Medical Teacher

ISSN: 0142-159X (Print) 1466-187X (Online) Journal homepage: informahealthcare.com/journals/imte20

Project-based faculty development by international health professions educators: Practical strategies

Stewart Mennin, Summers Kalishman, Mary Ann Eklund, Stacey Friedman, Page S. Morahan & William Burdick

To cite this article: Stewart Mennin, Summers Kalishman, Mary Ann Eklund, Stacey Friedman, Page S. Morahan & William Burdick (2013) Project-based faculty development by international health professions educators: Practical strategies, Medical Teacher, 35:2, e971-e977, DOI: 10.3109/0142159X.2012.731096

To link to this article: https://doi.org/10.3109/0142159X.2012.731096

Published online: 26 Oct 2012.

2013; 35: e971–e977 MEDICAL TEACHER

WEB PAPER

Project-based faculty development by international health professions educators: Practical strategies

STEWART MENNIN[1], SUMMERS KALISHMAN[1], MARY ANN EKLUND[1], STACEY FRIEDMAN[2], PAGE S. MORAHAN[2] & WILLIAM BURDICK[2]

[1]University of New Mexico School of Medicine, USA, [2]Foundation for the Advancement of International Medical Education and Research (FAIMER) Institute, USA

Abstract

Background: Project design and implementation, applied to real life situations, is emerging as an educational strategy for application of health professions faculty development learning within a supportive environment.

Aim: We conducted a retrospective analysis of project evolution to identify common experiences, challenges, and successful strategies of 54 mid-career faculty members from 18 developing countries who attended the Foundation for the Advancement of International Medical Education and Research Institute between 2001 and 2006 and designed, conducted, and evaluated education innovations at their home institutions.

Methods: Chronological analysis of the evolution of 54 projects over the initial 16–18 months of the 2-year Fellowship was based on an iterative qualitative analysis of 324 reports and individual interview transcripts collected over 6 years.

Results: Useful skill areas for project implementation included educational methods, leadership and management, and relationships/collaboration. Common challenges included competing responsibilities, lack of protected time, and limited resources. Themes identified with the evolution and success of education innovation projects included leadership and organization, collaboration, personal professional growth, and awareness of the relevant societal context.

Conclusions: Common challenges and success factors in project-based faculty development were identified. Twelve practical strategies to promote successful project-based faculty development emerged that can be generalized for faculty development.

Introduction

The contemporary complexities of education for the health professions require teachers to attend to abilities in and experiences with multiple pedagogical approaches that include: teaching and learning methods; assessment of learning; curriculum planning, design, and implementation; and the continuous evaluation of innovations and change. Today's educators must also be able to meet the challenges of teaching in a variety of diverse venues (e.g., community health centers, ambulatory clinics, hospitals); in individual, small and large group settings; in classrooms of every shape; and with varied degrees of resource availability. If one adds need for coherence and integration in health professions education, it is not surprising to see an increased emphasis on faculty development as a lifelong learning process (McGaghie 2009; Otero Ribeiro & Mennin 2010).

Because of these changes, faculty development, also referred to as staff development, is becoming more responsive to the felt needs of teachers in various areas (Steinert et al. 2006). In so doing, it has expanded beyond the acquisition of individual instructional skills to the development of capable practitioners who can meet the broad spectrum of community, institutional and societal needs (Stritter 1983; Bland & Schmitz 1986; Hitchcock et al. 1993; Mennin & Krackov 1998; Wilkerson & Irby 1998; Bruffee 1999; Fraser & Greenhalgh 2001; Bligh 2005; Steinert et al. 2006; Bleakley 2010; Otero Ribeiro & Mennin 2010). In addition, while most of the faculty

Practice points

- Faculty development dealing with innovation and curriculum change requires a focus that extends beyond health professions discipline, education specialization, and individual needs to embrace social skills necessary for collaboration, professional growth and management, and leadership abilities.
- Collaboration, networking, and mentoring emerge as central to project-based faculty development.
- Challenges for project-based faculty development in resource constrained settings include some issues similar to those in resourced settings (competing responsibilities, lack of protected time to work on projects) and some that may be unique (lack of trained technical support and inconsistent or poor internet connectivity).
- Twelve key practical recommended strategies essential for successful project-based faculty development emerged from this work.

