Educating Health Professionals in Low-Resource Countries

A Global Approach

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THE
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This book is designed to engage health science teachers and students in the process of teaching and learning, specifically about the philosophy, methods, and strategies used in the education of health care providers. It was written for the preparation of teachers in pre-service and in-service educational settings, especially those in low-resource countries and environments where material, technological, and electronic resources are often limited. Persons who will find this book most helpful are teachers, experienced and new, who are providing or will provide health science education in challenging settings. The evidence base for this book derives from ten years of teaching learning workshops with health sciences faculty from seven Ethiopian universities, as part of the Ethiopia Public Heath Training Initiative sponsored by The Carter Center in Atlanta, Georgia, USA, and the Ministries of Health and Education of Ethiopia.

About The Carter Center

"Waging Peace. Fighting Disease. Building Hope."

A not-for-profit, nongovernmental organization, The Carter Center has helped to improve life for people in more than 70 countries by resolving conflicts; advancing democracy, human rights, and economic opportunity; preventing diseases; improving mental health care; and teaching farmers in developing nations to increase crop production. The Carter Center was founded in 1982 by former U.S. President Jimmy Carter and his wife, Rosalynn, in partnership with Emory University, to advance peace and health worldwide. Please visit www.cartercenter.org to learn more about The Carter Center.

About the Ethiopia Public Health Training Initiative

Because the biggest hurdle to better health in Ethiopia is the lack of access to health personnel, the mission of the Ethiopia Public Health Training Initiative (EPHTI) is to build a team of qualified health care workers across the country, especially in underserved rural populations. Launched in 1997, the EPHTI aims to improve the quality of pre-service training to health science professionals within Ethiopia through a partnership between the Ethiopian government, The Carter Center, the Ethiopia Ministry of Education, the Ethiopia Ministry of Health, and seven Ethiopian higher education universities. Improved training results in improved health care delivery for the entire population. The underlying assumption of the program is that Ethiopians know the best way to deliver public health care to Ethiopians.

To the faculty participants of the 13 teaching learning workshops held by the Ethiopia Public Health Training Initiative of The Carter Center from Addis Ababa University, Defense College of Health Sciences, University of Gondar, Hawassa University, Haramaya University, Jimma University, and Mekelle University. Your dedication to improving the education of health professionals in your country, and thus Ethiopia's future, has been an inspiration.

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Foreword

As is often true in health science teaching institutions in many countries, especially developing ones, the Ethiopian setting suffers from a lack of instructors with appropriate pedagogical skills. The selection of teachers for institutions of higher education has primarily depended on applications submitted by candidates in response to an advertisement. Incentives such as staying in relatively urban settings where universities are located and the potential for getting further education have been the major attraction. One key criterion used has been grades earned upon graduation, which may not guarantee that one will be a good prospective teacher. As a result, an applicant for a teaching position, and therefore a recruit, may not be appropriate for the teaching profession.

In addition, the health field has been subject to the tradition in which a senior teacher serves as the only role model for junior teachers. Unfortunately, the prevailing approach was not student centered; instead, it has been teacher centered, with one-way communication. Furthermore, this long-standing tradition has been handed down from the older universities to the newly established ones through young graduates from the former who have been emulating their own professors. Even the little experience gained through teaching in the more geographically remote universities is not available for long, because most young instructors leave to obtain further education, and usually they do not return. The resulting high turnover of health science instructors in universities aggravates the situation.

In the 1990s, the Ethiopian government and The Carter Center considered ways of collaboration. Capacity building for developing human resources in the field of health education was identified as a priority. Ethiopia, just coming out of a long civil war, was striving to rehabilitate its health services. For this to happen, the shortage of human resources had to be addressed. The government established three new universities in addition to the existing three. The sudden doubling of universities meant an escalated need for instructors. In the face of this urgency there was no time for a careful, rigorous selection of new

instructors, and whoever applied was accepted to teach. Although this did not necessarily mean all were poor instructors, it left much to be desired in terms of quality education. Such a lack of comprehensive minimum skill requirements for new health science instructors was one of the major needs that the new joint venture between the Ethiopian government and The Carter Center was meant to address. It was agreed that university instructors should receive training in teaching and clinical supervision skills. The shortage of adequate and relevant reference materials also required attention; hence, individual teachers would prepare their own materials, which meant there was a lot of variation from university to university. Moreover, the teaching learning environment needed enhancement through the provision of basic health science classroom equipment and teaching aids.

This scenario led to the creation of a partnership between the Ethiopian government and The Carter Center. Major financial support came from the U.S. Agency for International Development in 2000, with additional funding from others, including the David and Lucile Packard Foundation, which contributed to specific activities. The key strategy was to create the Ethiopia Public Health Training Initiative (EPHTI) to serve as the secretariat for a network of the five (later, seven) existing government universities that were to participate in the endeavor. The program used technical consultants from several universities, with Emory University as a key contributor, providing the director of the program in 2002 and leading the teaching workshops in the summer. The EPHTI network of universities was responsible for the joint planning of activities, a project budget, and assignment of specific tasks to member institutions. Instructors were trained in writing skills. Standardized teaching materials were developed locally, and thousands of copies were printed and distributed for use by all teaching institutions.

Emory University professors came to Ethiopia for 2-week annual workshops during which they gave pedagogical and clinical supervision skills training for instructors. The instructors who participated in these workshops would then return to their respective universities and give 5-day cascade teaching methodology courses on their campuses. An interesting extension of this process occurred when nonuniversity hospitals were recruited to provide preservice teaching, which meant service providers had to be trained in pedagogical skills by the university faculty. Overall, close to 4,000 teachers in universities and hospitals received the training provided by these annual 2-week workshops.

In terms of outcome and impact, we observed a rapid transformation of the Ethiopian health sciences teaching landscape by instilling the right skills and attitude in both the university faculty and nonteaching hospital settings. Feedback from faculty, students, and peers showed that instructors who received pedagogical training were much more effective than nontrained ones. This was also true for the same teacher before and after he or she received the Carter Center–assisted training. Teachers assigned by default felt a good fit with, and developed a lasting affection for, the profession. Some who were co-opted from

service-providing facilities ended up being long-term preservice educators! Some instructors wished their past university professors who lacked such skills be offered the training.

