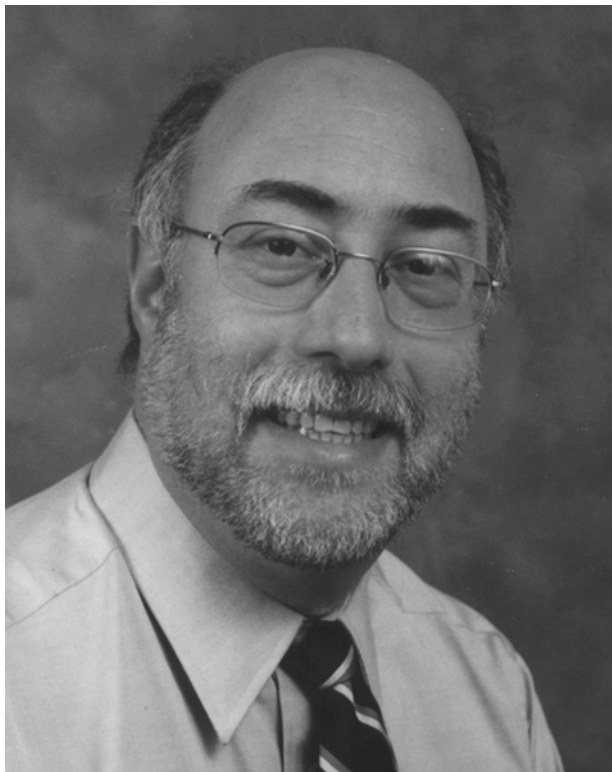


A Teaching Scholar Program in Chiropractic Education

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Introduction

Over the course of the past 20 years, there has been growing acknowledgement that there is a significant need to provide faculty development which enhances the teaching skills and scholarship of the healthcare education community. This is certainly equally true within the chiropractic profession specifically but far less research

exists which is addressed to the needs of the chiropractic academic community. As noted by Rosenbaum et al¹, a number of challenges exist in providing opportunities for faculty to obtain training in teaching skills. These include the need for there to be someone with faculty development expertise to lead such a program, lack of locally-based advanced educational training programs, interest solely coming from highly motivated educators and lack of departmental members who can assist or take on such training opportunities. They conclude that institutions need to seek ways to expand resources available for training. They recommend increasing the number of faculty with advanced expertise in education, and to use peers to offer training once they have gained that expertise (as noted below). At several chiropractic colleges, there are also challenges arising from the nature of their collective bargaining agreements, each of which has specifications for faculty performance that may at times be at odds with the need to implement faculty development programs.

Few programs have been reported in the healthcare literature with the specific purpose of helping faculty develop expertise in providing teaching skills to their peers. Most follow train-the-trainer models.² As part of Palmer College's R25 grant award, we are using a train-the-trainer model for implementing enhanced use of evidence-based methods in the classroom setting. We are first training a small number of interested faculty in the use of EBP; those individuals will then be placed in position to provide training to their peers.

But it is important to note that most faculty development programs still focus on developing participant skills for their own teaching. The goal of the teaching scholar program (TSP) described here is to combine teaching ef-

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fectiveness training with leadership skills to develop a cohort of teachers with increased personal skills who can transmit them to their peers. This program is designed to provide skills directed at the higher level components of health care education as opposed to general education theory and methodologies, and thus will serve as a means of providing advanced teacher training. Further, it is designed to be a selective program.

This paper first reviews other teaching scholar programs before describing a proposed program for faculty educational training.

A Review of Teaching Scholar Programs

A special issue of *Academic Medicine* was devoted to reporting on teaching scholar programs across the United States. As already noted, Rosenbaum and colleagues³ were instrumental in developing and implementing a TSP in the Carver College of Medicine at University of Iowa. Goals for that program included (1) promoting development of a cadre of faculty with the skills to implement faculty development in their departments, (2) increase departmental involvement in faculty development, (3) increase resources for dissemination of college-wide faculty development efforts, and (4) acknowledge the effort that faculty put into developing their skills and in helping train their colleagues. Interested faculty must apply for the program and must meet specific acceptance criteria. Incentives include a \$2000 stipend to attend a medical education conference, support from program staff, receipt of a certificate at program end, and formal recognition as a teaching scholar in college publications. The program curriculum consists of (1) monthly half-day training sessions that focus on specific skills in either instructional design, teaching skills or professional development; (2) teaching self-improvement activities involving reflection; (3) videotaped performance evaluations in classroom; and (4) completion of a faculty development project.