Correspondence: Stewart Mennin, PhD, Rua Inhambu 1708, São Paulo 04520-015, Brazil. Tel: 00 55 11 2501 8345; fax: 00 55 11 2501 8346; email: menninsp@gmail.com

ISSN 0142–159X print/ISSN 1466–187X online/13/020971–7 © 2013 Informa UK Ltd.
DOI: 10.3109/0142159X.2012.731096

development literature has focused on the individual teacher (Stritter 1983; Bland & Schmitz 1986; Hitchcock et al. 1993; Wilkerson & Irby 1998; Steinert et al. 2006), more recently there has been increased emphasis of faculty development as a social and cultural process (Engestrom et al. 1999; Arrow et al. 2000; Wenger et al. 2002; Davis et al. 2008; Engestrom 2008; Gergen 2009; Daniels et al. 2010; Bleakley et al. 2011; O'Sullivan & Irby 2011). There is an emerging view that faculty development for innovation and change in health professions work requires practical and theoretical knowledge of the principles of education and development of a spectrum of leadership, management, and relational skills (Steinert et al. 2012). Such multilayered faculty development is optimized when educators have a responsibility, and an opportunity, to apply what has been learned in the context of the realities and challenges of their home institutions and communities.

What can be learned about approaches important for success in faculty development education projects from a group of international educators seeking to innovate and make changes in health professions education in resource constrained settings in different regions of the world? This report responds to this research question through retrospective qualitative analysis of the reported experiences of health professions faculty members from 18 countries who implemented education innovation projects at their home institutions. The challenges encountered and skills needed for project success are viewed through the lens of the Foundation for the Advancement of International Medical Education and Research (FAIMER) Institute, a two-year faculty development Fellowship with on-site sessions located in Philadelphia, USA (Norcini et al. 2005; Burdick et al. 2006; Burdick et al. 2010).

The Fellowship curriculum centers around projects designed by Fellows to introduce change and improve existing practices in health professions education at their home institutions (Gusic et al. 2010). Fellows apply practical skills, theories, and themes learned in the Institute curriculum (Leadership; Educational Methods; Project Management and Evaluation; Scholarship and Research) to their project. The goal of the FAIMER Institute is to create an international community of practice among health professions faculty who are credible institutional leaders as "change agents" and "educational scholars/researchers" who can collaborate on projects and scholarly endeavors that advance health professions education and ultimately contribute to the improvement of healthcare in their respective countries and regions (www.faimer.org; Wenger et al. 2002; Burdick et al. 2006; Mouradian & Huebner 2007). Each participant develops and implements a project of their choice designed to introduce a needed educational innovation or change at their home institutions. Design and implementation of this project involves the application of knowledge and skills in health professions education and serves as a central anchor for faculty development across the two years of the Fellowship (Burdick et al. 2011). The focus of projects have included education methods and models, curriculum change, program evaluation, student assessment, alignment with health priorities and needs, distance and computer-based learning, faculty development, student affairs, professionalism, and organizational development (Burdick et al. 2012). Project proposals are part of the application for acceptance to the Fellowship, and project concepts and designs are then refined and supported over the course of the Fellowship. A few projects are completed in one year (after which the Fellow may undertake a modified project in the second year of the Fellowship), most last for two years of the Fellowship, and some extend beyond two years. Each Fellow develops his/her project rationale, identifies desired outcomes for the particular project, and designs and implements project evaluation in conjunction with the project itself. Previous analysis of skills gained from the Fellowship as well as focus and impact of projects has been reported (Burdick et al. 2010; Burdick et al. 2011).

Methods

This study involved longitudinal qualitative analysis with triangulation of multiple data sources (interviews, document reviews) collected over the course of the first 16–18 months of the Fellowship. The data collection and analysis reported here was completed by an external program evaluation team (SM, SK, and ME) with extensive experience in medical school curriculum evaluation, based at the University of New Mexico Office of Program Evaluation, Education, and Research (PEAR). One of the PEAR team members (SM) was also a faculty member for the FAIMER Institute. This team worked in collaboration with the FAIMER Education division staff and faculty for the FAIMER Institute (including SF, PM, and WB) to co-design and facilitate the use of findings as part of the Institute program evaluation, in line with collaborative approaches to evaluation (Cousins & Whitmore 1998; Fetterman et al. 2010).