I believe such capacity-building partnerships can serve as a model in other low-resource settings. I would like to recognize the great dedication of the Emory professors who have put the teaching learning experiences in Ethiopia into a resource that will serve as a guide for teaching skills training in other low-resource environments. The role of the EPHTI network, the Addis Ababa office staff, and the EPHTI council members has also been critical in project implementation and ensuring sustainability.

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Health Training Initiative

Preface

My wife Rosalynn and I have been traveling to Ethiopia and to other developing nations for years, beginning when I was President. After my presidency, I returned to Ethiopia when the Derg regime was still in power and when Mengistu, the communist dictator, was oppressing the country. I knew Prime Minister Meles Zenawi quite well, long before he was able to get to Addis Ababa and overthrow the oppressive Derg regime. In 1989, he was successful and inherited 75 to 80 million constituents in one of the poorest nations on earth, with the highest incidence of blindness in the world. Since that time great progress has been made in many areas, especially in the health sector. The Derg regime was overthrown just 2 years before then-acting Prime Minister Meles Zenawi and I began talking about the Ethiopia Public Health Training Initiative (EPHTI) program. An initial idea was to create a school of public health, because at that time none existed in Ethiopia. Later, we thought it might be beneficial to let the school of public health in Ethiopia cooperate with a major university in the United States, and it was no accident that we choose Emory University, because I have been a professor there since I was President. I have enjoyed teaching at Emory for 28 years. Since 1997, we've continued to work on the EPHTI program, but in the early stages of Ethiopia's new government it was difficult to get the interorganizational framework established. One of the greatest triumphs for EPHTI has been cooperation between the Ministry of Health and Ministry of Education. The Carter Center has programs in 35 different African nations, and we know how rare it is to get professionals in the fields of health and education to cooperate as thoroughly and as enthusiastically as they have in Ethiopia.

In 1997, Ethiopia and The Carter Center formed the EPHTI team and invited members to come to The Carter Center in Atlanta, Georgia. During that meeting we changed our concept from a single school of public health to creating 500 community health centers around Ethiopia, because Prime Minister Zenawi felt that the services to be provided should be dispersed throughout the country, not just concentrated in the capital city. We established a mechanism that trains instructors and staff who then teach health students. Between 1997 and 2000, we depended on pedagogical and skill-based workshops to train these workers to staff the new health centers around Ethiopia. In the year 2000, we received funds from U.S.

Agency for International Development (USAID) and the David and Lucile Packard Foundation to embark on the EPHTI as a major project. Along with providing training in teaching learning and service learning, the EPHTI assisted the universities of Ethiopia in creating locally developed curricula for their health classrooms, as well as providing some of the materials needed to train health professionals (e.g., computers, anatomical models, reference books, and other teaching aids).

We were somewhat constrained by instructions from Prime Minister Zenawi and the Ministers to concentrate on diseases afflicting the Ethiopian people. At first there were 30 diseases identified to tackle, and The Carter Center agreed to work with Ethiopia to develop a complete training module for each of those diseases. That was in the early stages of this project. Since then we've completed those 30 modules and have expanded to almost 230 types of health learning materials created based on the Ethiopian context, so 230 analyses of diseases or health topics that afflict Ethiopia have been created and now can be used to teach Ethiopians how to provide health care within their own country. These curricula are posted on The Carter Center's Web site and are available at no cost to anyone who seeks them. In addition, through our own funds, and through contributions from other sources, more than $1 million worth of textbooks have been provided for the different public health schools now in Ethiopia. We've held 565 workshops, some in the capital, Addis Ababa, but mostly scattered all over the nation. These workshops have been attended by many instructors wishing to increase their knowledge and teaching abilities. In terms of faculty, more than 2,500 health instructors have been trained in these workshops. These instructors' skills have benefitted more than 26,000 health science students from the seven regional public health universities in Ethiopia.

This is a notable achievement in itself, but what has happened is that the training curricula in these seven universities now are standardized through the EPHTI mechanisms. The materials are compatible with the resources available in Ethiopia, so professors and students can now move from one university to another and not have their education or work interrupted. We later decided to comply with the request from the Ethiopian government to help train 30,000 health extension workers with the materials and workshops developed through the EPHTI.

These are some of the results and progress made possible by the fact that health workers have been trained; university systems have been set up for education; and a close, intimate, and permanent relationship has been developed among the government of Ethiopia, the health ministry, the education ministry, and donors. What The Carter Center hopes to accomplish with the lessons learned from the EPHTI model of training health professionals in low-resource environments is to make it as easy as possible for other areas with limited resources to adopt similar programs and methods in order to train the health professionals needed to service communities in need.

President Jimmy Carter
39th President of the United States of America
Cofounder, The Carter Center, Atlanta, Georgia

Acknowledgments

It has been an honor and a privilege to participate in the writing of this book. The Ethiopia Public Health Training Initiative (EPHTI) of The Carter Center provided the setting, vehicle, and spark that allowed the teaching learning strategies presented herein to grow and flourish. The EPHTI would not be where it is today without the initial architecture and development by Dr. Dennis Carlson. Dr. Carlson was with EPHTI in the beginning, and he continues to be a guiding light in its mission today. Other invaluable staff of the EPHTI include Mr. Aklilu Mulugetta, who was the first staff member to come onboard with the initiative in its early years and was instrumental in keeping the program running, as well as managing the development of the initiative's 228 health learning materials; Ms. Meseret Tsegaw, another founding staff member of the EPHTI, who played a key role in maintaining business and administrative functions in the Addis Ababa field office; Mr. Assefa Bulcha, who coordinated the drought response and accelerated health officer training programs and has been a stalwart administrator; and Dr. Hailu Yeneneh, the dedicated resident technical advisor of the EPHTI, who possesses a depth of knowledge, passion, and a steady voice that has been a key influence in the success of the program. His commitment to his country and the health and future of his fellow countrymen and -women is an inspiration to us all. Addis Ababa–based staff who were instrumental in ensuring the 13 national-level teaching learning workshops over the last decade were executed smoothly, as well as keeping the EPHTI office humming like a well-oiled machine, include Mr. Fekadu Tsige, Ms. Mahlet Tilahun, and Ms. Yemsrach Mulugetta. Every one of our Ethiopian colleagues has been a pleasure to work with, and we are humbled to count them as friends.

