Expanding the Scope of Faculty Educator Development for Health Care Professionals

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Abstract

Although many medical institutions offer faculty development in education, this does not provide the in-depth knowledge of the science of teaching required for medical education research and careers in medical education. This paper describes our expanding faculty development activities at Cincinnati Children's Hospital Medical Center (CCHMC) that have culminated in the development and implementation of an innovative Online Master's Degree in Education program. Working in collaboration with the University of Cincinnati College of Education, CCHMC developed an Online Master's Degree in Education program targeting physicians and other health care professionals. The master's program has proven to be an effective means of developing health care professionals' educational pedagogy and skills as measured by program growth and outcomes of the participants. Medical institutions may approach faculty development through various methods, but the unique nature of online programs provides more flexible learning opportunities to nurture healthcare professionals beyond traditional programs.

Keywords: Educator Development, Web-based Distance Learning, Master's Degree in Education, Medical Education

Introduction

Faculty development in education refers to a broad range of educational activities that institutions provide to enhance professional career growth of practitioners and teaching faculty in their roles as medical educators (Steinert et al., 2006). Faculty development activities assist faculty not only with acquiring new teaching skills and exploring more advanced educational resources, but also with developing insights into the pedagogy behind their teaching practice. Approaches to these activities range from professional orientation for new faculty members to instructional development, leadership development, organizational development, individual development, continuing education, and in-service education.

Faculty development activities are highly valued for professional development in medical education. Although teaching is often an expectation and responsibility of physicians and other health care professionals, most physicians receive no formal training in teaching pedagogy or "pedagogical content knowledge" during medical school (Geddis, 1993; Shulman, 1987) and little during post-graduate medical training. These teaching responsibilities begin during post-graduate medical education, which makes it important to begin training in educational pedagogy during residency and fellowship and then sustain it by means of continuing medical education. For medical educators professional development in education and teaching is essential and most commonly obtained through faculty development programs designed to enhance instructional skills (Skeff et al., 1997). These programs are a valuable means to help medical professionals receive the "specialty" training they need to achieve their professional career goals in medical education. Furthermore, "comprehensive faculty development empowers faculty members to excel as educators and to create vibrant academic communities that value teaching and learning" (Wilkerson & Irby, 1998, p.387).

Purpose

The purpose of this article is to describe the evolution of the faculty development program at the Cincinnati Children's Hospital Medical Center into a comprehensive, multilevel program culminating in an innovative Online Master's Degree in Education. A secondary purpose is to share the important lessons we learned from collaborating with our College of Education colleagues at the university to expand and strengthen our educator development program. We

anticipate that describing our experience will be useful to other educators with similar goals in educator development.

Background

The Faculty Development Program at Cincinnati Children's Hospital Medical Center (CCHMC) began in the fall of 1995 with a basic faculty development course targeting 1) community physicians who teach residents in their offices, and 2) members of the Division of General and Community Pediatrics who play a prominent role in resident and medical student education in general pediatrics. Since that first course, the faculty development program has become integrated into the overall teaching program of the medical center and expanded to a comprehensive, integrated, interdisciplinary program targeting learners at all levels. The current program offers educator development to all disciplines in medicine, nursing, and ancillary health professionals at multiple levels of learners including residents, fellows, junior faculty, and experienced medical educators (see Table 1).

TABLE 1: Educator Development Activities at CCHMC

Type of Faculty Development	Goals & Objectives	Target Audience	Format	Duration
Residents as Teachers	To train residents in basic teaching skills.	Residents at all levels	Series of 45-minute interactive sessions	Monthly as part of resident teaching conferences
Fellows Teaching Workshop	To develop and expand the teaching skills of the clinical fellows at CCHMC to become better educators in their discipline.	Clinical fellows from all disciplines of medicine and surgery	Interactive one-day workshop	Annual, in early summer
Basic Educator Development Workshop	To increase teaching effectiveness and expand knowledge of teaching methodologies and strategies	Academic and volunteer faculty, community physicians	Four-day workshop – didactic & interactive sessions with role-play activities and small and large group discussions	Annual -generally in early November (2 days), March (1 day) and May (final day)
Advanced Educator Development Workshop	To improve medical educators' professional skills and to expand their teaching and educational practices based on the application of advanced educational theories	Medical education faculty (regional and national audience)	Interactive and hands-on sessions designed for the more experienced medical educator.	Annual two-day workshop in September