Transcripts of interviews with and written reports from 54 mid-career health professions faculty members (30 men and 24 women) from 18 countries who participated in the two-year FAIMER Institute program between 2001 and 2006 formed the basis of the data in this study. Most Fellows had MD or MBBS degrees; some had PhDs in basic sciences. Each Fellow submitted six written project reports, including: (1) a project description in the initial Fellowship application, (2) four project progress reports at intervals of 3, 5, 11 and either a written or telephone report between 16 and 18 months after the initiation of the Fellowship, (3) a project poster, and (4) an abstract at the end of one year of the Fellowship. Project reports included the purpose, objectives, methodology and strategies, information about any changes, challenges and facilitators, and results and outcomes. In addition, Fellows were individually interviewed at the end of one year of the Fellowship via a one-hour semi-structured interview conducted face to face in Philadelphia by two individuals (SK, ME) from the PEAR external evaluation team. Interviews were audiorecorded and transcribed. Interview questions addressed participants' views about critical incidents and reflections upon the FAIMER Institute, with the semi-structured format allowing for probing for deeper understanding. Typical questions included: Please describe successes and challenges you have experienced in implementing and sustaining your project; Please describe strategies you have implemented and are

Table 1. Skills most frequently mentioned as useful in implementing education innovation projects.

Skill theme	Specific examples
Educational methods	*''I have become more conscious of [the] need for the assessment . . . assessment is not just a question of taking a survey or asking questions, but it has to do with making the correct survey and asking the right questions.''*
	''Program evaluation and student assessment are two important issues that should be addressed at the beginning of the design of the project.''
Methods and techniques for leadership and management	*''Used every day skills learned . . . on leadership, teamwork and conflict management''*
	''Learned the importance of persistence – to organize, evaluate and sustain ideas until they gel''
	''I especially learned and gained from the Logic Model too, and linked it to program evaluation within a working group . . .''
	''Working with people in a team, capitalizing on their positive points''
	''Tools for program development, project management, change management, large group teaching, curriculum planning and program evaluation''
	''I have learned to work appreciatively. This really had an impact on the people around me.''
	''Everywhere you can find small but very important found pilots – other faculty members with similar ideas regarding your project. ''
	''Listen to those who oppose your ideas. Bring people in to be owners and part of the project.''
Relationships – collaboration, networking, and mentoring	*''A sense of sharing – am willing to share with anyone, even other institutions considered as competitors''*
	''The experience helped me to see the importance of networking, mentoring, and being mentored; it broadened my worldview toward greater possibilities . . . Networking was valuable for sustainable development of projects''
	''Managed to interest a senior staff member to help follow-up the project.''

planning to address the continuation of your project; and Please describe activities that have helped sustain or maintain this project; In every project, there are unexpected and unanticipated events that affect what occurs. Please describe any unexpected or unanticipated events that have influenced your project.

Altogether, 324 reports and transcripts from 54 Fellows comprised the data for the qualitative analysis of project-based faculty development in this report. These data were analyzed by the PEAR team of external evaluators (SM, SK, and ME), using chronological analysis of the unfolding of each project to highlight key issues as described by Patton (2002) and iterative reading to identify points of change and departure from the original project proposal, unexpected successes or setbacks, and confounding events and circumstances. An initial series of reading and analysis focused on identifying skills and challenges that had an impact on project success. A subsequent series of reading and analysis by the same team for frequency distilled these skills and challenges into the three themes focused on project progress over time. A final review of these data, coupled with the experience and observations of the program faculty resulted in the 12 strategies recommended for successful implementation of faculty development projects. All quotes shared in the results were rendered anonymous in regard to gender, discipline, and country.

The evaluation of the FAIMER Institute, including the analysis described here, was approved by the Institutional Review Board at the University of New Mexico, School of Medicine.

Results

Skills learned and challenges encountered in faculty development projects

Major skills used in the projects, analyzed across Fellows and over time. The three predominant skill domains viewed useful in projects by the majority of Fellows were focused on educational methods, leadership and management, and relationships (collaboration, networking, and mentoring). In addition to their own personal skill development, faculty development was a part of all projects, and was mentioned more frequently as projects matured over time. The following individual responses represent the comments of all cohorts as they reflected on the importance of skills and methods gained through their FAIMER faculty development experience (Table 1).