Joyce P. Murray
Anna Frances Z. Wenger
Elizabeth A. Downes
Shelly B. Terrazas

Introduction

This book is designed to engage teachers and students of the health sciences in the process of teaching and learning about the philosophy, methods, and strategies for the education of health care providers. It was written to be used in the preparation of teachers in preservice and in-service educational settings in low-resource countries and environments where material, technological, and electronic resources are often limited. Those who will find the book most helpful are teachers, experienced and new, who face the challenge of providing health science education in challenging settings. After more than a decade field-testing the methods and strategies described in this book in Ethiopia with a program at The Carter Center called the Public Health Training Initiative (PHTI), the model for teaching health professionals described herein is now applicable to most low-resource educational situations. The use of these teaching learning strategies within the PHTI program exemplify them as a successful mechanism that can be used in almost any low-resource setting. Featured in this book are active teaching learning strategies in which teachers and students work together to create learning situations that encourage critical thinking and creative problem solving.

Faculty and teachers in low-resource communities and countries face the issues of educating and preparing students with limited access to information for teaching and learning. *Low-resource environments* are those that have inadequate quantities and qualities of technological, electronic, and material resources, while at the same time the country (or county, school system, region, etc.) may have remarkable *human* resources. For an environment to be considered low resource, funding for resources for educational programs must be often lacking or limited.

BOOK STRUCTURE

The following 10 chapters, beginning with a description of teaching and learning, focus on the essential knowledge and skills needed by teachers who prepare health professionals. The first two chapters present the foundations for teaching learning, such as the definition of teaching and the theories and

research supporting 'active teaching learning strategies.' Chapter three contains information on how the brain works, ways of knowing and the theories behind learning strategies so a teacher can better understand his or her students. Chapters four and seven discuss instructional settings, while also addressing specific strategies for teaching such as evidence based methods, using teaching tools in the classroom, case studies, and service learning in conjunction with chapters five, six and eight. Finally, chapters nine and ten of the book describe how an instructor would be a leader within the classroom, how to develop learning episodes, and how these tools worked in a thirteen-year project conducted in Ethiopia.

Topics presented include active teaching learning strategies, evidence-based teaching, learning theories, understanding the learner's learning style, incorporating culture, the dynamics of faculty–student relationships, and other methods and tools for preparing the health science student. Specific teaching strategies, such as problem-based learning, live patient scenarios, and simulation, are discussed. Emphasis within the chapters is on sources of information; the knowledge, skills, and attitudes needed for clinical practice; and the complex and important task of evaluation in both classroom and clinical settings. Another important aspect of being an effective teacher addressed is how to become a leader and role model for students.

At the end of many chapters are sections called *Learning Activities*, which are related to their respective sections in the chapter and titled accordingly. We have field-tested these learning activities for 10 years in Ethiopia as we conducted 2-week pedagogical skills workshops for health science instructors at the university level. These instructors, after participating in the pedagogical workshops that presented these learning activities, then conducted cascade workshops at their home institutions in which they replicated the learning activities. Most learning activities include a title, an overview, directions for student and teacher, and content sources that the teacher can use to conduct a teaching learning session and that the students can use when preparing for the session. The learning activities contain sources of information to adapt, plan, and implement the given learning activity. Also given within the learning activities are brief explanations referring the teacher to the strategies that guided the activity's development and relating to the specific topic under discussion.

Each learning activity is presented separately so that it can be copied directly from this book and used, or adapted, by teachers for their own educational settings. The learning activities can also serve as templates and guides for making similar learning activities that might fit better within the teaching learning context of the reader's educational setting.

HOW TO USE THIS BOOK

The organizational format of this book is meant to be flexible, and it can be used in multiple ways. Instructors with little to no background in education may use it as a reference guide to improve their knowledge and skills in teaching

Included Topics for Teachers

- Writing test questions
- Preparing lectures
- Utilization of problem-based learning
- Developing workshops on pedagogical skills
- Developing workshops on health service skills
- Knowing yourself as a teacher
- Faculty–student relationships
- Field trips
- Small group work
- Service learning
- Sources of information
- Simulation and role play
- Teaching in a classroom setting
- Teaching in a clinical setting
- Evaluation and assessment
- Critical thinking
- Developing a teaching learning episode

and learning. Topics can be reviewed in the order they are presented or used as references according to the reader's situational need. Topics include specific teaching skills, such as writing test questions, preparing a lecture, how to use problem-based learning, and developing workshops from 3 to 14 days in length that are focused on specific teaching and learning skills. The materials herein can also be used to structure, prepare, and conduct workshops for instructors on support skills as well as preparing health science students. Although 2-week workshop formats were used in the development of the material, the structure of the learning activities may also be adapted for shorter or more focused aspects of teaching and learning.

IMPROVING TEACHING PRACTICES THROUGH ACTIVE TEACHING LEARNING STRATEGIES

Although lecture has served as the major strategy and tool in teaching for many years, today the evidence shows that it is not in fact the most effective way to approach learning. New theories regarding how the brain works, and about the processing of information and learning, are providing evidence to support the theories of interactive teaching and learning. Research has uncovered information related to structuring learning experiences that enable students to use knowledge in new settings as well as information indicating that cultural and social norms influence learning and that new technologies will continue to impact effective teaching and learning. These new methods

are called *active teaching learning strategies*, and they are discussed in chapters 4 through 7.

Another major deficit in teaching practices may be the absence of classroom resources such as culturally competent curricula, classroom teaching aids, computers, and anatomical models, for both teachers and students. Although the learning activities presented in this book are designed for low-resource environments that lack many of these items, the availability of such elements could be incorporated into a learning environment quite effectively.

Unfortunately, many faculty and instructors of health sciences receive little to no training as teachers. Often health professionals finish their educational programs and, because of situational needs, begin teaching immediately, with no formal training. The strategies in the chapters of this book were developed specifically in response to this scenario, which is seen frequently in environments with little resources for education. This book, which is meant to supplement formal educational training, was written for individuals who find themselves in a low-resource setting and must use their time and available resources as effectively as possible.

