
Integrating Adult Learning Principles Into Training for Public Health Practice

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Providing training and planned learning experiences to practitioners and community partners is fundamental to effective public health. The extent to which principles of adult learning currently guide such training is unknown and likely varies widely. The purpose of this article is to introduce five principles of adult learning and discuss how each can be applied in assessing trainee needs, planning and delivering training, and evaluating training processes and outcomes. Training guided by these principles should facilitate adult learning, collaborative efforts, and mutual respect between agencies, practitioners, and community partners.

Keywords: *training; adult learning; public health practice; evaluation; planning*

Delivery of effective programs and policies in public health requires a well-prepared workforce. The practice of public health is a large and diverse enterprise encompassing the activities of 59 state and territorial health departments, more than 3,000 local health departments, and myriad federal agencies and community-based organizations with both discrete and overlapping responsibilities. It is estimated that the governmental public health workforce (“practitioners”) alone numbers more than 430,000, with another 15,000 in voluntary agencies (Institute of Medicine [IOM], 2003). The public health workforce also cuts across multiple professions with highly varied preparation in the biological and social sciences and other technical fields (IOM, 2003).

For example, only 44% of the public health workforce has formal public health education (Turnock, 2001).

In partnership with the various practitioner groups and agencies that are seeking to improve the health of the public, many programs are now being implemented with “grass-roots” community partners (sometimes called “community-based participatory research”; Israel, Schulz, Parker, & Becker, 1998). For these community-based prevention efforts, it is critical to involve in the process both members of the community itself as well as representatives of organizations that work with or serve members of the community. Most of these community partners will lack formal training and/or experience in a variety of public health disciplines, including health promotion, epidemiology, and evaluation.

Therefore, both practitioners and community partners can benefit from training programs designed to enhance adult learning. Despite considerable research and well-accepted theories and models describing ways to enhance adult learning, many adult educators have little training in adult education (Henschke, 1998; Imel, 1994; Merriam & Caffarella, 1999). To facilitate understanding and consistent application of adult learning theory by those who plan and conduct such training programs, this article identifies and explains five key principles of adult learning and describes how each can be used to enhance the effectiveness of training and other planned learning experiences. Specifically, we explore ways that each adult learning principle can be applied during three essential steps in the training process: (a) assessing trainee needs,

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(b) planning and delivering training, and (c) evaluating the process and impact of training activities.

► WHAT IS AN ADULT LEARNER?

Adult can be defined in biological, legal, social, or psychological terms (Mogelonsky, 1996), and no single

definition is consistently used to identify adult learners. For the purposes of this article, we use Malcolm Knowles's definition: "We become adult psychologically when we arrive at a self-concept of being responsible for our own lives, of being self-directing" (Knowles, Holton, & Swanson, 1998, p. 64).

► FIVE PRINCIPLES OF ADULT LEARNING

There are numerous theories and models that seek to describe or explain how adults learn (Cyr, 1999; Imel, 1998; Merriam, 2001; Merriam & Caffarella, 1999). Although different models have different areas of emphasis (e.g., characteristics of the learner, the process of learning, changes in consciousness of the learner), there is general consensus about the central principles (Lawler, 2003). In reviewing existing theories and models, we identified recurring themes and synthesized them into five key principles. These principles appear in some form in many theories and models of adult learning (see Table 1) and are major components of two leading models, andragogy (Knowles, 1980, 1984; Knowles et al., 1998) and self-directed learning (Knowles, 1975; Tough, 1967, 1971). The principles are:

TABLE 1
Five Key Principles of Adult Learning, by Selected Theories and Models

Theory or Model	Key Citation ^a	Adult Learning Principle				
		Adults Need to Know Why They Are Learning	Adults Are Motivated to Learn by the Need to Solve Problems	Adults' Previous Experience Must Be Respected, Built Upon	Learning Approaches Should Match Adults' Background, Diversity	Adults Need to Be Actively Involved in the Learning Process
Andragogy	Knowles, Holton, and Swanson (1998)	X	X	X	X	X
Thiagi's laws of learning	Zemke (2002)	X	X	X	X	X
Teachers as learners ^b	Lawler (2003)		X	X	X	X
Self-directed learning	Knowles (1975)		X		X	X
Adult basic education principles ^b	Imel (1998)			X		X
Constructivist learning	Daley (2001)		X			

a. Selected from many citations.

b. Model not formally named.

