

Library of Congress Cataloging-in-Publication Data

The ASTD training and development handbook : a guide to human resource development / Robert L. Craig, editor in chief ; sponsored by the American Society for Training and Development.—4th ed.

p. cm.  
Previous ed. published under title: Training and development handbook. 3rd ed. 1987.

Includes index.  
ISBN 0-07-013359-X  
1. Employees—Training of. I. Craig, Robert L. II. American Society for Training and Development. III. Training and development handbook.  
HF5549.5.T7T6648 1996  
658.3'124—dc20

96-4177  
CIP

**McGraw-Hill**



A Division of The McGraw-Hill Companies

Copyright © 1996, 1987, 1976, 1967 by The McGraw-Hill Companies, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

1 2 3 4 5 6 7 8 9 0 DOC/DOC 9 0 1 0 9 8 7 6

ISBN 0-07-013359-X

The sponsoring editor for this book was Richard Narramore, the editing supervisor was Jane Palmieri, and the production supervisor was Suzanne W. B. Rapcavage. It was set in Palatino by Cynthia L. Lewis of McGraw-Hill's Professional Book Group composition unit.

Printed and bound by R. R. Donnelley & Sons Company.

McGraw-Hill books are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. For more information, please write to the Director of Special Sales, McGraw-Hill, 11 West 19th Street, New York, NY 10011. Or contact your local bookstore.



This book is printed on recycled, acid-free paper containing a minimum of 50% recycled, de-inked fiber.

**American Society for Training and Development  
Handbook Advisory Board**

**Elba F. Baskin**  
Managing Director  
Center for Professional Education  
Arthur Andersen & Company

**Melinda J. Bickerstaff**  
(formerly) Vice President, Human Resources  
Chevy Chase Federal Savings Bank

**Paul H. Chaddock**  
(retired) Senior Vice President, Human Resources  
Lechmere, Inc.  
Council of Governors, ASTD

**Donald K. Conover**  
(retired) Vice President  
Corporate Education and Training  
AT&T Corporation

**Rosalind Cowie**  
Special Assistant for Training Policy and Liaison  
U.S. General Accounting Office

**John S. Jenness**  
Chairman  
Boston Institute for Management Studies  
(formerly) Consolidated Edison  
Past President, ASTD

**Dr. Donna B. McNamara**  
Director  
Global Education and Training  
Colgate Palmolive Company  
Council of Governors and Past President, ASTD

**Gloria Regalbuto**  
President  
Seafirst University  
Seattle Bank  
Council of Governors and Past Presidents, ASTD

**Ed Schroer**  
Vice President, New Product Development  
ASTD

**Dr. Michal Foriest Settles**  
Department Manager, Human Resources  
Bay Area Rapid Transit District (BART)

**Jerold V. Tucker**  
Director, Corporate Education  
GTE Service Corporation

**Lana H. Wertz**  
Lana Wertz Executive Development  
(formerly) Director, Providian Learning Institute

26. Jaques, Elliott, and Stephen D. Clement, *Executive Leadership: A Practical Guide to Managing Complexity*, Cason Hall & Co., Falls Church, VA (2d printing), 1994.
27. Jaques, Elliott, *Requisite Organization: The CEO's Guide to Creative Structure and Leadership*, Cason Hall & Co., Falls Church, VA, 1986.
28. Jung, C. G., *The Collected Works of C. G. Jung*, vol. 6, *Psychological Types* (Bollingen Series), Princeton University Press, Princeton, NJ, 1971.
29. Briggs-Myers, Isabel (with Peter Myers), *Gifts Differing*, Consulting Psychologists Press, Palo Alto, CA, 1980.
30. Keirse, David, and Marilyn Bates, *Please Understand Me: Character and Temperament Types*, Prometheus Nemesis, Del Mar, CA, 1978.
31. Srivastva, Suresh, and David L. Cooperrider, *Appreciative Management and Leadership: The Power of Positive Thought and Action in Organizations*, Jossey-Bass, San Francisco, 1990.
32. Westbrook, Jerry D., "Organizational Culture and its Relationship to TQM," *Industrial Management*, January–February 1993.
33. Barker, Joel A., *Paradigms: The Business of Discovering the Future*, Harper-Collins, New York, 1993. Also Stucker, Jan Collins, "The Business of Paradigms," *Business and Economic Review*, vol. 38, no. 2, January–March 1992.
34. Olmsted, Barney, and Suzanne Smith, *Creating a Flexible Workplace*, 2d ed., AMACOM (American Management Association), New York, 1994.
35. Bridges, William, *Job Shift: How to Prosper in a Workplace Without Jobs*, Addison-Wesley, Reading, MA, 1994.
36. Tichy, Noel M., and Mary A. Devanna, *The Transformational Leader*, John Wiley & Sons, New York, 1990.
37. Gouillart, Francis J., and James N. Kelly, *Transforming the Organization: Reframing Corporate Direction, Restructuring the Company, Revitalizing the Enterprise, Renewing People*, McGraw-Hill, New York, 1995.