THE CRITICAL NEED FOR INCREASED HUMAN RESOURCES IN HEALTH

Dramatic global changes are occurring, yet low-resource countries still have inadequate, inappropriate, or unresponsive interventions to improve their health, education, social, and environmental situations. Health status has improved in some countries while deteriorating in others. Political changes in recent years in eastern Europe, the former Soviet Union, Africa, South America, and Asia led to expectations of a better life, including improved health care. Positive and negative changes in social development impact the lives of individuals and families in countries with low and high resources alike. Government services throughout the world vary in their abilities to meet the health care needs, including both availability and quality, of both rural and urban people.

The critical need for adequately prepared health care workers is clearly evident on a global scale. A 2006 World Health Organization report (Working together for health, The World Health Report) estimated a scarcity of health professionals that fell below the desired threshold of 80% coverage, which the WHO defines as a critical shortage. Thirty-six of the countries experiencing this health care human resource shortage are in sub-Saharan Africa. It is estimated that 2.4 million health professionals—an increase of almost 140% over current levels—would be needed to reach target levels for Africa.

Although the United States is a leader in basic health research, there are many parallels in health conditions in rural and poor urban areas in the U.S. and similar conditions in low resource countries. There are several factors in high- and low-resource countries that affect health conditions similarly. While poverty is more heavily concentrated in rural areas and poor urban areas, Bird, Hulme, Moore, and Shepherd (http://www.chronicpoverty.org/uploads/

publication_files/WP13_Bird_et_al.pdf), in their paper *Chronic Poverty and Remote Rural Areas* described remote rural areas worldwide as being most affected by poverty and poor health.

McGlaun and Cochran (2010) described barriers to health care access as a high number of uninsured persons, poverty, low educational level of women, lack of adequate transportation, and lack of health care providers. Recruitment and retention problems contribute to the lack of health care providers. Lack of education and living in remote rural areas tend to be correlated with poverty.

Health care worker shortages have created a global crisis situation. Further exploration of ways to increase the numbers of trained health professionals within diverse countries and communities, both with and without adequate resources, is desperately needed. The preparation of health workers requires organized, dedicated, and competent teachers to instruct and train the next generation of professionals for the delivery of quality care so that this urgent global health care need can be addressed.

PUTTING TEACHING LEARNING STRATEGIES TO WORK

In the 1990s, The Carter Center (a nongovernmental organization created by former U.S. President Jimmy Carter and based in Atlanta, Georgia) was asked by the Ethiopian government to help them address the lack of health professionals to meet the country's health care needs. The Carter Center's Public Health Training Initiative (PHTI) was conceived as one approach to, or model of, successful cooperation among a country's stakeholders in health (Ministry of Education; Ministry of Health; public universities; health bureaus; and funding sources, such as the U.S. Agency for International Development) to address the severe shortage of health professionals. One major component of the PHTI model is the preparation of university faculty to adequately teach their health science students. Without well-prepared teachers, increasing the numbers of quality health professionals will not be possible.

The PHTI in Ethiopia is described in detail in chapter 10 as an example of this book's strategies and methods in action. It was this program and teaching model, developed and conducted in a low-resource educational environment, that allowed us to field-test the teaching learning strategies and methods described. Although the teaching learning methods used in the PHTI project and detailed in this book were developed and used on a national scale, they can be effectively used in any environment and by any teacher faced with limited resources.

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1

What Is Teaching? What Is Learning? What Is Active Teaching Learning?

Multiple approaches to teaching and learning exist in today's learning environments. In the past, teaching consisted mostly of lectures and testing. Understanding the shift to active teaching and learning in education requires that one understand what it means to teach and learn. In fact, current research demonstrates that active teaching learning approaches are more effective than traditional approaches in the process of teaching learning. We begin this chapter by presenting a conceptual framework that shows the major concepts of an active teaching learning model (National Research Council, 2000).

A FRAMEWORK FOR ACTIVE TEACHING LEARNING

Active teaching learning refers to the interactive activities among learners, teachers, and other persons who may be involved in the process of teaching and learning in ways that promote critical thinking, creativity, and problem solving (Smith, 1990). The term *active teaching learning* is often used because teaching and learning interact and influence each other, often simultaneously. For many years, models of and approaches to teaching focused on lecture, testing, recitation, and written papers. Lecture has been, and often still is, the teaching strategy used most often in formal educational settings: Teachers talk, and students listen. In contrast to this historical method, recent research conducted by the U.S. National Research Council (2000) supports the science of how to link research findings regarding efficient learning to actual practices in classrooms.

Health science instructors come to the role of teacher with preexisting knowledge, beliefs, and experiences that influence how they teach and learn. Often, their preexisting perceptions consist of incomplete knowledge, false beliefs, and a naïve understanding of concepts related to teaching and learning (Graffam, 2007; Kaufman, 2003). These false beliefs and incomplete

conceptual understanding of what it means to be a teacher must be clarified and corrected to help students rethink the role of the teacher and understand how people learn. Emphasis should be placed on understanding and doing, as opposed to rote memorization (National Research Council, 2000).

In many settings, at all levels of education, there are inadequate numbers of prepared, effective teachers, and teaching materials and technology are scarce. Most often, preparation of health professionals as teachers and educators is minimal at best. New graduates of health professional programs become teachers with only a scant background in education and no experience in teaching and learning. Health officers, advanced practice nurses, medical laboratory technicians, and environmental technicians are nonphysician health care providers who help fill the gaps in health care workers and teachers in local, rural, and regional areas in low-resource areas (Vanderschmidt et al., 1979). Teacher preparation is not part of the educational program in many health educational settings, yet many health professional graduates become teachers or preceptors almost immediately after graduation.