Muller and Irby⁴ developed a TSP for the University of California School of Medicine in San Francisco. Their overall goal was to produce educational leaders for UCSF, and therefore they offered accepted faculty learning experiences in 7 areas: learning theory, teaching methods, curriculum development and evaluation, assessment of learning, leadership and organizational change, career development, and educational research. This program requires a weekly 3-hour seminar, with reading assignments

and writing exercises. Most sessions have a short initial presentation, followed by a writing experience on the topic. This is then followed by a seminar discussion, typically student-led. Faculty participants are also required to complete a scholarly project. The model offered for learning objectives for this program is one adaptable for use within a chiropractic college setting. Table 1 offers broad program objectives.

The program at McGill University was developed by Steinert and McLeod.⁵ This program is a year in length and focuses on 5 major educational themes: curriculum design and innovation, effective teaching methods and evaluation strategies, educational program evaluation, research in medical and health sciences education, and educational leadership. Its primary goal is to help faculty learn more about educational principles and methods, pursue scholarship in medical education, and prepare for educational leadership roles. Scholars admitted into the program are expected to devote 1 day per week to the activities required to complete the year-long program. The program includes 2 university-based courses from the faculty of education, a monthly seminar, an educational project and participation in faculty-wide development activities. In addition, the organizers have instituted a monthly educational journal club. Assessment has indicated this program is meeting its goals quite well.

The program at the University of Washington⁶ was initiated by the same David Irby mentioned above with regarding UCSF. The mission for this program is defined as “to promote academic excellence through the development of a vibrant community of leaders in education who can innovate, enliven and enrich the environment at the University of Washington.” Scholars attend sessions one-half day per week for 10 months, with many of the sessions led by the scholars themselves. They work in collaboration with program leaders to decide upon course readings, but are responsible for teaching material to each other. Scholars are exposed to topics on educational research, leadership, team building, verbal communication, learning theory, curriculum development, creating and evaluating tests, etc. Each scholar is required to complete a capstone project prior to completing the program.

The mission of the Medical Education Scholars Program at the University of Michigan is to develop educational leadership, improve teaching skills, and promote educational scholarship among the medical school fac-

Table 1 *Chiropractic College Teaching Scholars Program General Learning Objectives*

Learning Objectives: At the end of the year-long program, scholars will be able to
<p>1. Analyze how <i>learning theory</i> relates to the design of curriculum and educational activities.</p> <ul style="list-style-type: none"> • Understand and assess different learning theories. • Apply theories of learning to instructional practices. • Assess the research evidence related to different learning theories. • Analyze the successful use of technology to enhance learning. <p>2. Demonstrate the ability to use various <i>teaching methods</i> appropriately.</p> <ul style="list-style-type: none"> • Analyze the relationship between learning styles and teaching styles. • Determine elements of instructional design. • Master various teaching strategies. <ul style="list-style-type: none"> • Large group • Small group • Simulations • One-on-one • Develop expertise in giving feedback. <p>3. Determine the steps in <i>curriculum development and evaluation</i>.</p> <ul style="list-style-type: none"> • Identify different curricular models. • Describe the process of curriculum development. • Design a program evaluation. • Determine how to identify the costs of a curriculum. • Analyze approaches for obtaining informed consent for curricular research. • Examine the relationship between accreditation and curriculum. <p>4. Master various <i>assessments of learning</i>.</p> <ul style="list-style-type: none"> • Interpret reliability and validity of measures of tests and assessment instruments. • Analyze the strengths and weaknesses of various assessment strategies. • Design assessments of <ul style="list-style-type: none"> • Knowledge. • Attitudes. • Skillful performance. • Design a survey. • Select appropriate course and instructor evaluations. <p>5. Analyze <i>leadership in organizations</i> and develop <i>leadership skills</i>.</p> <ul style="list-style-type: none"> • Discuss leadership styles, behaviors and functions. • Identify leadership opportunities in medical education locally and nationally. • Assess educational leadership opportunities within and outside the university. • Discuss organizational change. <p>6. Reflect on and plan their <i>academic careers</i>.</p> <ul style="list-style-type: none"> • Establish career goals and benchmarks. • Describe the academic promotion process. • Revise CV and develop an Educator's Portfolio. • Develop mentoring skills. <p>7. Develop skills in <i>educational research</i> sufficient to propose, conduct, analyze, and present a study.</p> <ul style="list-style-type: none"> • Write a proposal with a well-defined research question. • Select appropriate research designs and measures for given research questions. • Devise an analytical plan that addresses power, analytical challenges, missing data, and procedures. • Identify characteristics of accepted and rejected studies. • Write an abstract for medical education research. • Critique an educational research article.

ulty.⁷ Their program follows the academic calendar and meets weekly from September through June for 3 hours per meeting. The curriculum is divided into 5 broad domains: teaching and learning topics; cognition topics; educational assessment topics; academic leadership sessions; research methods and methodology. Scholars in the program are also mentored by senior faculty, and are required to complete a scholar's project. Faculty scholars lead workshops and then undergo what has been termed an 'autopsy' examining their performance as workshop leader. A journal club is incorporated into this program as well.