Challenges frequently encountered in the projects, analyzed across Fellows and over time. Fellows from the classes of 2001–2006 identified several common challenges in their reports and interviews (Table 2). These involved adaptation of skills and concepts learned at the Institute in Philadelphia to the realities of their home environment. Fellows had many competing responsibilities at their home institutions as did their colleagues with whom they were working on projects. They also encountered difficulty in making the inevitably abrupt transition from immersion in the on-site Fellowship environment with camaraderie, support, access to expertise and face-to-face mentoring to the environment of their home institutions with competing work demands and relative isolation. Fellows commonly noted their frustration at the lack of good library access.

Major themes for success in implementing education projects

Four themes emerged from the qualitative analysis of the reports and interviews related to the evolution and success of projects, and represent a distillation of skills and challenges highlighting the dynamic experience of addressing education project challenges over time. These themes, embedded in a health professions education program, emphasize the importance of leadership and organizational skills, personal professional growth (e.g., self confidence, reflection), collaboration, as well as awareness of the relevant societal context of their work.

Table 2. Challenges frequently encountered in implementing education innovation projects.

Challenge theme	Specific examples
Workplace environment	*''The real challenge of my project has thus been to find an innovative way of adding an important educational dimension (formative assessment and structured regular feedback) to our existing clinical bedside teaching program without placing undue strain on busy clinical service sites and overworked clinician tutors whose teaching efforts are often inadequately recognized.''*
	''Convincing local institutional faculty and/or administrators about the importance of innovation in medical education''
Limited resources	*''Lack of trained technical people for implementation of projects related to information technology''*
	''Lack of adequate office or classroom space, or administrative personnel''
	''Connectivity problems for accessing internet educational materials and for participating in intersession faculty development discussions''
	''Translation of educational materials for local use and for those not proficient in reading and comprehending English''

Leadership and organizational skills. Fellows reported that learning to "manage people" was crucial to implementing their projects. Leadership in the situations described by the Fellows is primarily adaptive and requires helping people to learn to do the work necessary to bridge the gaps and challenges they are facing (Heifetz 1994). They recognized that the support, the available resources, and the skills learned at the Institute, including teamwork, were vital to the design and implementation of their projects. In addition, they commented on the importance of documentation, evaluation, and appreciating others. All Fellows mentioned the importance of technical organizing skills such as the Logic Model, Gantt Charts, and project planning processes. They pointed out that skills and tools learned during the Institute were practical, relevant, and useful in everyday work activities beyond their projects. One Fellow noted: "We became change agents by first altering our own maps." Another Fellow reported using "...consensus building as a style of leadership—and incorporating it with understanding oneself and reflecting on ideas." Fellows also noted the importance of leadership and management for dealing with the challenges of change – modifications to projects often were needed in response to Fellows' revised understanding of an evolving context. As Fellows noted: "Reframing helped my project." "Had to use less expensive and less technologically-based software." "The project turned out to be merely a loose thread unraveling bigger issues."

Fellows recognized the need to alter the scale of their projects to manage challenges related to limited resources. All Fellows indicated that their projects were conceived initially on a grander scale than was actually implemented and based on initial experiences and over time were scaled down to a more realistic and manageable level. Two Fellows commented: "Never imagined the amount of details that needed [to be] solved to achieve an acceptable outcome"; "Underestimated the real dimension of the work we had to do."

Highlighting the intersection of skills and challenges, Fellows noted the utility of applying educational methods to address challenges of institutional adaptation to change. Specifically, pilot testing and use of "found pilots" (other teachers already doing something innovative and different that could be linked with the Fellow's project) helped to increase the institutional acceptance of projects (Hirshhorn & May 2000). For example, the introduction of an OSCE as a national exam was first done as a pilot. The data and experience promoted greater acceptability among teachers. Two Fellows noted:

> "Do a pilot and get it to work, then expand it ... what I had to do was to keep reframing a project until I found something which was feasible and was considered feasible by a small cohort of enthusiasts who were then actually willing to take it on ..." "After a successful pilot in internal medicine, we now want to take it into the other disciplines, OB/GYN, surgery, and pediatrics."

Collaboration. Collaboration refers to working together across boundaries, across significant differences and with similarities towards transformative exchanges (Olson & Eoyang 2001) with a shared vision to improve the relevance and quality of education for future health professionals who will work together in their health systems to serve society. Recognition of the importance of collaboration was a recurrent theme identified by Fellows across the classes. One Fellow stated that, "...collaboration in research ventures in health professions education adds value to research even if the process may be slowed by communication disparities and differences." Fellows across cohorts reported that their experience at the Institute and the support of FAIMER faculty enhanced their ability to collaborate. One Fellow said, "The important collaborations with educators from other countries ... broadened and enriched [my] knowledge."