With the expansion and success of the educator development program, the faculty development team at CCHMC recognized a need for advanced, graduate level training in education for career medical educators as an extension of current offerings. This need was confirmed by informal needs assessments at local, regional and national meetings and supported by the availability of grant monies for such programs from the Health Services and Resources Administration (HRSA) Bureau of Health Professions (BHPr). This federal agency provides grant funding for master educator fellowship programs that offer a Master's Degree in Education (Faculty Development in Primary Care Grant Program Application, 2007). Further evidence for the desirability of graduate level training of medical educators comes from a broad based examination of the literature which suggests that medical education research is most commonly conducted by career medical educators with advanced graduate training in education (Berlin, 1996; Bligh & Brice, 2008; Brotherton et al., 2004; DeWitt & Baldwin, 1992; Lough, 2006; MER, 2008; Williams & Gerrity, 2005). Also, medical schools and residency programs are increasingly incorporating internet-based education into their curricula (Bove, 2008; Casebeer et al., 2002; Waggoner & Martin, 2006; WorldWideLearn, 2008; Wutoh et al., 2004). This requires expertise in distance learning technologies, which are commonly included in formal graduate programs in education.

In order to address this need, members from the faculty development program at the University of Cincinnati (UC) College of Medicine Department of Pediatrics approached the faculty from the UC College of Education (COE) in 1998 and presented the idea of developing a master's degree program for healthcare professionals (Lewis & Baker, 2005). In early 1999, planning began for the development and implementation of a Master's Degree in Education program tailored to physicians and other healthcare professionals.

Program Rationale

The primary goal of the Master's Degree in Education Program was to provide innovative solutions to existing healthcare professionals' educational needs for 1) knowledge building, 2) knowledge mobilization, and 3) transfer into practice, all within the domains of medical education and professional development.

The rationale for this program, which is similar to the rationale for faculty development in education in general, comes from several issues in medical education. Teaching is a significant responsibility of most physicians. They teach in several different settings, including lecturing in the traditional classroom setting, presenting at medical conferences, conducting teaching or attending rounds on patients with students and residents, and teaching one-on-one at the bedside. Yet, formal instruction in effective teaching principles and teaching methods is absent from most medical school curricula. Secondly, as resident primary care education has moved from the hospital to the community setting, physician educators are needed to train community physicians in their new role as teachers as well as to provide academic physicians the educational pedagogy of effective teaching. Finally, medical education in the 21st century is changing from the traditional emphasis on teacher-centered, didactic instruction to new interactive methods drawing on the principles of adult learning theory. Computer assisted teaching and learning is developing to address these principles and to meet the needs of disparate learners. These issues require formal training in educational pedagogy and educational research to advance medical education as a discipline.

Program Development Approach and Implementation

In the fall of 1999, four pediatricians from the faculty development team volunteered to enroll in a master's level graduate program at the UC COE with a major in Curriculum and Instruction (Lewis & Baker, 2006). This first pilot group of faculty volunteered because of their active involvement in the faculty development program and extensive experience in medicine and medical education (average 26 years). The objectives of this pilot group were to: 1) learn the content and scope of the existing master's degree in education program, 2) design appropriate medically oriented learning activities and evaluation techniques in order to customize and tailor the coursework to healthcare professionals, 3) evaluate the time feasibility of the program in the context of full-time professional duties, 4) determine the appropriate format for the program to maximize accessibility and flexibility, 5) evaluate the curriculum of the program relative to the needs of medical educators, and 6) receive the advanced education and degree offered by the program. This first pilot group took the coursework in a combined in-class (10 courses) and distance-learning format (2 courses) from 1999 to 2001.

Following completion of the coursework by the first pilot group of four physicians, the curriculum committee finalized the curriculum with input from this group and COE faculty and redesigned it to an all-online format. In the fall of 2001, the second pilot group of six physicians (three local and three distance) enrolled in the all-online format program. This group's experiences with the program raised new questions about the role of the faculty in online teaching, course design, and administration issues. Three participants left the program at the end of the first year: one due to a change in career direction, a second due to time commitment and personal issues, and a third who was dissatisfied with some of the course instructors. The experience and feedback from the second pilot group suggested that we 1) focus on recruiting a core group of dedicated instructors from the COE who were fully supportive of the program, 2) search for a support tool for synchronous meetings (we selected WebEx, an internet-enabled conferencing tool), 3) add curriculum development and evaluation to the curriculum, and 4) focus on orientation and online course materials development (Lewis & Baker, 2005).

