doi:10.1080/0142159X.2016.1181851
3. Leslie K, Baker L, Egan-Lee E, Esdaile M, Reeves S. Advancing faculty development in medical education: a systematic review. *Acad Med*. 2013;88(7):1038–1045. doi:10.1097/ACM.0b013e318294fd29
4. Tun S, Wellbery C, Teherani A Faculty development and partnership with students to integrate sustainable healthcare into health professions education. *Med Teach*. 2020;42(10):1112–1118. doi:10.1080/0142159X.2020.1796950
5. Bilal GSY, Chen S. The impact and effectiveness of faculty development program in fostering the faculty's knowledge, skills, and professional competence: a systematic review and meta-analysis. *Saudi J Biol Sci*. 2019;26(4):688–697. doi:10.1016/j.sjbs.2017.10.024
6. Al Wardy N. Faculty development initiatives at the college of medicine & health sciences, Sultan Qaboos University, Muscat, Oman. *Sultan Qaboos Univ Med J*. 2020;20(3):e271–e278. doi:10.18295/squmj.2020.20.03.005
7. Patrick SK, Fletcher JJ. Faculty developers as change agents: transforming colleges and Universities into learning Organizations. *Improve Acad*. 1998;17(1):155–169. doi:10.1002/j.2334-4822.1998.tb00348.x
8. de Carvalho-Filho MA, Tio RA, Steinert Y. Twelve tips for implementing a community of practice for faculty development. *Med Teach*. 2020;42(2):143–149. doi:10.1080/0142159X.2018.1552782
9. Riegle RP. Conceptions of Faculty Development. *Educ Theory*. 1987;37(1):53–59. doi:10.1111/j.1741-5446.1987.00053.x
10. Brancato VC. Professional Development in Higher Education. *New Dir Adult Contin Educ*. 2003;2003(98):59–66. doi:10.1002/ace.100
11. Steinert Y, Mann K, Centeno A, et al. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Med Teach*. 2006;28(6):497–526. doi:10.1080/01421590600902976
12. Behar-Horenstein LS, Schneider-Mitchell G, Graff R. Faculty perceptions of a professional development seminar. *J Dent Educ*. 2008;72(4):472–483. doi:10.1002/j.0022-0337.2008.72.4.tb04512.x
13. James Jacob W, Xiong W, Ye H. Professional development programmes at world-class universities. *Palgrave Commun*. 2015;1(1):15002. doi:10.1057/palcomms.2015.2
14. Hendricson WD, Anderson E, Andrieu SC, et al. Does faculty development enhance teaching effectiveness? *J Dent Educ*. 2007;71(12):1513–1533. doi:10.1002/j.0022-0337.2007.71.12.tb04428.x
15. Sorinola OO, Thistlethwaite J. A systematic review of faculty development activities in family medicine. *Med Teach*. 2013;35(7):e1309–e1318. doi:10.3109/0142159X.2013.770132
16. Steinert Y, Naismith L, Mann K. Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. *Med Teach*. 2012;34(6):483–503. doi:10.3109/0142159X.2012.680937
17. Sinclair P, Kable A, Levett-Jones T. The effectiveness of internet-based e-learning on clinician behavior and patient outcomes: a systematic review protocol. *JBI Evidence Synthesis*. 2015;13(1):52–64.
18. Phuong TT, Cole SC, Zarestky J. A systematic literature review of faculty development for teacher educators. *High Educ Res Dev*. 2018;37(2):373–389. doi:10.1080/07294360.2017.1351423
19. Phillips JL, Heneka N, Bhattarai P, Fraser C, Shaw T. Effectiveness of the spaced education pedagogy for clinicians' continuing professional development: a systematic review. *Med Edu*. 2019;53(9):886–902. doi:10.1111/medu.13895
20. Johnston C, Ganas J, Jeong YN, Nevius A, Bassir SH, Dragan IF. Faculty development initiatives in academic dentistry: a systematic review. *J Dent Educ*. 2019;83(9):1107–1117. doi:10.21815/JDE.019.096
21. Phuong TT, Foster MJReio TG Jr. Faculty development: A systematic review of review studies. New Horizons in Adult Education and Human Resource Development. 2020;32(4):17–36
22. Ahadi A, Bower M, Lai J, Singh A, Garrett M. Evaluation of teacher professional learning workshops on the use of technology-A systematic review. *Prof Dev Education*. 2021;19:1–7. doi:10.1080/19415257.2021.2011773
23. Kumar A, Atwa H, Shehata M, Al Ansari A, Deifalla A. Faculty development programmes in medical education in the Eastern Mediterranean Region: a systematic review. *East Mediterr Health J*. 2022;28(5):362–380. doi:10.26719/emhj.22.014
24. Nagler A, Andolsek KM, Rudd M, Kuhn CM. Providing successful faculty development to graduate medical education program directors. *Int J Med Educ*. 2017;8:324–325. doi:10.5116/ijme.59a9.73cc
25. McCutcheon S, Duchemin AM. Overcoming barriers to effective feedback: a solution-focused faculty development approach. *Int J Med Educ*. 2020;11:230–232. doi:10.5116/ijme.5f7c.3157
26. McLeod PJ, Steinert Y. Peer coaching as an approach to faculty development. *Med Teach*. 2009;31(12):1043–1044. doi:10.3109/01421590903188729
27. Heath JK, Davis JE, Dine CJ, Padmore JS. Faculty development for milestones and clinical competency committees. *J Grad Med Educ*. 2021;13(2s):127–131. doi:10.4300/JGME-D-20-00851.1
28. Algahtani H, Shirah B, Subahi A, Aldarmahi A, Algahtani R. Effectiveness and needs assessment of faculty development programme for medical education: experience from Saudi Arabia. *Sultan Qaboos Univ Med J*. 2020;20(1):e83–e89. doi:10.18295/squmj.2020.20.01.012
29. Sorcinelli MD. Effective approaches to new faculty development. *J Couns Dev*. 1994;72(5):474–479. doi:10.1002/j.1556-6676.1994.tb00976.x
30. Bolander Laksov K, Elmberger A, Liljedahl M, Björck E. Shifting to team-based faculty development: a programme designed to facilitate change in medical education. *High Educ Res Dev*. 2020;5:1–15.
31. Salajegheh M, Gandomkar R, Mirzazadeh A, Sandars J. Identification of capacity development indicators for faculty development programs: a nominal group technique study. *BMC Med Educ*. 2020;20(1):163. doi:10.1186/s12909-020-02068-7