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# Faculty Development Program Models to Advance Teaching and Learning Within Health Science Programs

## Abstract

Within health science programs there has been a call for more faculty development, particularly for teaching and learning. The primary objectives of this review were to describe the current landscape for faculty development programs for teaching and learning and make recommendations for the implementation of new faculty development programs. A thorough search of the pertinent health science databases was conducted, including the Education Resource Information Center (ERIC), MEDLINE, and EMBASE, and faculty development books and relevant information found were reviewed in order to provide recommendations for best practices. Faculty development for teaching and learning comes in a variety of forms, from individuals charged to initiate activities to committees and centers. Faculty development has been effective in improving faculty perceptions on the value of teaching, increasing motivation and enthusiasm for teaching, increasing knowledge and behaviors, and disseminating skills. Several models exist that can be implemented to support faculty teaching development. Institutions need to make informed decisions about which plan could be most successfully implemented in their college or school.

## Disciplines

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## FACULTY DEVELOPMENT

### Faculty Development Program Models to Advance Teaching and Learning Within Health Science Programs

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Within health science programs there has been a call for more faculty development, particularly for teaching and learning. The primary objectives of this review were to describe the current landscape for faculty development programs for teaching and learning and make recommendations for the implementation of new faculty development programs. A thorough search of the pertinent health science databases was conducted, including the Education Resource Information Center (ERIC), MEDLINE, and EMBASE, and faculty development books and relevant information found were reviewed in order to provide recommendations for best practices. Faculty development for teaching and learning comes in a variety of forms, from individuals charged to initiate activities to committees and centers. Faculty development has been effective in improving faculty perceptions on the value of teaching, increasing motivation and enthusiasm for teaching, increasing knowledge and behaviors, and disseminating skills. Several models exist that can be implemented to support faculty teaching development. Institutions need to make informed decisions about which plan could be most successfully implemented in their college or school.

**Keywords:** faculty development, faculty learning community, teaching, learning

## INTRODUCTION

Leaders in higher education have issued a call to increase and improve faculty development across all levels of faculty experience, especially in the area of teaching and learning.<sup>1</sup> In light of the growth in academic pharmacy over the past 15 years, there are increasing numbers of pharmacy faculty members who must be prepared to train students in skills such as critical thinking and problem solving; working in teams and collaborating; communicating with others; and finding and analyzing information.<sup>2</sup> Working with students to develop these skills requires a different teaching approach and is a paradigm shift for many faculty members. Faculty teaching development programs coach faculty members through this learning process and can be part of a comprehensive professional development plan.

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Boyce describes a framework for a faculty development program that includes support for faculty improvement in and assessment of teaching.<sup>3</sup> Guglielmo and colleagues recommended that faculty members and administrators within colleges and schools of pharmacy share responsibility for creating a comprehensive faculty development plan that would include development of teaching skills.<sup>4</sup> They found that little has been published on comprehensive faculty development plans that are outcome-oriented, and that there is a lack of teaching development for faculty members. These findings provided additional foundational support for our premise that faculty development programs are needed to support faculty success in teaching.

The potential outcomes for ineffective or minimally effective teaching include: poor student learning, high faculty turnover, and ineffective graduates. As such, it is important to identify effective strategies that support the development of excellent teachers.<sup>5-9</sup> The objectives of this review were to describe the current landscape for faculty development related to teaching effectiveness and to make recommendations for the creation of, or

enhancement to, faculty teaching development programs in health sciences education.

## LITERATURE REVIEW

Pertinent English-language articles indexed in ERIC (Education Resource Information Center), EMBASE, and MEDLINE databases from 1998 through September 2013 were searched. In addition, the reference lists of identified publications and published textbooks were reviewed. Search terms included: effective teaching programs, health sciences education, faculty development, faculty orientation, faculty retention, mentorship, and models. Inclusion criteria for research articles were any published work that: (1) evaluated 1 or more structured faculty development methodology; (2) quantitatively reported their findings; and (3) was undertaken within an academic setting.

The initial search identified 32 published articles. Of these, 9 met all inclusion criteria and are summarized in Appendix 1. The reasons for excluding the remaining 23 articles were: a lack of quantitative findings (15); a lack of structured faculty development programming (6); and completion outside of an academic setting (2). Six published books on faculty development also were identified; however, these were only used to aid in providing descriptions of the various methods for faculty development. From the included publications, 3 primary models of faculty development were identified: centers, committees, and communities.