With the final revisions, the Online Master's Degree in Education Program was launched nationally in the fall of 2002. The target group was 1) physicians, nurses, and other health professionals with significant teaching responsibilities and interests, 2) physicians, nurses, and other health professionals with responsibilities and interests in educational research, and 3) physicians in academic clinical fellowships in all disciplines who are seeking an advanced degree alternative to the more traditional research-oriented M.P.H. and M.S. graduate degrees.

Program Objectives

In consideration of and consistent with the mission of faculty educator development at CCHMC, we established the following objectives for the Master's Degree program:

- Offer an accredited, advanced degree program in education resulting in a Master's Degree in Education with a major in Curriculum and Instruction (C&I) and an emphasis on medical education
- Provide the instruction online in order to maximize flexibility and accessibility of the program and reach a national audience of full-time health care professionals.
- Offer the instruction via Blackboard, a user-friendly, web-based infrastructure software program designed for e-Learning

- Provide opportunities for participants to develop educational projects at their home site and receive credit for those efforts as part of organized coursework
- Provide avenues for continuing professional development and continual learning so that healthcare professionals can meet their educational and professional career goals
- Train healthcare professionals as effective educators within three educational themes: Adult Learning, Curriculum and Teaching, and Educational Evaluation and Research
- Increase participants' contemporary knowledge of the methods and techniques of teaching and learning
- Develop participants' competencies in educational program planning and evaluation
- Provide knowledge of the methods of assessing and evaluating learners' progress
- Develop participants' skills in the effective use of technology and instructional media
- Provide participants with opportunities to engage in activities designed to improve teaching and learning in educational settings
- Improve educational research methods and strategies

Program Curriculum

The curriculum of the Online Masters program was adapted from the existing K-12 and higher education Curriculum and Instruction (C&I) major, already offered by the COE. The curriculum was modified to suit the medical education environment by the first pilot group of four physicians from CCHMC. The resulting curriculum meets the standard of a Master's Degree in Education as required by the COE with the appropriate rigor and breadth of the degree.

The 45 credit hour program spans a two-year period of part-time course work. Online orientation at the beginning of the program is provided to increase student readiness for Web-based distance learning in general, learn how to navigate the online course platform (Blackboard), and participate in internet-enabled conferencing tool (WebEx). Based on participants' preference the program can be extended to more than two years by special arrangement. The most common reason for extending the length of the program is to accommodate physicians whose professional responsibilities preclude taking two courses per quarter. All courses are offered through the UC COE, Division of Teacher Education. There are three educational themes in the curriculum: adult learning, curriculum and instruction, and evaluation and educational research. In addition to the

required core courses, participants are required to complete an individual study (or elective), a practicum, and a master's project. The individual study includes specific topics selected by the participants that are related to medical education. For the required practicum, participants prepare an electronic educational portfolio which is a collection of descriptions of various teaching activities and work product and documented evaluations of those teaching projects (combination of self-evaluation, peer evaluation, and supervisor evaluations). The master's research project is required to complete the program. This project provides participants the opportunity to conduct an original educational research project of their own choice, using knowledge gained from coursework. Twenty (20) hours per year of Category I Continuing Medical Education credit are awarded to participants.

Certificate in Medical Education Program

In addition to the master's program, we offer a "Certificate in Medical Education" program, which is derived from the master's program. The certificate program offers advanced training in educational pedagogy to health care professionals in a less time-intensive format than the master's program. The goal of the certificate program is to expand core knowledge with practical applications and skills in educational pedagogy tailored to health care professionals. The certificate program consists of five core courses, selected by the participant, from the master's program core curriculum. All of the courses, which are offered online, are taken for graduate credit and are applicable toward the certificate program, the master's program, or can be transferred to other university programs. This option gives greater flexibility to our audience to enroll in individual courses, often as a preliminary to enrollment in the larger master's program. The Certificate program does not require application and admission to graduate school.

Challenges in Program Development

We have previously reported the challenges we faced in the development of the faculty educator development program focusing on the master's program (Lewis & Baker, 2005). The important lessons we learned from these challenges are likely to be applicable in other programs who seek to incorporate graduate level training into their faculty educator development programs:

1. Cultural differences between professional educators and, in our situation, medical educators must be recognized and addressed. This concept includes the politics and administrative requirements of the two disciplines.
2. A needs assessment of faculty interest and expertise must be performed and training offered to novices in distance education.
3. The time and human resources required to plan and develop a comprehensive program in educator development are significant and require considerable financial backing and manpower (planning, web design, marketing, cost analysis).