The goal of this book is to provide an active teaching learning model for preparing professionals from different health disciplines to become teachers. Theories supporting active teaching learning strategies are covered in depth in chapter 2. This book is structured around a framework, the Teaching Learning Framework, that supports active teaching learning strategies in multiple settings. The Teaching Learning Framework has six major categories, along with corresponding teaching strategies and activities to support each category (see Figure 1.1):

1. Philosophical Bases for Teaching and Learning
2. Teaching and Learning Context
3. Cultural Context
4. Teaching and Learning Setting
5. Personal Motivations and Goals
6. Teaching Learning Approaches

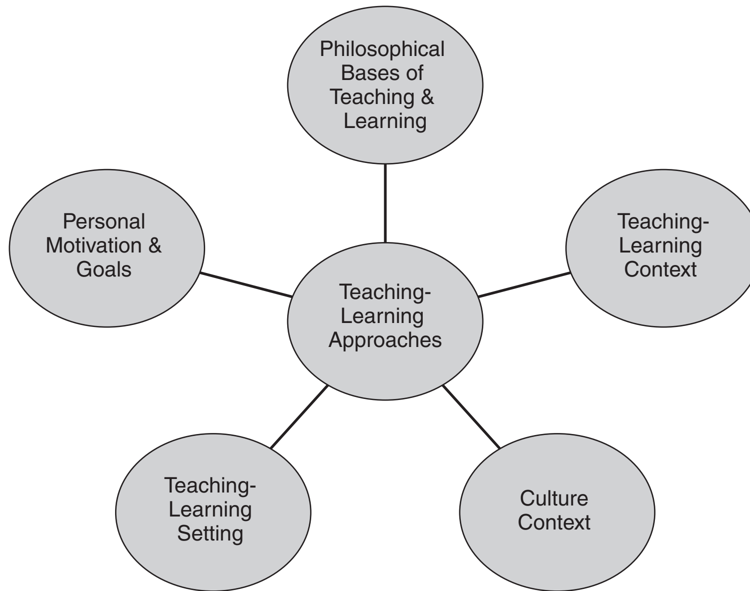
Each category, discussed in more detail later in this chapter, includes selected active teaching learning strategies. Figure 1.1 depicts how these six categories of the active teaching learning framework come together to describe what it is to teach. The figure pictorially demonstrates how teaching learning approaches, which are at the hub of the diagram, relate to all five surrounding categories. Throughout the book, we describe teaching learning approaches, usually referred to as *active teaching learning strategies*, as they apply to the topic under discussion.

Philosophical Bases for Teaching and Learning

Multiple definitions of *teaching*, *learning*, *training*, and *education* exist in the literature, and the terms are often used interchangeably, with little differentiation in the meanings of each. An understanding of the meaning of and differences between these terms is important, because teachers consider all of these concepts as they

FIGURE 1.1

A Framework for Active Teaching Learning



make decisions about approaches they will use to accomplish the identified learning outcomes. The effectiveness of one's teaching and evaluation is closely tied to the teaching strategies chosen to accomplish the outcomes and goals, which are determined before one begins to teach. Differentiation of the terms *teaching*, *learning*, *training*, and *education* helps to clarify ideas and concepts related to teaching and learning. Understanding the meanings of these terms also can help one understand how teachers create learning experiences; select testing strategies; and identify desired levels of learning as related to goals, objectives, and outcomes.

What is Teaching?

Each person's experiences and beliefs about teaching influence how he or she evolves into a teacher. *Teaching* is generally defined as telling or explaining ideas to others; however, the term can also mean that, through teaching, a person has influenced the life of another person in some meaningful way. Expanded definitions of *teaching* also include the acts of identifying a student's strengths and weaknesses and of helping a student develop his or her full potential in the subject of concern. The education of health professionals focuses on preparing a competent, safe, and caring practitioner dedicated to providing health care to diverse populations in many different settings. Educating health professionals is not about creating a simplistic, ritualistic practitioner. Because multiple definitions of teaching exist, and because teaching health professionals requires the

combination of most of these definitions, the word *teaching* as used in this book refers to the act of influencing students—through teaching strategies, teacher–student interactions, selection of content, and methods of evaluation—to become well-rounded, competent health care practitioners who are prepared to practice in a multitude of settings.

What is Skillful Teaching?

Even the best prepared, most experienced teacher will face unpredictable and unanticipated situations. The experience of being a teacher will contain failures, ambiguity, joys, and frustrations; however, the most important focus for the teacher is the students' learning experiences and personal survival. Brookfield (1990) described teaching as an unpredictable and complex endeavor that is uncertain at times. He equated it to white water rafting, with periods of apparent calm interspersed with sudden, frenetic turbulence. Skillful teaching focuses on survival and being able to reduce negative experiences that lead to burnout, exhaustion, and the feeling that one is a failure. Brookfield advised educators to "be wary of the perfect teacher syndrome" (pp. 7–8). Indicators of a good teacher include the readiness to take risks, being realistic, and developing insights into who one is as a teacher. Developing a personal vision of who you are as teacher based on your instincts, intuitions, and insights that you gain over time will serve as a guide for your teaching career.

Definitions of teaching must be broad enough to include what skillful teaching is. In other words, does the teaching lead to students' success in their roles as health care workers in the environments in which they will practice? Sharing definitions and beliefs about teaching and learning leads to an understanding of teacher and student roles in the learning process.

What is Learning?

For our purposes, *learning* is defined as the act, process, or experience of gaining knowledge or skills in multiple ways. Two major models have influenced teaching and learning. The first, called the *behaviorist model* of learning, defines learning as a change in behavior and the acquisition of new knowledge or skills through study (DeYoung, 2003; Ironside, 2001). The behaviorist model has been widely known for its emphasis on behaviors: being able to explain what one has learned; pass the test; perform the skill; and, ultimately, to pass the course or receive the certificate. B. F. Skinner, an American psychologist known for his impact on education in the 1950s and 1960s, developed the behaviorist model as a means of focusing on behavioral objectives, objective test questions, and the student's ability to implement prescribed behaviors. Long the dominant paradigm in education, the behaviorist model has recently been contrasted with the second major model: the *human science model*, which is enjoying a growing influence on educational settings and is supported by the expanding use of technology.