Personal professional growth. A recurring theme that emerged from discussions of collaboration among Fellows, especially across classes, was acknowledgment of personal professional growth, especially in self-confidence and ability to pursue a career in health professions education. One Fellow commented that he is developing "...a silent self-confidence ... and the patience to know that everything comes to he who waits." Many Fellows reported an increase in self-confidence as they applied various leadership and organizational skills. As one Fellow commented, "My comfort level as I teach, assess students, chair committees, participate in meetings, conduct workshops is high as a result of the skills and competencies I have acquired through my FAIMER experience."

Fellows also explicitly appreciated the opportunity to learn, gain skills and the support to design and implement health

professions education projects. They perceived their personal lives to be changed by their Institute experience, as well as their professional lives. One Fellow stated that "FAIMER gave [me] the knowledge, tools, network and personal opportunities to be a positive change agent, not only in [my] professional [life], but also in [my] personal life."

Awareness of societal context. Successful projects necessarily involved multiple interwoven dimensions of leadership, organization, collaboration and personal growth, the relevance of which was inseparable from society and regional cultures. Fellows reflected often about challenges of adapting their FAIMER experience to their country-specific situations as well as increased awareness of the societal context. One Fellow indicated that in-depth knowledge of the reality of her/his country helped her/him make an accurate diagnosis of what is effective for projects in that region, and now she/he can adapt knowledge to multiple areas of her/his country's reality. Another Fellow stated that she/he learned that in her/his country, medical education as a discipline is not valued much unless it leads to scholarship such as research articles in peer-reviewed journals. Additionally, Fellows' comments reflected the realization that their university administrators provided little support for higher standards in medical education unless it reflected favorably on Fellow's personal advancement.

Discussion

The results from the collective experiences of the Fellows confirm what is obvious: there are no easy approaches and recipes to change and innovation in education. In addition to specific health professions education skills, such as teaching methods, assessment and evaluation, faculty development for other abilities are central and necessary to improve entire schools and programs. The four broad themes that emerged in this study include practical knowledge and skills in: leadership and organization, collaboration with attention to relationships, personal professional development, and awareness of societal context. As has been shown in previous reports, Fellows found that these topics were newer to them than were educational methods and reported substantial increases in practical knowledge and skills in these areas (Burdick et al. 2010). The dynamic interplay of these themes was unique to each situation, yet the need to develop them was common to all situations described by the Fellows. Change, in the practical day-to-day reality of the projects followed in this study, was educational in the sense that learning is understood as adaptive action in response to evolving circumstances (Snowden 2002; Heifetz et al. 2009). The interaction of similarities and significant differences among a diverse international group of faculty with a common goal to improve regional health led to the emergence of transforming exchanges from and within a community of practice. Shared goals to accept responsibility for and to contribute to the improvement of the health of society (Boelen & Woodland 2011) are part of the global mission of the FAIMER Institute.

Applying what has been learned in authentic settings and learning from reflection, feedback, and iterative experience has been emphasized by other researchers (Sheets & Henry 1984; Sheets & Henry 1988; Coles & Tomlinson 1994; Hewson 2000; Davis et al. 2008; Sullivan & Rosin 2008; Bleakley et al. 2011), all of whom suggest that faculty members need to practice what they learn, and that immediate relevance and practicality are key. The majority of Fellows' reports described projects that were developed to meet the needs of a particular group in a particular setting (Burdick et al. 2011). Over and over again, we saw that the evolving interdependent dynamics of health professions education and regional health required continued learning and adaptation throughout Fellows' experiences.

The emergence of common themes and experiences from a diverse group of professors over six years, across several continents, involving a wide range of subject domains and conditions, combined with our experience of over 30 years with leadership development programs and projects, led to the synthesis and framing of the present results as 12 recommended strategies we believe can be useful for others engaged in faculty development that embraces socially relevant curriculum change and educational innovation.

12 Recommended strategies

(1) *Adjusting the scope and time frame of the project.* All Fellows indicated that their projects over time were scaled down to a more realistic and manageable level. This seemed to be the case regardless of the scope of the project, that is, whether the project involved a change in the entire curriculum, a segment of the curriculum, or a course within the curriculum. The need to scale down project size was also apparent across various types of educational changes, including introduction of new technologies and assessment methods. Universally, project objectives were rewritten and reframed to be more specific and more limited in scope.