The program at the University of Arkansas⁸ evolved over a period of years but has at its center a series of monthly 3-hour workshops related to teaching and educational research, combined with lectures from nationally well-known health science educators. Scholars are required to complete a project, similar to the other programs noted above.

Table 2 summarizes the key aspects of each program described above.

Discussion

There are several commonalities among all the programs described above. First, all have at their base the need to train faculty in educational methodologies and procedures, all require an application process, all require a research or educational project, and most require at least a modicum of scholar involvement in the development and teaching of seminars and workshops.

Educational topics that are common to most of the program include teaching skills, curriculum development and evaluation, educational research, academic leadership, and learning theory. These topics seem logical and should form the basis for a Teaching Scholar Program for use in a chiropractic college. A discussion of curriculum can be found below.

Challenges

One of the challenges that several chiropractic colleges face is their collective bargaining agreement (CBA). Decisions regarding who may be chosen for the program, release time necessary to participate in the program, and any funding decisions that much be made must be placed into the legal context required by the CBA. Further, the mode of course delivery is a challenge; would it be better to plan live in-class sessions, to work thought an educational

framework such as BlackBoard or WebCT given the time commitments that academic faculty and clinicians face, or find some other delivery system? Should the program be "excusive" in that it will admit a limited number of people each year, perhaps no more than a single person per department?

Proposed Curriculum

The following topics would form the basis for such a program:

- Learning theory in health-care education
 1. Principles of teaching and learning
 - a. Scholars will formulate guiding principles on which students can be encouraged to build their learning skills
 2. Teaching methods
 - a. Scholars will be able to design instruction from which students will be able to learn concepts, principles and problem-solving
 - b. Scholars will be able to design instruction from which students will be able to learn skills or procedures
 - c. Scholars will be able to design instruction from which students will be able to learn attitudes
 - d. Scholars will be able to evaluate the potential of a range of teaching methods to facilitate learning of specific types of outcomes
- Curriculum development in health-care education
 1. Trends in curriculum development
 - a. Scholars will be able to demonstrate an understanding of the 6 trends in curriculum development
 - b. Scholars will be able to reflect on the extent to which these trends are applicable to a course that the scholar teachers
 2. Principles of curriculum development
 - a. Scholars will demonstrate an understanding of 8 concepts underlying curriculum development
 - b. Scholars will demonstrate an understanding of 8 ideas derived from the 8 concepts
 - c. Scholars will reflect on the extent to which the 8 ideas are applicable to a course which they teach
 - d. Scholars will analyze a course for which they are responsible in terms of the Hardin's SPICES model of educational strategies

Table 2 *Key program components*

Program	Application Process	Curriculum	Project Required
<i>University of Iowa</i>	(1) Ability and/or potential for leadership in educational faculty development efforts; (2) Motivation and interested in issues related to teaching; (3) Ability to communicate effectively with faculty in the department; (4) Ability to work effectively with others and to responsive to feedback; (5) Willingness to make the necessary time commitments	Half-day training sessions focused on instructional design, teaching skills and professional development; teaching self-improvement; reflection	Yes, focusing on enhancement of teaching and related skills relevant to departmental needs
<i>UCSF</i>	(1) Application form; (2) CV; (3) Goal statement; (4) Letter of support from department chair	7 areas: learning theory, teaching methods, curriculum development and evaluation, assessment of learning, leadership and organizational change, career development, and educational research.	Yes, to reflect Boyer's expanded definition of scholarship: discovery, integration, application, teaching
<i>McGill University</i>	(1) Letter outlining anticipated goals for the program; (2) description of educational project; (3) explanation of how their involvement will benefit their department; (4) two letters of recommendation, including one from the chair.	5 major themes: curriculum design and innovation, effective teaching methods and evaluation strategies, educational program evaluation, research in medical/health sciences education, and educational leadership. Two formal courses, monthly seminar, educational project.	Yes, an educational project or evaluation of a curricular initiative.
<i>University of Washington</i>	(1) CV; (2) Written response to questions about current and past scholarship, educational philosophy and personal and professional goals; (3) proposal for educational project; (4) letter of support from the chair.	Core topics include introduction to learning theory, history of health professions education, educational research basics, curriculum development, creating and evaluating tests, instructional methods, professionalism.	Capstone project may include designing, implementing and evaluating an educational innovation or a workshop or curriculum.
<i>University of Michigan</i>	(1) CV; (2) written description of their educational responsibilities in medical school, goals and expectations and their for the program; (3) description of an educational project.	Meets weekly, and has 5 core areas: teaching and learning topics, cognition topics, educational assessment topics, academic leadership topics and research methods topics.	Projects can focus on curriculum development and evaluation, use of educational technology, etc.
<i>University of Arkansas</i>	Not defined	Monthly 3-hour workshops related to teaching and educational research.	Not defined.