Faculty development centers are traditionally larger and more centralized entities that are maintained with oversight from a chief academic officer. They are charged with designing and implementing developmental program activities that support the academic goals of the institution.<sup>1-5</sup> Often the leadership for the center is made up of dedicated, full-time administrative faculty and/or staff members, but may also consist of local faculty members selected on the basis of their expertise, leadership skills, or personal interests.<sup>1-5</sup> Faculty development centers typically have an advisory committee to help maintain contact with the faculty at large.

Faculty development committees may exist in conjunction with a center to serve in an advisory role but more often exist as a standalone committee.<sup>1-3,6,7</sup> These committees include multiple faculty members and can operate at departmental/division level, college or school level, or encompass larger bodies (eg, multiple colleges or schools within a health science campus).<sup>1-3,6,7</sup>

Faculty learning communities have been described as groups of 8 to 12 faculty, trainees and professional staff members engaging in an active, collaborative program.<sup>1-3,8-10</sup> These programs involve scheduled meetings (eg, once a month for 2 to 3 hours) centered on enhancing teaching

and learning, with frequent seminars and activities that provide learning, development, and community building.<sup>1-3,8-10</sup>

Programs to advance teaching and learning range from a one-time enterprise (eg, a retreat) to regularly scheduled workshops or seminars, to highly competitive, application-driven, multi-month fellowship or scholar programs. This broad range of program types makes determining whether faculty development is effective complicated. In one review, medical faculty teaching development programs appeared to have beneficial effects as measured by participants' self-evaluation of teaching ability, knowledge of effective teaching methods, and teaching evaluations.<sup>9</sup> Finelli and colleagues used focused instructional consultations and demonstrated improvements in student ratings and changes in teaching practice.<sup>2</sup> Student ratings focused on perceived increases in active learning, delivery of prompt feedback, clarity of lecture materials. Also, faculty reported increases in their perception of competence and confidence related to lecture-based teaching. In addition to providing high-quality instruction, standardized, objective teaching awards were found to be powerful in establishing formal recognition of the scholarship of teaching.

One study examined the long-term effectiveness of a 1-year teaching training program on 20 faculty members with less than 5 years of experience. The results indicated lasting benefits 2 years after completion of the sessions.<sup>10</sup> Research on teaching scholars programs in medical education showed corresponding successful outcomes: increased enthusiasm for teaching; increased educational research; and increased publication and presentation of educational scholarship.<sup>11</sup>

## BEST PRACTICES FOR FACULTY TEACHING DEVELOPMENT

Faculty teaching development programs vary in structure and function and there are several options to consider. The most appropriate option will depend on key situational factors: financial support, human resources (eg, staff support, faculty time), campus resources (eg, other faculty development programs within the institution, internal grants), and local expertise (eg, faculty or staff members with interest or relevant background). Because faculty teaching development efforts are contextual, there is no best, one-size-fits-all model: all have their advantages and disadvantages.

Based on the available literature, there are several principles that lead to successful faculty development.<sup>14</sup> The first questions to consider include identifying the area (s) for faculty development (eg, teaching and learning, educational leadership, scholarship of teaching and learning) and identifying the target audience(s) (eg, junior faculty members, all faculty levels, preceptors). The next

step is determining how success will be measured. The impact of a faculty development program should be measured by a thorough and focused assessment plan. Some of the measures used to assess faculty development in terms of teaching and learning include but are not limited to: number of individual consultations, number of courses changed, number of activities initiated, changes in course evaluations, changes in peer evaluations of teaching, number of scholarly articles and presentations focused on one or more aspects of faculty effectiveness, and number of promotions based on teaching. Ideally, assessment is multifaceted and these elements need to be agreed upon early in the process of developing a program. In a review of teaching and learning centers, 3 general areas were assessed: satisfaction (eg, participation data, surveys); impact on teaching (eg, student evaluations, syllabus analysis, follow-up observation, focus groups), and impact on learning (eg, student retention, grade point averages, products of student learning).<sup>15</sup>

The next key point is identifying the individuals who will lead or take part in the faculty teaching development. Decisions need to be made regarding staff, faculty, and administrative contributions including time, effort, and scope of responsibility. Without sufficient effort, a faculty teaching development program is not likely to be effective or sustainable.

The last key principle is identifying the institution's biggest assets and challenges. The faculty teaching development program should lead with its strengths and these strengths need to be identified *a priori*. For example, is there a university or campus center that can offer services and support and are there interested faculty members with the expertise to facilitate the process. These issues are congruent with the biggest challenges to creating effective faculty teaching development. Lastly, questions need to be addressed regarding faculty and administrative support, finances, physical space, recognition systems for faculty participation, and timeframe for changes. Based on some of these sustaining principles, Gillespie and colleagues recommend 10 steps to be considered when building a faculty development program (Table 1).<sup>12</sup>

Once a format has been agreed upon and developed, there are a variety of topics that faculty teaching development can address. Table 2 identifies potential topics. The format for delivering these topics also can vary in format. The Professional and Organizational Development Network for Higher Education (<http://podnetwork.org/>), is one resource to facilitate the development of topics, formats, and faculty developers.