(2) *Approval requirements.* All projects had to be approved by various configurations of Deans, committees, Institutional Review Boards (Ethics Committees), faculty, students, and communities. This added to the time required for completion, and was related to the need for scaling down the size of the projects.

(3) *Usefulness of pilot tests.* Pilot testing helped to increase the institutional acceptance of projects.

(4) *Importance of team building and task forces.* The ability to gather and interest others in a project was an essential skill since all projects involved collaboration.

(5) *Unanticipated delays and setbacks.* Unanticipated events are a fact of life and all Fellows had to adapt to it. For example, one Fellow experienced a 4-month strike and then new people becoming in charge. This resulted in lost momentum and relationships and required a new time frame.

(6) *Need for flexibility to modify the project along the way.* No project unfolded and was implemented as originally planned. The capacity to continuously adjust and adapt to changing circumstances was a marker of success.

(7) *Adapting projects to changing institutional priorities and policies.* By definition, each project was disturbing

to the status quo, introducing a variation or different approach into an existing curriculum or program. In some cases, a project was part of an ongoing institutional change process and the role of the Fellow was more as a manager. In other cases, the project originated with the Fellow who then had to develop and sustain institutional support. Fellows had to incorporate the views and understanding of their colleagues in order to be able to move projects forward. Each project has a zone of variability (innovation configurations) within which it adapts to the institution needs and outside of which it becomes another project altogether (Hall & Horde 1987). The ability to embrace different perspectives while moving forward with a project was recognized by all Fellows.

(8) *Using "found pilots".* Connecting with found pilots at times can become part of the positive deviance approach to change (Marsh & Schroeder 2002) and help promote pilot testing and expansion of the desired project. Several reported Fellows found pilots to be helpful.

(9) *Inevitable and continued need for faculty development.* The maturation of projects created a need for greater faculty development as an essential component for collaboration, expansions, institutionalization, and sustainability.

(10) *Evaluating and modifying the project frequently.* Frequent short-term evaluations permitted smaller, and presumably more doable, adjustments. Required reports and project accountability to the FAIMER Institute and to peers established accountability as a programmatic ground rule.

(11) *Expanding with new people.* All projects required collaboration in the form of sustained collective work toward an interdependent shared vision. Many projects became established as part of the institution. This was usually preceded by more teachers joining the project and, in some cases, becoming project coordinators and leaders while the originating Fellow developed other projects.

(12) *Critical importance of reading the literature, knowing the subject in its full context.* Most Fellows were relatively new to health professions education and inexperienced with the relevant literature in the field in general and with project-specific literature. An additional challenge was that most of the literature in health professions education is in English and many Fellows speak, read, and write English as a second language. Finally, many Fellows noted the lack of access to such literature. In the last five Fellowship cohorts, these issues have been addressed by providing on-line library access through partnership with Jefferson University School of Medicine, and by adding a requirement for Fellows to report new relevant literature citations in each progress report.

Limitations of this study include the fact that Fellows who entered the program did so partly on the basis of their proposed project. This introduces some bias in the selection of projects and Fellows. Moreover, the data are self-reported and present an unavoidable degree of social desirability. It is difficult to verify independently what actually happened; however, faculty discussed project progress with the Fellows throughout the Fellowship period through e-mail and teleconferences, as well as having in-depth discussions of the poster and plans for the second year. In addition, previously reported data on publications and presentations from the projects support the observation that projects came to fruition (Burdick et al. 2010; Burdick et al. 2011).

Conclusions

Project-based faculty development in health professions education provides a powerful stimulus and dynamic context for health professions educators to learn about and implement in practice fundamental concepts of leadership, management, and collaboration. The lessons that emerged from the study of these projects point to the importance of the 12 recommended strategies for successful project-based faculty development.

Several of these strategies have implications for the scope of projects, the need for flexible project planning, and the importance of actively engaging others in project planning and implementation (Hirshhorn & May 2000). The strategies, experiences and learning being common to 54 faculty development projects situated in 18 developing countries, are likely to be generalizable to faculty development projects in general. The 12 recommended strategies also have potential implications for faculty development to support innovation and on a larger scale, for the culture of health professions education itself. It suggests a re-orienting to an ecological framework that embraces individual, team/department/unit, institution, and society/community levels and emphasizes their interrelatedness and interdependence in a collaborative heterarchical way.