TABLE 2
Sample Assessment and Evaluation Questions for Applying Adult Learning Principles
in Training for Public Health Practice

<i>Principle</i>	<i>Sample Assessment Questions</i>	<i>Sample Evaluation Questions</i>
1. Adults need to know why they are learning.	What is your organization's mission? How do your job responsibilities contribute to that mission? What areas of your organization need improvement?	Were learning objectives clearly stated? How well did trainers understand your reasons for wanting to learn this information?
2. Adults are motivated to learn by the need to solve problems.	What specific problem(s) or challenge(s) do you expect this training will help you address?	How realistic were the problems presented? Were the problems presented ones you have encountered in your organization? How will the training help you address problems or challenges you currently face?
3. Adults' previous experience must be respected and built upon.	In current or past positions, how have you used local data to help understand or solve a local problem? What challenges did you face working to address this problem? How did you overcome those challenges?	How well did trainers understand your past experience and current job demands? Was the content of the training too simple, too complicated, or about right for your level of experience? How easy or difficult was it to integrate the content of the training into your existing knowledge and experience?
4. Adults need learning approaches that match their background and diversity.	Do you learn better by listening and watching or doing? Do you learn better working along or in a group?	Were different training methods used to address different learning objectives? In what ways did the methods used help or hinder your personal learning?
5. Adults need to be actively involved in the learning process.	What do you need to learn to achieve the goals of the training? If you were responsible for planning the training, what would you include and how would you deliver it?	What input and control did you have over what you learned and how you learned it? How did that level of control help or hinder your learning? Did the training include too much, about the right amount, or too little participation from trainees?

1. Adults need to know why they are learning.
2. Adults are motivated to learn by the need to solve problems.
3. Adults' previous experience must be respected and built upon.
4. Adults need learning approaches that match their background and diversity.
5. Adults need to be actively involved in the learning process.

Although these principles are straightforward and intuitive, we propose that integrating them into training requires thoughtful planning, not simply relying on one's instincts. To help guide such planning, we will briefly describe each principle and how it is applied in assessing trainee needs, preparing and delivering training, and evaluating the processes and outcomes of training. Sample

questions for assessing trainee needs and evaluating adherence to each principle are provided in Table 2.

Principle 1: Adults need to know why they are learning. Adults will spend more time and energy learning when they see a reason for learning (Knowles et al., 1998; Tough, 1967). Although many adults—especially those participating in learning activities voluntarily—will enter a learning situation with a clear sense of why it is important for them or their organization, others will not (Lieb, 1991). For these latter adults, it is important to identify potentially compelling reasons for them to fully engage in the learning process. Such reasons can often be gleaned from an assessment of the learner population. For example, it is often useful to learn about current job responsibilities of the learners as well as their individual and organizational goals and priorities.

Such an assessment should also identify constraints and obstacles to achieving these goals and priorities. For example, in training on evidence-based public health (Brownson, Baker, Leet, & Gillespie, 2003), the first session of the course includes a discussion of ways in which decisions are made in public health practice and barriers to effective decision making. This discussion relies largely on the “real-world” experience of the class participants. To help identify trainees’ reasons for learning, assessment questions might include: What is your organization’s mission? How do your job responsibilities contribute to that mission? What are your personal and professional goals? What knowledge do you hope to gain from this training? What areas of your organization need improvement? Answers to questions like these can help infer reasons for learning that might be compelling for a specific adult learner or group of learners.

Because planned learning activities usually have specific objectives, it is important for trainers to make explicit how these objectives will address learners’ reasons for attending a training (Lieb, 1991). For example, the reasons for learning about evidence-based health promotion strategies might be very different for a local health officer who must make strategic decisions about investing limited resources than for a health education practitioner seeking to enhance the delivery of an existing program or service. Demonstrating how a given learning activity will address a variety of different learner goals will help engage different trainees. Because some learners will be goal oriented (Houle, 1961), it follows that incorporating clear goals will also enhance motivation to learn and attention to training.

Evaluation efforts can help determine how well a training or other planned learning experience identified and addressed learners’ reasons for wanting to gain new knowledge or skills. Evaluators might ask learners: Were learning objectives clearly stated? How were the stated objectives similar to or different from your own personal learning goals for the training? How well did the trainers seem to understand your reasons for wanting to learn this information?

Principle 2: Adults are motivated to learn by the need to solve problems. Adults are practical and therefore eager to apply new knowledge to solve problems or challenges they face (Lawler, 2003; Merriam, 2001). For this reason, adults become more ready to learn when they have a specific problem to solve (Knowles, 1984). “Problems” in this sense can be wide ranging, including technical, logistical, tactical, strategic, or administrative challenges. They may also include uncertainty or transition, such as a changing or expanding role or expectations in one’s job. To assure

that planned learning experiences or training sessions adequately address the problems adult learners are hoping to solve, pretraining assessments should gather such information. The basic question is this: What problem(s) or challenge(s) do you expect this training will help you address?