## CENTERS BEST PRACTICE

Most centers are found on the university level and provide opportunities for interprofessional interaction;

Table 1. Ten Steps for Building a Successful Faculty Development Program

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Build stakeholders by listening to all perspectives
Ensure effective program leadership and management
Emphasize faculty ownership
Cultivate administrative commitment
Develop guiding principles, clear goals, and assessment procedures
Strategically place faculty development within the organizational structure
Offer a range of opportunities, but lead with strengths
Encourage collegiality and community
Create collaborative systems of support
Provide measures of recognition and awards

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there are few institution- or health science-based faculty development centers and even fewer centers are based in a college or school of pharmacy.<sup>3,4</sup> Most centers are supported financially by having a dedicated budget, however, some are grant-supplemented. For example, Minnesota State Colleges and Universities' Center for Teaching and Learning was established in 1999 after receipt of a \$1.6 million grant, and maintained by annual contributions totaling \$200,000 from the Office of the Chancellor.<sup>5</sup> However, external grants have shrunk, increasing the need to identify sustainable areas of funding to ensure continuance of such centers.

University-based centers can offer a variety of programs, engaging large numbers of faculty members from varied backgrounds, and foster a cohesive sense of learning across an institution, or multiple institutions; this may or may not be the case for more localized centers housed within a college or school of pharmacy. Centers may offer grants (eg, for travel, scholarship, innovative educational initiatives); skill-building workshops, retreats, communication tools (eg, blogs, flyers, newsletters), books and articles; assistance in collaborative reviews of teaching;

Table 2. Topics to Be Addressed in a Faculty Development Effort That Emphasizes Teaching, Learning, and Assessment

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Syllabus/course design
Writing objectives
Constructing assessments
Rubric design
Grading strategies
Student motivation
Learning disabilities
Classroom management
Active learning
Presentation and communication skills
Self-reflection
Searching and evaluating evidence

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recognizing effective instructors (ie, teaching awards); and individual consultation. This last element, individual consultation, has been recognized as one of the most effective faculty development practices.<sup>1</sup>

There are several advantages of an institution establishing a center as its approach to faculty development. Centers can, potentially, provide a wide range of services, opportunities, and resources. While most university centers are interprofessional, and can be sustained through grants, dedicated funding lines, or even revenue-generating enterprises, college- or school-based centers may have more limited funding sources or options. Centers are not without their limitations, as they can be too broad or far-reaching, thus losing individual applicability for faculty members in various settings. This can even be true if the center is located within a college or school.

### **Faculty Development Committees**

As previously mentioned, FDCs may exist in conjunction with a center in an advisory role, or as is more often the case, as a standalone entity.<sup>6</sup> These committees may operate at departmental/division level, college or school level, or within larger bodies (eg, health science centers). The committee is typically charged by the administration to promote a positive change for teaching and learning. Davis and colleagues recommend that these committees be a permanent source of development and be incorporated within the institutional structure.<sup>7</sup> These committees may allocate funds and steer faculty development activities, requiring administrative support and faculty ownership to ensure the highest chance of success. In addition, committees should be comprised of interested faculty members who must be proactive and committed to the enhancement and success of faculty development programs.<sup>7</sup> Committees require clear goals and objectives with focused agendas, operate with an established length of membership for consistency, and use subcommittees to investigate and report on activities.

FDCs, at least during their outset, may have a limited number of individuals who oversee the entire faculty development program for a college or school.<sup>6</sup> These individuals may be administrators responsible for faculty matters or faculty members responsible for development activities. As with the other structures, these individuals must rely on the cooperation of peers to do the actual work.

A committee approach can be advantageous as committees may be more responsive and attend to faculty members' needs. Committees promote active participation from faculty members in the design and development phases and in the delivery of programming. Finally, FDCs typically have a significant level of support because the committee is initiated by administration.

The primary disadvantages of FDCs are similar to those of any faculty development program: lack of resources, structure, or oversight. Like centers, committees also can be threatened by sustainability. The impact, quality, and quantity of programmatic offerings are influenced by the committee's inertia and focus and faculty members' interest and perceived benefit.