The human science model of learning is a relatively new way of thinking among educators and scientists. As teachers, our philosophical beliefs about learning and our educational experiences are often reflected in our choice of teaching strategies and approaches that support our definitions of teaching and learning. Thomas Kuhn (1962), in his most renowned book, *The Structure of Scientific Revolution*, argued that science is not a steady, cumulative acquisition of knowledge, but rather a series of scientific developments following the scientific rules and regulations of the day as punctuated by intellectual explosions stimulated by new or different ways of thinking, which Kuhn called *scientific revolutions*. The shift from the behaviorist model to the human science model led to a revolution in both science and education. When a model that has been effective in making sense of phenomena in a given discipline at a particular time yields to another model, this is called a *paradigm shift*. The shift from the behaviorist model to the human science model has led to significant changes in health and education.

Table 1.1 illustrates and compares the behaviorist model and the human science model. Each model contributes to teaching and learning, but with emphasis on different strengths and differences.

TABLE 1.1

BEHAVIORIST MODEL VERSUS HUMAN SCIENCE MODEL

Behaviorist model[a]	Human science model[b]
1. Break down information and skills into small pieces.	1. Importance is placed on being in control of one's learning.
2. Check students' work regularly and provide feedback.	2. Students should be able to recognize what they know and do not know.
3. Teach out of context on the basis of the belief that students learn better when they are out of the context in which the learned material will be used.	3. Students recognize how they understand information.
4. Instruction is teacher centered; teaching strategies include lectures, tutorials, drills, and other teacher-controlled activities.	4. Students recognize how they have the ability to determine someone else's meaning and how one seeks evidence that supports his or her learning.
5. Learning is passive.	5. Learning is active.
6. Students must learn the correct response.	6. Students explore responses and make choices.
7. Knowledge is defined as remembering information.	7. Knowledge is defined as acquiring new information.
8. Understanding is defined as seeing existing patterns.	8. Students search for and create new patterns.
9. Applications require transfer of training, which requires one to see common elements among problems.	9. Students direct their own learning.
10. Teachers must direct the learning process.	10. Understanding is defined as creating new patterns.

[a] Adapted from: http://msucares.com/health/health/appa1.htm.
[b] Adapted from: http://viking.coe.uh.edu/~ichen/ebook/et-it/behavior.htm.

What is Training?

The term *training* generally refers to the acquisition of knowledge and skills (or competencies), developed through the teaching of vocational or practical skills. The words *training* and *education* are often used interchangeably, as though they mean the same thing, but it is important that teachers recognize their differences and that this recognition affects their choice of teaching strategies. Teachers often choose the behavioral model to help students prepare for specific tasks and roles supported by specific information (DeYoung, 2003; Ironside, 2001; Kaufman, 2003). Teaching skills to health workers generally includes training in which skills are matched to environments where graduates will work (see chap. 7, this volume). Skills training is essential to health professionals, but it is not sufficient. Understanding the principles and rationale behind skills, along with performance of those skills, is essential to preparing a safe practitioner.

What is Education?

Education, according to the human science model, builds a knowledge and theoretical base that can be transferred and used in other areas to continue growing and learning (Huitt, 2009). In health care, education focuses on personal development as well as training in the necessary skills and procedures with which health professionals must be familiar. In educating health professionals, teachers should encourage their students to pursue continued personal development and personal growth so that they can become competent professionals who can improve the delivery of health care to diverse populations. Education is essential to innovation and improvement. Incorporation of changes, new methods, and approaches are essential to providing safe, quality health care within the current health care system.

The Teaching Learning Context in Low-Resource Countries

The teaching learning context influences the work of students and teachers. The preparation of health professionals occurs in multiple settings, including classrooms, clinical settings, communities, and homes. The context in which teaching and learning take place influences those experiences as well as students' and teachers' ability to transfer that learning to other settings. Selection of teaching strategies and methods also is influenced by the context in which one works. Certainly, low-resource countries face many challenges in providing education to health professionals. Adequately prepared teachers and the availability of teaching resources, computers, and other technology are not readily available in low-resource countries. Also, health care systems in these countries often are not adequately equipped with the supplies, medications, and aides needed for teaching and providing care.

Although teaching in low-resource countries can be challenging and difficult, preparing teachers well in such countries can improve the quality of teaching and education, if only by strengthening the teachers' knowledge and skills.

Of course, effective teachers assume responsibility for identifying the content, strategies, and expected outcomes for what the students gain through engaged learning. Active teaching learning strategies engage the students in producing work while gradually turning over the learning process to students.

Cultural Context: Influence of Values, Beliefs, and Past Educational Experiences

Early basic education programs often provide the mindset for learning in later educational experiences. Personal learning styles based on initial educational experiences are often considered the only way to approach learning. This influence of prior experiences has been exemplified in stories from health professionals from various environments when they have been asked to share positive and negative experiences from their educational history (Wenger, 2008). Self-reflection yields stories that portray negative and positive experiences that shape who one is as a practicing health professional or teacher. The sharing of personal view–shaping stories with colleagues creates an open, supportive environment for new learning experiences. Examining the positive and negative aspects of personal influence also leads to a list of positive and negative teaching behaviors that illustrate the values and beliefs of who one is as teacher. Knowing one's self as a teacher influences the teacher–student relationships that are developed in the teaching learning process.

Understanding students' beliefs, values, and experiences helps teachers be more effective. A common language allows for easier communication between teacher and student. Also, understanding the culture, religious beliefs, roles of males and females, communication patterns, and other cultural traditions of the groups assists the teacher in creating a positive environment with a diverse group of learners. Please refer to Chapter 3 for more discussion on culture and learning.

Teaching and Learning Settings

The preparation of health care workers requires a variety of different settings that support active teaching learning strategies. Health educator preparation focuses on learning in classrooms; clinical settings, such as health centers and hospitals; homes; and other, nontraditional settings. Understanding how these environments influence the teaching learning process is necessary as well, because it enables the teacher to prepare experiences from which students can learn.

Teaching in the Classroom

Teaching in a classroom setting is challenging. It requires that teachers be adequately prepared so they can develop lectures, manage small and large groups, evaluate and assess students' learning, and use active teaching learning strategies. Although students often prefer the lecture format over participating in small group work or making presentations, teachers should keep in mind that student engagement necessitates a variety of teaching strategies. Topics related to classroom teaching are covered

throughout this book. Skills that are needed for classroom teaching include an understanding of how students learn and come to know things. Understanding learning theories, ways of knowing, learning styles, how to write behavioral objectives and outcomes, writing test questions, plan and conduct a lecture, and understand and conduct student evaluation and assessment are all essential skills for classroom teachers.