Acknowledgments

This work was supported by a program evaluation contract from the FAIMER Institute to the Office of Program Evaluation, Education and Research (PEAR) at the University of New Mexico School of Medicine, and Mennin Consulting & Associates, Inc. 2002–2007. The authors thank the reviewers for constructive criticism that improved the manuscript.

This research was conducted at the FAIMER Institute, Philadelphia, USA; The University of New Mexico School of Medicine, Albuquerque, New Mexico, USA; and Mennin Consulting & Associates Inc., Albuquerque, New Mexico, USA and São Paulo, Brazil.

***Declaration of Interest*:** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

Stewart Mennin is an international faculty member of the FAIMER Institute. He was, at the time of the research reported, the Director of the External Evaluation Team for FAIMER and Director of the Office of Program Evaluation, Education and Research (PEAR) at the University of New Mexico, School of Medicine. This research project was supported, in part, by the FAIMER Institute.

Notes on contributors

STEWART MENNIN, PhD, is Professor Emeritus, Department of Cell Biology and Physiology and Assistant Dean, Emeritus, Educational Development and Research in the University of New Mexico, School of Medicine, NM, USA. He is the Principal of Mennin Consulting & Associates Inc., USA and Mennin Consultoria em Saude Ltda, Brazil.

SUMMERS KALISHMAN, PhD, is an Assistant Professor of Family and Community Medicine; the Director, Program Evaluation in Undergraduate Medical Education; and an Assistant Dean, Education Scholarship in the University of New Mexico, School of Medicine, NM, USA.

MARY ANN EKLUND, PhD, is currently a marriage education specialist and facilitator at the Aquinas Newman Center in Albuquerque, NM, USA.

STACEY FRIEDMAN, PhD, is an Associate Director of Evaluation and Planning, FAIMER, Philadelphia, PA, USA.

PAGE S. MORAHAN, PhD, is a Professor of Department of Microbiology and Immunology, and the Founding Director, Executive Leadership in Academic Medicine® at the Drexel University College of Medicine, and a Co-Director, FAIMER Institute, Philadelphia, PA, USA

WILLIAM BURDICK, PhD, is an Associate Vice President for Education and co-director of the FAIMER Institute, Philadelphia, PA, USA. He is a Clinical Professor of Emergency Medicine at Drexel University College of Medicine, Philadelphia, PA, USA.

References

Arrow H, McGrath JE, Berdahl JL. 2000. Small groups as complex adaptive systems: Formation, coordination, development, and adaptation. Thousand Oaks, CA: Sage.

Bland CJ, Schmitz CC. 1986. Characteristics of a successful researcher and implications for faculty development. J Med Educ 61:22–31.

Bleakley A. 2010. Social comparison, peer learning and democracy in medical education. Med Teach 32:878–879.

Bleakley A, Bligh J, Browne J. 2011. Medical education for the future: Identity, power and location. Dordrecht: Springer.

Bligh J. 2005. Faculty development. Med Educ 39:120–121.

Boelen C, Woollard B. 2011. Social accountability: The extra leap to excellence for medical institutions. Med Teach 33:614–619.

Bruffee KA. 1999. Collaborative learning: Higher education, interdependence, and authority of knowledge. Baltimore: The Johns Hopkins University Press.

Burdick W, Amaral E, Campos H, Norcini J. 2011. A model for linkage between health professions education and health: FAIMER international faculty development initiatives. Med Teach 33:632–637.

Burdick WP, Diserens D, Friedman SR, Morahan PS, Kalishman S, Eklund MA, Mennin S, Norcini JJ. 2010. Measuring the effects of an international health professions faculty development fellowship: The FAIMER Institute. Med Teach 32:414–421.

Burdick W, Friedman S, Diserens D. 2012. Faculty development projects for international health professions educators: Vehicles for institutional change? Med Teach 34: 38–44.

Burdick WP, Morahan PS, Norcini JJ. 2006. Slowing the brain drain: FAIMER education programs. Med Teach 28:631–634.

Coles CR, Tomlinson JM. 1994. Teaching student-centered educational approaches to general practice teachers. Med Educ 28:234–238.

Cousins JB, Whitmore E. 1998. Framing participatory evaluation. New Dir Eval 80:5–23.

Daniels H, Edwards A, Engestrom Y, Gallagher T, Ludvigsen SR, editors. 2010. Activity theory in practice: Promoting learning across boundaries and agencies. London: Routledge.