Because one’s professional practice influences how they make meaning of new knowledge (Daley, 2001), the problems identified by different learners will vary considerably, especially in context and detail. It may be impractical to address each learner’s unique problems, so those responsible for planning a training session often must identify broader problem themes that capture the range of challenges reported by learners. For example, in a given training, some learners might express difficulty in establishing community partnerships, others with sharing responsibility and accountability in partnerships, and still others with reconciling different priorities among partner organizations. For planners, these concerns might be consolidated into a single theme relating to effective collaboration, which could then be directly addressed within the training. Problem-based learning, a method in which learning occurs by working through problems (Lohman, 2002), is particularly well suited to do this. By building learning experiences around real problems facing a given group, a more learner-centered environment is adopted and learners are more likely to be engaged, participate in discussion, and share personal insights and experience (Knowles et al., 1998; Lawler, 2003), all factors that facilitate learning.

An evaluation of how well a training adhered to this principle could assess whether the problems introduced and addressed were realistic and relevant to trainees’ job responsibilities or organizational priorities, whether the solutions proposed were realistic and feasible, and the extent to which incorporating problems into learning activities enhanced effectiveness of the training. To gather this information, evaluators might ask adult learners: In your experience, how realistic were the problems presented? Were the problems presented ones you have encountered in your organization? How, if at all, will the information you learned be helpful in addressing problems or challenges you are currently facing? How, if at all, did the problems presented in the training help facilitate your learning?

Principle 3: Adults’ previous experience must be respected and built upon. Adults bring valuable personal and professional experience into a learning setting (Knowles, 1984; Knowles et al., 1998; Merriam & Caffarella, 1999). Because new knowledge is learned within the context of existing knowledge, relating new material to what learners

already know can aid in the learning process (Merriam & Caffarella, 1999). For example, Daley (2001) showed that knowledge became meaningful when adults linked new information with their professional practice, suggesting they may learn more when instruction is contextualized (Daley, 2001). Identifying, acknowledging, and validating learners' past experience is thus essential for adult learning (Knowles, 1984).

Accordingly, an important first step in planning effective training for adult learners is to take inventory of trainees' experiences, particularly as they relate to the learning topics to be addressed or learning objectives to be achieved. Such information can be obtained by asking participants what they know from past experience or local data about the problem of interest. Questions might include: In your current or past positions, how have you used local data to help understand or solve a local problem? What challenges did you face working to address this problem? How did you overcome those challenges? Identifying and understanding the experience and knowledge adult learners bring to training will not only increase efficiency by avoiding redundancy in content but also make possible a wider range of interactive learning activities.

Trainers can and should capitalize on the past experience of learners to facilitate learning (Zemke, 2002). For example, trainers can employ experiential learning techniques such as case studies or discussions that draw on learners' previous experiences. Local data—both qualitative and quantitative—can be especially useful in developing such case studies and usually can be gathered prior to a training session. For example, local quantitative data might be used to describe the magnitude of a problem while qualitative data could seek to capture trainees' tacit knowledge about the problem (e.g., perceptions of the effectiveness of different solutions). In the National Cancer Institute's *Using What Works* training program, trainee experiences are elicited and integrated into training content (Boyle & Homer, 2006). Trainees are first asked: "Have you had any successful partnerships with organizations with competing messages or nontraditional program partners?" (Boyle & Homer, 2006). The trainer then uses trainee responses as a talking point for illustrating how having different types of partners can benefit a program.

Using this approach has at least three benefits: It (a) involves learners directly by having them talk about their experiences and reflect on local data, (b) acknowledges and validates learners' expertise and experience by making it part of the planned learning, and (c) provides learners with the opportunity to extend planned content (e.g., "Is there anything I left out that you have found to be important in your experience?"). In addition, trainees can

be encouraged to discuss how the new knowledge fits into what they already know. What are they learning that is new? How well, if at all, does the content of the training fit their personal experience? Does it affirm or change their beliefs? How, if at all, will it change what they do or how they do it?