Personal Motivation and Goals

Given that the greatest threat to world health is the shortage of health professionals, one of the most critical issues in the planning and improvement of better health care delivery is the training and education of health professionals who become teachers for their profession. Students entering health professional educational programs or learning programs to become health workers have expectations and goals, and they bring with them past educational experiences and an anticipation of learning new knowledge and skills that will make them competent practitioners and teachers. Meeting this expectation requires the teacher to understand learners' personal and group goals; clarify definitions related to teaching, learning, training, and education; and understand students' perceptions of effective teachers.

EVIDENCE-BASED TEACHING AND LEARNING

Many definitions of *evidence-based teaching and learning* exist, ranging from research-based information to expert practitioner opinions and theory-based information. The most commonly quoted definition of evidence-based teaching describes the use of current best practices and evidence to make decisions about the most effective teaching methods, which will result in increased learning for students and thus (theoretically) the best care of patients (Yannacci, Roberts, & Ganju, 2006). This definition provides insight into the essential components of *evidence-based practice*, a term that describes a process used in making safe, appropriate, and maximally effective decisions that are based on current research, clinical knowledge, and successful experiences. Because evidence-based practice is a process, decisions can and will change on the basis of the current available research, knowledge, and experiences. Although the evidence-based process varies in its descriptions (of how it works), common steps in teaching do exist. The following are some examples of these steps:

- Review and study the teaching learning environment, the situation, available readings, educational level of students,[1] information from the environment, and the issues arising out of an existing problem or problems.
- Identify and describe the issues/problems.

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[1]Educational student level refers to whether a student is a beginner or more advanced in their program of study (i.e., first year or final year students). Expectations of students just beginning a program will be different than that of students who have more experience or education, and the evidence-based teaching strategies employed should take these various educational and experience levels into consideration.

- Construct questions that need to be answered.
- Review and evaluate the related literature and other sources of information and data related to the issue/problem. These sources should include current research; experts; practitioners; reputable Web sites; and information obtained in quality workshops, training, and courses.
- Return to the teaching situation with the information and evidence needed to implement successful teaching and learning.
- Monitor and evaluate to determine the effectiveness of the evidence in resolving and/or improving the situation.

Evidence-based teaching and learning practices are based on adult learning theories and, as the name implies, are supported by empirical evidence. Many reviews of adult learning theories have determined the knowledge and skills that focus on how adult learners learn (Yannacci, Roberts, & Ganju, 2006). The following three common principles of learning have been described:

1. Learners must be engaged by understanding the value and benefits of their learning.
2. Outcomes and goals are clearly defined.
3. Teachers should use evidence-based teaching principles to facilitate learning.

For many years, learning was based on psychological models that focused on individual tasks and the behavior changes that were necessary to accomplish those tasks (DeYoung, 2003; Kaufman, 2003). As discussed earlier, an alternative paradigm, the human science model, was presented. This model demonstrated that learning is specifically grounded in interactions between the learner and his or her social context, which helps to facilitate and reinforce the learning process (Kuhn, 1984). Active teaching learning strategies require involvement between teacher and students. Understanding who one is as teacher allows one to fulfill the role of teacher and supports the development of positive faculty–student relationships, facilitating the learning and growth of both teacher and student (Yannacci, Roberts, & Ganju, 2006).

What Is Evidence-Based Teaching/Education?

Evidence-based teaching is often described as the use of the most effective teaching strategies to accomplish desired outcomes for students/learners. Students learn more when evidence-based teaching methods are used than when traditional teaching methods (e.g., a lecture format) are used. Some professionals believe that evidence-based teaching and learning will be based on the best science, science that has been rigorously analyzed and has led to positive outcomes in regard to student learning. In fact, research shows that teaching strategies that require student participation result in increased student learning and retention of the learned material (National Research Council, 2000, pp. 3–6). Evidence-based education operates on two levels: (a) through the use of existing evidence from worldwide research and

related subjects and (b) by establishing sound evidence where existing evidence is lacking or questionable.

Today the educational and health disciplines are exploring the processes of teaching and learning in conjunction with how the brain works. Evidence-based practices and teaching approaches are being implemented in educational settings worldwide with positive results. A basic approach to implementing evidence-based teaching practices involves the following steps for a teacher to undertake:

- Be able to pose the questions to be answered.
- Systemically and comprehensively search for evidence.
- Read and critique evidence according to professional and scientific standards.
- Organize and determine the levels of evidence. Randomized clinical trials are often seen as the gold standard in regard to evidence; however, sometimes practical wisdom, context sensitivity, and culture pervade medical and educational practices.
- Determine the evidence's relevance to educational needs and environmental conditions.
- Clearly describe the educational outcomes desired. Evidence is frequently defined as "what works."
- Evaluate and analyze the educational activity or health intervention.

Low-resource countries face challenges in obtaining research resources and often must depend on colleagues from other countries, experts, and other sources to access evidence-based information. Other sources of information include experts in the field; universities; the Internet; and research journals, where available. Last, but not least, consider the patient and the family as you consider the use of the evidence.

WHO AM I AS TEACHER?

Becoming a teacher is a journey of growth through personal experiences that leads one to determine who one is or wants to be as an educator. Depending on their educational experiences, beginning teachers often choose to emulate the style of one of their own favorite instructors. New teachers also purposefully avoid methods from past mentors and teachers with whom they did not connect.

As a teacher or educator, one brings into the classroom and other learning environments all of one's educational experiences, positive and negative, that shape who one is as a professional. Students often share stories about their positive and negative experiences with teachers and the impact of their connections with teachers on their overall learning. One's beliefs about oneself and others impact one's instructor–student relationships. Examining your own personal experiences and beliefs about personal and professional relationships helps you as a teacher focus on who you want to be as an educator. Experienced teachers often share stories that focus on how they have become the teachers they are today. Continuous growth and development help a teacher progress through the stages of development that come with experience.