### **Faculty Learning Community**

The faculty learning community serves as a place for faculty members to share new pedagogical approaches and discuss logistics (eg, managing courses with large student enrollment). Additionally, FLCs usually have a scholarly component, which contributes to the institution (eg, guidelines, white paper, programmatic assessment).<sup>8-10</sup> A participant in an FLC may select a course or project to try out innovations, assess resulting student learning, and prepare a report to show the results. FLCs increase faculty member interest in teaching and learning and provide a safe, positive environment for faculty members to investigate, attempt, assess, and adopt new methods.

There are generally 2 types of FLCs reported in the literature: cohort-based or topic-based. Cohort-based learning communities address the teaching, learning, and developmental needs of faculty and staff members who have been particularly affected by isolation or stress within the academy.<sup>8-10</sup> Topic-based communities design a curriculum to address a special teaching and learning need or opportunity, and focus on a specific theme. In general, FLCs are more structured, intensive, and longitudinal than other approaches in which faculty members meet and work on teaching and learning issues (eg, teaching circles, journal clubs, seminars, committees).

The advantages of FLCs can be numerous. FLCs often result in scholarly work that can help individuals or the institution. These communities can build lasting relationships and broad community support. Finally, topics of the FLCs can address a diversity of interests (eg, scholarship of teaching, teaching large classes).

The disadvantages of an FLC can be the time commitment (eg, 2 to 3 hours once a month for a year) and costs associated with this model; this latter factor is typically associated with sharing meals as part of the community-building process. Costs also might be accrued if the FLC's members present their research locally or nationally. Faculty learning communities require a chair or co-chair for leadership to ensure goals are set and met, such as coordinating logistics to keep team members meeting regularly.

### **CONCLUSIONS**

Faculty teaching development programs are beneficial as has been measured through surveys and student

evaluations. Programs increase faculty members' value of teaching, rekindle their motivation and enthusiasm, and improve their knowledge, behaviors, and dissemination of skills.<sup>16</sup> Faculty development programs that support teaching improvement, effectiveness, and competency are needed for individuals teaching in colleges and schools of pharmacy because excellent teachers are needed in order to prepare future pharmacists to advance the practice and become essential members of the health care team who practice at the top of their license. Several faculty development models can be implemented to support teaching development and there is evidence that faculty development in this arena is effective. After a careful analysis of the benefits and costs associated with the models, faculty members can make informed decisions about which faculty teaching development plan would be most appropriately and successfully implemented at their institution. More research is necessary to maximize the outcomes of faculty development programs.

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Appendix 1. Summary of Studies on Faculty Development With Respect to Advancing Teaching and Learning

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**Centers**

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Participants/setting <sup>1</sup> :	Approximately 4,500 faculty and student members at Minnesota State College and Universities
Method:	36 month “Learning by Doing” (LBD) face-to-face series of faculty development programs
Objectives:	1. Increases in active learning; 2. Faculty and student changes in attitudes and feelings on teaching methodology; 3. Effectiveness of teaching methodology
Outcomes:	Based on faculty and student surveys: 1. Faculty reported using 1+ active learning techniques “somewhat” and/or “frequently” approximately 50% of the time. Greatest use of active learning was among mid-career faculty and those in the humanities with science faculty using lesser amounts; 2. 70% of faculty stated they were “very” or “somewhat satisfied” with the various strategies presented. Student reports indicated course satisfaction was >90% but this did not differ based on presence/absence of active learning techniques; 3. Effectiveness was unable to be accurately assessed but students reported increases in engagement based on increases in active learning.
Conclusions:	Wide-spread teaching improvements relative to active learning were implemented and sustained across a large number of academic institutions
Participants/setting <sup>2</sup> :	Thirty-seven tenured faculty members at the University of Minnesota
Method:	12 month multidisciplinary, face-to-face, focused group meetings (6/semester)
Objectives:	Changes in 1. Faculty perspective related to classroom teaching; 2. Use of various teaching strategies; 3. Knowledge level regarding discussed topics
Outcomes:	Faculty reported via survey: 1. Increases in satisfaction, confidence, motivation, and enthusiasm; 2. Agreement with expansion of technology in teaching, utilization of student feedback, and in-class student interactions but reported no change in assessing students and revisions to grading system; 3. Agreement with knowledge in discussed topics.
Conclusions:	While these findings support the positive aspects such a program can have on faculty attitude/perception, this study does not address teaching effectiveness, which is a limitation.
Participants/setting <sup>3</sup> :	Thirty faculty members at the rank of ‘Assistant Professor’ with fewer than 5 years teaching experience at the University of Antwerp, Belgium
Method:	12 month face-to-face, program consisting of eight modules with monthly, focused, meetings
Objectives:	1. Impact of a yearlong program on faculty perceptions; 2. Impact of individual and institutional changes as a result of this program; 3. Factors that influenced long-term application of learned information
Outcomes:	Faculty reported via survey: 1. Sustained behavior changes to teaching at least 2 years after completion of the program; 2. Unclear impact of individual behavioral changes from an institutional perspective; 3. Little congruency between factors influencing long-term impact /application of learned information.
Conclusions:	For junior faculty, a one-year training program can have sustained impact on their educational approaches long after the program has ended.
Participants/setting <sup>4</sup> :	Twenty-four faculty members, mixture of tenured/non-tenured, from the University of Seville and the University of La Laguna, Canary Islands, Spain
Method:	4 month program that combined face-to-face with 8 self-paced online modules encompassing 10 content areas
Objectives:	At the end of program: 1. Improvements in teaching and curricular activities; 2. Relationship between faculties’ attitudes and students’ learning
Outcomes:	Faculty reported via survey: Improvements were seen for all faculty across all 10 areas of content. The greatest gains were seen in the domain of didactic teaching for large groups; 2. Eight of the ten content areas were inter-correlated between faculty attitudes and student perceptions
Conclusions:	A mixed model of content delivery, incorporating a large online component, can positively impact faculty and student perceptions.
Participants/setting <sup>5</sup> :	24 Health Sciences clinical faculty from West Virginia University
Method:	Initially designed as a 24 month program with weekly 4-hour face-to-face sessions for the first 9 months the next 15 months focused on collaborating on research projects. However, the program underwent revisions and transitioned to weekly 1-hour face-to-face sessions with asynchronous online discussions.