Davis B, Sumara D, Luce-Kapler R. 2008. Engaging minds: Changing teaching in complex times. New York: Routlege.

Engestrom DA. 2008. From teams to knots. Cambridge: Cambridge University Press.

Engestrom DA, Miettinen R, Punamaki R-L, editors. 1999. Perspectives on activity theory. Cambridge: Cambridge University Press.

Fetterman DM, Deitz J, Gesundheit N. 2010. Empowerment evaluation: A collaborative approach to evaluating and transforming a medical school curriculum. Acad Med 85:813–820.

Fraser S, Greenhalgh T. 2001. Coping with complexity: Educating for capability. BMJ 323:799–803.

Gergen KJ. 2009. Relational being: Beyond self and community. Oxford: Oxford University Press.

Gusic ME, Milner RJ, Tisdell EJ, Taylor EW, Quillen DA, Thorndyke LE. 2010. The essential value of projects in Faculty development. Acad Med 85:1484–1491.

Hall GE, Horde SM. 1987. Change in schools: Facilitating the process. Albany, NY: State University of New York Press.

Heifetz RA. 1994. Leadership without easy answers. Cambridge: Belknap Press.

Heifetz RA, Grashow, Linsky M. 2009. The practice of adaptive leadership: Tools and tactics for changing your organization in the world. Boston: Harvard Business Press.

Hewson MG. 2000. A theory-based faculty development program for clinician-educators. Acad Med 75:498–501.

Hirschhorn L, May L. 2000. The campaign approach to change: Targeting the university's scarcest resources. Change 32:30–37.

Hitchcock MA, Stritter FT, Bland CJ. 1993. Faculty development in the health professions: Conclusions and recommendations. Med Teach 14:295–309.

Marsh DR, Schroeder DG. 2002. The positive deviance approach to improve health outcomes: Experience and evidence from the field. Food Nutr Bull 23:3–6.

McGaghie WC. 2009. Scholarship, publication, and career advancement in health professions education: AMEE Guide No. 43. Med Teach 31:574–590.

Mennin S, Krackov SK. 1998. Reflections on relevance, resistance, and reform in medical education. Acad Med 73: S60–S64.

Mouradian WE, Huebner CE. 2007. Future directions in leadership training of MCH professionals: Cross-cutting MCH leadership competencies. Matern Child Health J 11:211–218.

Norcini J, Burdick W, Morahan P. 2005. The FAIMER institute: Creating international networks of medical educators. Med Teach 27:214–218.

Olson E, Eoyang G. 2001. Facilitating organization change: Lessons from complexity science. San Francisco, CA: Jossey-Bass.

O'Sullivan PS, Irby DM. 2011. Reframing research on faculty development. Acad Med 86:421–428.

Otero Ribeiro EC, Mennin S. 2010. Continuing medical education: Guide supplement 35.2 – Viewpoint. Med Teach 32:172–173.

Patton MQ. 2002. Qualitative research and evaluation methods. 3rd ed. Thousand Oaks, CA: Sage. pp 209–258.

Sheets KJ, Henry RC. 1984. Assessing the impact of faculty development programs in medical education. J Med Educ 59:746–748.

Sheets KJ, Henry RC. 1988. Evaluation of a faculty development program for family physicians. Med Teach 10:75–83.

Snowden D. 2002. Complex acts of knowing: Paradox and descriptive self-awareness. J Knowl Manag 6:100–111.

Steinert Y, Mann K, Centeno A, Dolmans DHJM, Spencer J, Gelula M, Prideaux D. 2006. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. Med Teach 28:497–526.

Steinert Y, Naismith L, Mann K. 2012. Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. Med Teach 34:483–503.

Stritter FT. 1983. Faculty evaluation and development. In: McGuire CH, Foley RP, Gorr A, Richards RW, editors. Handbook of health professions education. CA: Jossey Bass. pp 386–404.

Sullivan WM, Rosin MW. 2008. A new agenda for higher education: Shaping a life of the mind for practice. San Francisco, CA: Jossey-Bass.

Wenger E, McDermott R, Snyder WM. 2002. A guide to managing knowledge: Cultivating communities of practice. Boston, MA: Harvard Business School Press.

Wilkerson L, Irby DM. 1998. Strategies for improving teaching practices: A comprehensive approach to faculty development. Acad Med 73:387–396.