LEARNING ACTIVITY 1.1

CLARIFYING DEFINITIONS: TALKING THE SAME LANGUAGE AND CHARACTERISTICS OF AN EFFECTIVE TEACHER

PART I

The purpose of this learning activity is to clarify ideas and concepts related to teaching and learning. It is important that we share and understand the meanings and use of terms related to teaching and learning, that is, that we talk the same language. Sharing experiences and stories enriches our understanding of positive and negative episodes in our lives.

This is a guide to assist a group in a successful discussion of effective teaching. The outcome of this activity is that students will be able to discuss concepts that will serve as a beginning conceptual structure or mental model for teachers and educators.

Instruct students to read the lyrics to "Flowers are Red," a song written and sung by Harry Chapin that illustrates the impact teaching strategies have on students' learning. The song tells the story of a little boy on the first day of school. The boy was drawing pictures of flowers, using his imagination and a wide variety of colors to paint them. The teacher "corrects" him, telling him that he's using the "wrong" colors and that he should paint them red and green, "the way they always have been seen." The boy does not agree and continues to paint them from his imagination—until the teacher punishes the boy. The teacher stands him in a corner, until finally the little boy submits, repeating to the teacher her own words: "Flowers are red, and green leaves are green." The boy moves to a different school, and there he continues to routinely draw flowers in red and green, to the chagrin of his new teacher, who embraces individuality.

According to popular opinion, the idea for the song came to Chapin when his secretary told him about her son, who brought his report card home from school one day. The teacher had written a note in the card saying "Your son is marching to the beat of a different drummer, but don't worry, we will soon have him joining the parade by the end of the term." The quote was often used as an introduction to the song during live concerts. In the live concert versions, Chapin extended the song's ending to: "There still must be ways to have our children say. . ." before featuring the little boy's chorus again and bringing the song to a better conclusion.

The lyrics for the song can be found at *http://www.harrychapin.com/music/flowers.shtml* or *http://www.lyricsdepot.com/harry-chapin/flowers-are-red.html.*

The teaching strategies used in this activity are group discussion and Think–Pair–Share. Opportunities for students to be active in the learning process are inherent to group discussion. *Think–Pair–Share* is a collaborative learning strategy that has the following advantages: It can be used in very large classes, it encourages students to be reflective about the course content, it allows students to privately formulate their thoughts before sharing them with others, and it can foster higher order thinking skills (see *http://clte.asu.edu/active/usingtps.pdf*).

LEARNING ACTIVITY 1.2

CLARIFYING DEFINITIONS: TALKING THE SAME LANGUAGE AND CHARACTERISTICS OF AN EFFECTIVE TEACHER

PART II

After sharing and discussing the lyrics to the song "Flowers are Red," consider your definitions of *teaching*, *learning*, *training*, and *education*. Using a separate sheet of paper, write the definition of these four terms. Take a few minutes and do this.

As a group, discuss and share your answers to questions such as the following:

1. What is teaching?
2. What is learning?
3. What is training?
4. What is education?
5. What characteristics do you expect to see in an educated person?
6. What are the differences between training and education?
7. If learning does not take place, has teaching occurred?
8. Are your answers to these questions influenced by your beliefs, values, and past educational experiences? If so, how?

Following the discussion, put together a definition for each of these four terms: teaching, learning, training, and education. Continue to examine these terms as they relate to your work and to your development as a teacher.

LEARNING ACTIVITY 1.3

CLARIFYING DEFINITIONS: TALKING THE SAME LANGUAGE AND CHARACTERISTICS OF AN EFFECTIVE TEACHER

PART III

In this learning activity, share positive and negative educational experiences and discuss how they influence beliefs and values and who you are as learner and teacher. Reflection on positive and negative learning experiences provides an opportunity to share stories and to examine who you are or want to become as a teacher. This reflection will encourage you to consider and understand the importance of being in touch with and understanding your own humanity. It also will encourage the release of the human spirit in your teaching.

DIRECTIONS

A brief Think–Pair–Share exercise will be used in this assignment. Here is how it works:

1. **Think** about a positive and a negative encounter that you have had with a teacher at some time in your education experiences.
2. **Pair** with the person sitting next to you.
3. **Share** your positive and negative experiences together. Choose one negative and one positive response to share with the group.

Generate a list of positive and negative teacher characteristics.

LEARNING ACTIVITY 1.4

CLARIFYING DEFINITIONS: TALKING THE SAME LANGUAGE AND CHARACTERISTICS OF AN EFFECTIVE TEACHER

PART IV

Parker Palmer (1998), in his book *The Courage to Teach*, stated the following:

> Knowing my students and my subject depends heavily on self-knowledge. When I do not know myself, I cannot know who my students are. I will see them through a glass darkly, in the shadows of my unexamined life—and when I cannot see them clearly, I cannot teach them well. . . . I will know it only abstractly, from a distance, a congeries of concepts as far removed from the world as I am from personal truth. (p. 2)

He also stated that "good teaching cannot be reduced to technique; good teaching comes from identity and integrity" (p. 10).

Three important paths must be taken when one is preparing to become an educator: (a) intellectual, (b) emotional, and (c) spiritual. *Intellectual* refers to the way we think about teaching and learning, how people know and learn, the nature of our students and our subjects. Emotions are the feelings we have as we teach and learn. *Spiritual* refers to the heart's desire to be connected with the largeness of life—a longing that brings our teaching alive. (Palmer, 1998).

The table in Learning Activity 1.5 is designed to elicit and compare students' answers to the following questions:

- What is teaching?
- What is learning?
- What is training?
- What is education?
- How do our definitions and beliefs about each of these terms affect our approaches to teaching and learning?

Discussions of the answers to these questions will elicit rich exchanges of ideas and will help students identify and clarify each other's beliefs about teaching and learning and how these influence who one is as teacher and learner.

LEARNING ACTIVITY 1.5

CLARIFYING DEFINITIONS: TALKING THE SAME LANGUAGE AND CHARACTERISTICS OF AN EFFECTIVE TEACHER

PART V

DEFINITIONS

Teaching	Learning	Training	Education

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