3. Needs analysis for curriculum development
 - a. Scholars should be able to review quantitative and qualitative strategies for needs analysis for curriculum development
 - b. Scholars should be able to design appropriate strategies for diagnosis of curriculum development needs
- Teaching methodology in health-care education
 1. Principles of assessment
 - a. Scholars will understand the difference between summative and formative assessment
 - b. Scholars will understand the difference between criterion and norm-referenced assessments
 - c. Scholars will be able to construct clear instructional objectives
 - d. Scholars will be able to differentiate between facts, procedures, concepts and principles in the context of assessing student learning
 - e. Scholars will be able to describe the characteristics of content, predictive, concurrent and construct validity
 2. Problem-based learning
 - a. Scholars should be able to select an appropriate approach for use in their own situation
 - b. Scholars should develop PBL sessions appropriate for use in their own situation
 - c. Scholars should embark on facilitating a PBL group
 - d. Scholars should be able to define PBL
 - e. Scholars should be able to identify criteria for PBL and identify the advantages and disadvantages associated with PBL
 - f. Scholars should reflect on their performance and that of their students
 3. Self-assessment in the teaching process
 - a. Scholars will be able to reflect on his or her teaching and understand the key components of the self-assessment process
 - b. Scholars will construct a self-assessment tool which has practical benefits
 - c. Scholars will be able to describe the advantages of self-assessment for both the student and the teacher
 - d. Scholars will understand the value of feedback and its role in quality self-assessment
- Educational Research in health-care education
 1. Research awareness
 - a. Scholars will be able to describe the scientific method
 - b. Scholars will be able to identify the key questions to ask in problem selection
 - c. Scholars will be able to describe the advantages of a research plan
 - d. Scholars will be able to write directional and null hypotheses that relate to a research problem
 - e. Scholars will be able to state and explain the reasons for conducting a literature search before commencing a research project
 - f. Scholars will be able to describe the differences between primary and secondary sources and give examples of each
 2. Approaches to research
 - a. Scholars will be able to explain differences between qualitative and quantitative research
 - b. Scholars will be able to describe circumstances in which experimental, historical, descriptive, correlational, causal-comparative and action research designs are used
 - c. Scholars will be able to clearly distinguish between the procedures/ designs used in each method
 - d. Scholars will be able to identify the advantages and disadvantages of each approach
 3. Designing and administering questionnaires
 - a. Scholars will be able to carry out the key stages in questionnaire design
 - b. Scholars will be able to construct questionnaire items
 - c. Scholars will be able to write both open and closed questions
 - d. Scholars will be able to distinguish between postal and interview type questions
 - e. Scholars will be able to design an effective questionnaire on a given topic
 - f. Scholars will be able to identify when the questionnaire method is appropriate
- Academic leadership in health-care education
 1. Leadership
 - a. Scholars will be able to describe leadership roles in various areas

- b. Scholars will describe negotiation skills and conflict resolution strategies
- c. Scholars will describe the roles of consultation, seminars, peer support, and mentoring in the development of leadership skills
- d. Scholars will be able to discuss organizational dynamics and gender

Assessment

The literature is replete with assessment strategies for teaching scholar programs, but chief among them is review and evaluation of curriculum vitae over time. Analysis may include number of publications, participation in college committee or leadership positions, decisions to gain additional education through a master's or doctoral level program, presentations at conferences, etc. In addition, focus groups and surveys may be used to track participant attitudes and opinions regarding the effectiveness of the program. One can track scholar perceptions of the program's strengths and limitations (a process evaluation) as well as whether or not scholars accomplished what they set out to do (an outcome evaluation). Faculty interest can be another measure of success. Essentially, it is possible to see if participation in the program leads to increased teaching effectiveness, as measured through course evaluations, and increased scholarly productivity, as measured by CV analysis.

Implementation

I offer this program for discussion among our educators and administrators. There are few formal teaching effectiveness programs within chiropractic education, and certainly the typical faculty in-service can only offer small

amounts of training at a given time. Without ongoing programs in place, our faculty are hampered by their time commitments and work loads from engaging in further study. This program can be incentivized as well, but should be seen as something to strive for.

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