An evaluation of training based on this principle will determine the extent to which learners feel their experiences were valued and perceive instructors as providing opportunities to share their experiences and apply new knowledge and skills to current or past situations. Sample questions might include: How well did the trainers seem to understand your past experience and current job demands? Would you say the content of the training was too simple, too complicated, or about right given your level of experience? How easy or difficult was it to integrate the content of the training into your own existing knowledge and previous experience? In what ways, if any, did the use of local data enhance your learning? How much, if at all, did you learn from other participants' sharing their experiences?

Principle 4: Adults need learning approaches that match their background and diversity. Because adults have accumulated a greater set and wider range of life experiences, they are more diverse as a group in their interests and preferred styles of learning (Knowles et al., 1998). A multitude of learning styles exists, and different ones may predominate over others depending on the learning situation (Delahoussaye, 2002). Furthermore, trainees' educational background and orientation to learning may range from a strong aversion to certain subjects (e.g., using math and/or interpreting data) to an eagerness to go above and beyond the presented material. This individual variability may be more pronounced given the diversity of the public health workforce. To create effective learning experiences, adult education and training programs must develop and use multiple methods, represent different perspectives, contextualize content in a variety of ways, and most important, know when each variant is appropriate for a given group of learners, or even a particular subgroup or individual within a group.

Assessment, even just asking how a person likes to learn (about the training topic) or which of several different learning styles best describes them, helps identify the diverse needs and learning styles of trainees. Specific questions to ask might include: Do you learn better by listening and watching or doing? Do you learn better working alone or in a group? With this information, training planners are better able to select or develop appropriate methods to maximize learning.

Because the diversity of any adult learning group is likely to be great, it may be necessary to prepare different

training approaches that vary across training content and learning styles. A modular approach, in which different components of a training are distinguished by their focus on specific content or learning style used, allows trainees to focus on subtopics they are most interested in or choose the learning style they prefer. Although creating multiple versions of training lessons requires significantly more preparation time, it can pay off in increased effectiveness if learning activities are better suited to trainee needs. For example, training in evidence-based public health (Brownson et al., 2003) has been adapted to the educational backgrounds, language, and local needs for a variety of public health practitioners nationally and globally. Evaluation of training based on this principle will reveal how well individual trainee differences were accounted for in the training approach. Specific evaluation questions might include: Were different training methods used to address different learning objectives? In what ways did the methods used help or hinder your personal learning?

Principle 5: Adults need to be involved in the learning process. Adults often consider themselves self-directing and thus prefer to control their learning (Knowles, 1984). For many adults, organized learning represents a rigid environment where they have little choice of what and how they learn. Such an environment can inhibit adults' motivation to learn (Lawler, 2003). Allowing adults to become stakeholders in the training process by sharing control over content and methods will lead to greater motivation (Garrison, 1997) and presumably increase the likelihood of training success. Ideally, trainees will have an opportunity to provide input into the training curriculum (Knowles et al., 1998). In some cases, a high degree of individualized self-direction may not be feasible within a diverse population of learners or in a single training session. Trainers can involve the trainees in setting the curriculum by incorporating their responses to the following types of questions: What do you need to learn to achieve the goals of the training? If you were responsible for planning the training, what would you include and how would you deliver it? For example, in a series of 1-day courses to improve physical activity interventions (Brownson et al., 2007), each training session was planned with one or more representatives of eight states to ensure that the needs of each state were met. Among the benefits of these presessions, trainers were able to analyze and present local data, as suggested within Principle 3.

The level of desired self-direction will vary among trainees. Some will prefer no self-direction and others will prefer to be completely self-directing (Pratt, 1988). Providing a participatory learning environment allows

learners to adopt their preferred level of autonomy. Learning modules, as described earlier, in the form of breakout sessions or smaller working groups can allow for self-directed learning within smaller learning groups. Using teaching techniques such as discussions or case studies that engage learners on a personal level also allows some learner control over the pace and direction of the training.

Evaluation of training based on this principle should show how much control trainees perceived they had and to what extent that level of self-direction enhanced training effects. Possible evaluation questions include: What input and control did you have over what you learned and how you learned it? How did that level of control help or hinder your learning? Did you feel the trainer asked for an appropriate amount of participation from the trainees?

► CONCLUSION

There are now numerous adult learning programs being implemented for a range of public health practitioners and community partners (Bartholomew, Parcel, Kok, & Gottlieb, 2006; Brownson et al., 2003; Franks et al., 2005). Understanding and adhering to the principles we have outlined should enhance not only learning but also reciprocal respect and trust between trainers and trainees. Assessment and evaluation using items like those provided (see Table 2) can help determine how well the five principles were integrated into a training and will yield useful data for refining and improving future iterations of a training.

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