Current Status of the Program

This program now provides national and international program participants with a quality, accredited, advanced graduate degree in education designed to promote health care professionals' short and long-term career goals as productive scholars. To facilitate program initiatives and activities we were also fortunate to obtain grant support from HRSA, Bureau of Health Professions to partially fund this program for the three years from July 1, 2003 through June 30, 2006, including scholarship monies that help us recruit more students (Baker, 2003). Since the program inception in 2002, one hundred ten (110) students have enrolled in the program, 56 females and 54 males. The mean age of participants was 40 (range 27-64).

To date (July 2008), 20 participants have graduated from the program and received their degrees. Currently, we have 73 active students who are taking the courses on a regular basis (thirteen of these are in the certificate program). Seventeen (17) students have withdrawn from the program for an overall retention rate of 85 %).

Program Evaluation

Evaluation and assessment of online programs are crucial to making appropriate modifications for effective instruction as well as to monitoring fidelity in all phases of the program (Resnick et al., 2005). Based on the best practice guideline of the online masters program, the program evaluation is an ongoing process to ensure that the stated mission and goals of the program are accomplished including the following objectives:

- Review and monitor the program effectively by assessing its quality and progress

- Enable the program team to make changes that improve program effectiveness.

- Provide information about delivery that will be useful to the program team.

- Determine the effectiveness of the program to participants.

- Document that the program objectives have been met.

Program evaluation includes both qualitative and quantitative data from a variety of evaluation methods such as individual course evaluation, needs assessments, cost analysis and program effectiveness (e.g. outcome). For most profit-based programs, a performance measure used to evaluate cost effective outcomes is the return on investment (ROI), which is a metric that compares the program's monetary benefits with the cost of training. However, for the online master's program our evaluation is based on academic productivity and advancement generated from an investment in this program. We presuppose that this productivity will produce a more long-term monetary value indirectly through grant activity, promotion, salary increase, and local and national recognition.

In order to monitor program outcomes, program graduates and participants are asked to complete an annual survey of the effects of the program on their professional lives including changes in academic position and location, promotions, participation in medical education activities, national presentations in the area of medical education, publications in peer-reviewed journals (of educational research and program description), and educational grant activities.

The master's program appeals to a broad spectrum of medical educators from multiple medical disciplines and across a wide age range. Of the first seventeen graduates from the program, ten disciplines were represented and the age range of the graduates was 28 to 57 years of age (Table 2).

TABLE 2: Demographics of Program Graduates (n=17)*

Age at Entry	Gender	Discipline	Position/Title	Year of Graduation
54	M	General Pediatrics	Professor, Director Education Section, Gen. & Comm. Pediatrics	2001
57	F	General Pediatrics	Pediatrician	2001
39	M	Internal Medicine	Assistant Professor	2005
42	M	Ophthalmology	Clinical Professor; Director of Resident Education	2005
56	F	Medical Education	Director, Clinical Skills Laboratory	2005
34	F	Pediatrics-Internal Medicine	Associate Professor	2005
43	F	Pediatrics-Internal Medicine	Program Director, Internal Medicine-Pediatrics	2005
43	F	Pediatric Emergency Medicine	Associate Professor	2005
31	M	General Pediatrics	Assistant Professor	2006
36	M	Emergency Medicine	Assistant Professor	2006
47	M	Family Medicine	Assistant Director - Flower Family Practice Residency	2006
39	M	Pediatric Emergency Medicine	Associate Director, Division of Emergency Medicine	2007
50	M	Pediatric Rheumatology	Director of Clinical Services; Professor of Pediatrics	2007
32	M	Obstretrics & Gynecology	Resident Physician	2007
27	F	Nursing and Simulation	Simulation Specialist and Instructor	2007
34	M	Emergency Medicine	Attending Physician	2007
33	M	Emergency Medicine	Staff Physician	2007

* As of December 2007

The annual survey results of outcomes of the graduates of the program indicate a successful program. The outcome goals of the program included 1) the ability to apply knowledge, conduct educational research and evaluation, and publish results in peer-reviewed journals, 2) ability to present scholarly works in a national/international forum, 3) ability to compete successfully for

grant monies, and 4) ability to teach with distinction and be recognized for educational achievements. Using the metrics of publications in peer-reviewed journals, national/international presentations, successful grant applications, promotion, and teaching awards that correspond to these goals, eleven (11) of the graduates published papers in peer-reviewed journals. Eleven gave 164 national and international presentations, nine (9) were awarded 21 educational grants totaling $4,250,000, and ten (10) graduates garnered 37 teaching awards and 6 promotions at home institutions.