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(Continued)



Appendix 1. (Continued)

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**Centers**

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Objectives:	1. Implementation of learned teaching methods into classroom activities; 2. Career improvements of based on implementing knowledge and skills gained during this program
Outcomes:	1. No moderate/large increases in implementation of any methods discussed; 2. Minimal improvements in academic careers were notably reported to exist in: development of new assessments, mentoring of junior/new faculty, and faculty development teaching
Conclusions:	The findings from this study demonstrate that measurable increases in a variety of topics can be seen, but these findings were not found to have been adopted by the faculty to a high degree.

**Faculty Development Committee**

Participants/setting <sup>6</sup> :	Eighteen faculty members at the University of Tennessee: School of Pharmacy
Method:	Three, 12 month complementary programs focused on research and technology support.
Objectives:	1. Scholarly output attributable to one, or more, of these programs
Outcomes:	Faculty reported increases in grant submissions (10), publications (1 accepted, 5 planned for submission), abstracts (6 accepted), new graduate courses (2), individual positive impact in clinical and educational practice.
Conclusions:	Positive results in a number of areas, namely within scholarly output, were seen. Total cost to the institution was reported to be approximately \$35,000; however, grant funding, attributable to this program, exceeded \$1,000,000.

**Faculty Learning Community**

Participants/settings <sup>7</sup> :	One-hundred and seventy-three faculty from Ball State University
Method:	Retrospective review of participation over the previous 12 months within structured University-affiliated faculty learning communities (UFLC) and unstructured faculty learning communities (IFLC)
Objectives:	Faculty were surveyed to determine their type, level, and perceptions of participation within faculty learning communities
Outcomes:	1. 92% participated in a structured UFLC; 2. 61% participated in an unstructured IFLC; 3. Participation in both improved teaching strategies, learn, and networking opportunities understanding of how students
Conclusions:	Faculty participated in both formal and informal learning communities to a fairly high degree, and improvements were seen among a number of reported outcomes
Participants/settings <sup>8</sup> :	Five tenure-track health science faculty at the University of Pittsburgh
Method:	24 month program with weekly meetings primarily focused on research oriented topics
Objectives:	Research productivity and efficiency
Outcomes:	1. Productivity: 27 projects were submitted or completed; 2. Efficiency: Improvements in the final 6 months were seen compared to the first 6 months (33.3% vs 14.6%)
Conclusions:	A combination of focused meetings and direct mentorship can yield positive outcomes relative to research productivity for junior faculty
Participants/settings <sup>9</sup> :	Faculty from the College of Pharmacy at Western University of Health Sciences
Method:	21 topics based on scholarship, teaching, and/or promotion-oriented including new faculty orientation
Objectives:	1. New faculty perceptions of the orientation process; 2. Faculty perception of faculty development programming
Outcomes:	1. Orientation process: Average rating was 3.4/4, indicating faculty 'agreed' that the process was valuable; 2. Faculty Development: Average rating was 4.4/5, indicating faculty was satisfied with the level/type of programming offered
Conclusions:	Improvements were demonstrated within two major areas: faculty retention and satisfaction.

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