The following comments are drawn from the annual survey of graduates and participants:

"The Masters Program has given me new ideas which help in these changing times of graduate medical education. I have been able to plan and write curriculum more effectively. I have been able to use the evaluation instruments at our institution more effectively. My teaching style has been broadened. I am better prepared to assume more administrative duties such as residency director."

"The masters program has served to strengthen my skills and confidence in teaching. The program has improved my job satisfaction. I have had a promotion from assistant to associate residency director."

"As a result of entering this program, I have accomplished many of my goals as an educator. Currently my department is seeking to promote me to a higher position. My supervisor has also stated that she is considering me for another promotion upon completion of the masters program. I have been given new responsibilities such as seeking opportunities for additional funding for the department. I have been recognized as a representative for my department, managing outcome data, and taking the lead in coordinating day-to-day activities. I also wanted to state that I have learned new information that has furthered my development in my career. Examples of my development include writing and reviewing grants. I also feel better about my job and I'm satisfied with my job and new responsibilities."

"It has directly led to opportunities to speak at education conferences and to implement the educational grant associated programs. I was also asked to be a member of a task force/focus

group for San Diego State University for its new certificate program in Medical Education offered through extension."

"While I am still early in my academic career, the skills I have gained during the master's program have had a great impact on my development of a niche within my field of pediatric emergency medicine."

"The master's program has given me the opportunity and knowledge to ask and study education based research questions. It has also given me the ability and stature within my department to design curriculum. It has improved my recognition within my department of 40 physicians and given me a promotion to my current position. Hopefully, with the publication of my efforts to this point, my national and regional career will also be enhanced."

Conclusions

Faculty development activities are essential to professional growth and career development, but for medical educators these activities must be varied and adaptable to the specific needs of medical professionals (Benor, 2000). Such activities can take many forms, from self-directed activities to organized programs of learning. Most medical academic centers have recognized the importance of formal educator development and "Teaching Scholars Programs" (Fidler et al., 2007), and have developed faculty development courses and workshops to improve the quality of teaching. However, this effort lacks the depth of knowledge necessary to teach from an educational conceptual base and to conduct educational research to document learning outcomes of these educational efforts required of career medical educators. As more medical institutions recognize this need and sponsor medical education as a distinct discipline, formal graduate programs in education are needed to provide health care educators with this in-depth knowledge. An important outcome of these formally trained medical educators will be leadership for this developing discipline. Several programs exist in the US and abroad that offer Master's Degrees in Education emphasizing medical education (Cohen et al., 2005), but most are either classroom based or have significant on-site requirements, which can be a deterrent to potential participants with busy professional and personal lives.

Recognizing these limitations, we developed an all-online master's program for health care professionals that take full advantage of Web-based instruction and the accessibility it affords. We believe that this online program and others like it will be available to a wide spectrum of health care professionals in an Internet-based format that takes advantage of the power and flexibility of distance learning, and will serve as a model for the delivery of web-based medical graduate education. The program encourages healthcare professionals to improve their teaching skills, acquire new teaching methods and strategies, improve their ability to integrate technology into teaching, influence curriculum development and evaluation, and conduct educational research. Much as health care professionals have embraced the concept of evidence-based medicine based on medical research and controlled trials, the curriculum and content of this program introduce participants to the large body of educational research that supports the concept of evidence-based education (The Wing Institute, 2006)

Professional development is an enduring need for all faculty with teaching responsibilities regardless of discipline to maintain contemporary knowledge in the field (content) and in teaching methodologies (process), which includes the expanding role of the Internet as a means of delivery of instruction and programs. As advances occur in content and process, educators need to mature, and continuing education and educator development programs are avenues for this maturation. Educator development programs likewise must mature to meet these demands, beginning with modest programs (conferences and workshops) and expanding as the demands (and expectations) of users increase. In many settings, as educators become more experienced, they realize the need for more advanced training as their career goals change, and they demand advanced training that only formal, graduate programs offer. This paper describes this maturation process at our institution and presents a model for expansion of faculty development programs to accommodate growing demands by budding career educators. Although our model is in the field of medicine, the process is applicable to other disciplines and other educators with similar goals. The model incorporates both content (educational pedagogy) and process (Web-based teaching). Although we chose an all-online format for the master's program, blended teaching using a combination of distance learning and face-to-face instruction is also applicable to formal offerings depending on availability of instructors and the needs of the learners.

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