# 12

## Adult Learning

Malcolm S. Knowles

**Malcolm S. Knowles** is Professor Emeritus of Adult and Community College Education of North Carolina State University. Previously, he was Professor of Education at Boston University, Executive Director of Adult Education Association of the U.S.A., and Director of Adult Education for the YMCAs of Boston, Detroit, and Chicago. He received his A.B. at Harvard College in 1949 and his M.A. and Ph.D. from the University of Chicago in 1949 and 1960, respectively. Since his retirement in 1979, he has been actively engaged in consulting and conducting workshops with business and industry, government agencies, educational institutions, religious institutions, voluntary agencies, and ASTD chapters and conferences in North America, Europe, South America, Australia, Japan, Singapore, Thailand, and Korea. He is the author of 17 books, the most recent being *The Adult Learner: A Neglected Species*, Gulf Publishing, rev. ed. 1984, *Andragogy in Action*, Jossey-Bass, 1984, and *The Making of an Adult Educator*, Jossey-Bass, 1989, and over 230 articles.

### Wherefore Pedagogy?

All formal educational institutions in modern society were initially established exclusively for the education of children and youth. At the time they were established there was only one model of assumptions about learners and learning—the pedagogical model (derived from the Greek words *paid*, meaning "child," and *agogus*, meaning "leader"; so "pedagogy" means literally "the art and science of teaching children").

This model assigned full responsibility for making all decisions about what should be learned, how it should be learned, when it should be learned, and if it had been learned, to the teacher. Students were given the role of being submissive recipients of the directions and transmitted content of the teacher. It assumed that they were dependent personalities, that they had little experience that could serve as a resource for learning, that they became ready to learn what

they were told they had to learn (to get promoted to the next level), that they were subject-centered in their orientation to learning, and that they were motivated by extrinsic pressures or rewards. The backbone methodology of pedagogy is transmission techniques.

As educational psychologists started researching educational phenomena around the turn of the century they were governed largely by these assumptions, too. But they were not really looking at learning; they were investigating reactions to teaching. And the more they found out about how teachers could control learners' reactions, the more controlling teaching became. Pedagogy was king.

When adult education began to be organized systematically in the first quarter of this century, pedagogy was the only model teachers of adults had to go on, with the result that until recently adults were taught as if they were children. I believe that this fact accounts for many of the troubles adult educators encountered, such as a high drop-out rate (where attendance was voluntary), low motivation, and poor performance. When training began emerging as a specialty within the general adult education movement almost half a century later, this was the only model available to trainers, as well.

## Then Came Andragogy

The first inkling that the pedagogical model may not be appropriate for adults appeared in a book by Eduard C. Lindeman, *The Meaning of Adult Education*, in 1926.<sup>1</sup> Based on his experience as both an adult learner and a teacher of adults, Lindeman proposed that adults were not just grown-up children, that they learned best when they were actively involved in determining what, how, and when they learned. But it was not until the 1950s, when we began getting empirical research on adults as learners, that the notion that there are differences between youth and adults as learners began being taken seriously.

A seminal study by Houle<sup>2</sup> spawned a crescendo of studies (Tough,<sup>3,4</sup> Peters,<sup>5</sup> Penland,<sup>6</sup> and others) of how adults learn naturally (e.g., when they are not being taught). These studies document the fact that adults do indeed engage in more intentional learning outside of formal instruction than in organized programs and that they are in fact highly self-directed learners. Meantime, knowledge about adult learners was coming from other disciplines. Clinical psychologists were providing information on the conditions and strategies that promoted behavioral change (which is what education should be about, too). Developmental psychologists were illuminating the development stages that adults experience throughout the life span, which are a main stimulus of readiness to learn. Sociologists were exposing the effects that many institutional policies and practices have in inhibiting or facilitating learning (especially the inhibiting effects of rules and regulations, requirements, registration procedures, time schedules, and the like). Social psychologists were revealing the influences of forces in the larger environment, such as social attitudes and customs, reward systems, and socioeconomic and ethnic stratification.

Early in the 1960s European adult educators were feeling a need for a label for this growing body of knowledge about adult learners that would enable them to talk about it in parallel with the pedagogical model, and they coined the term (or actually rediscovered the term that had been coined by a German adult educator in 1833) *andragogy*. It is derived from the Greek word *aner*, meaning "adult" (literally, "man, not boy"). It was initially used to mean "the art and science of helping adults learn," but, as will be shown later, the term has taken on a broader meaning. It is a term that is now widely used around the world as an alternative to pedagogy.

## What Do We Know About Adults as Learners?

The research cited above leads to the following assumptions about adults as learners, on which the andragogical model is based:

1. *Adults have a need to know why they should learn something.* Tough<sup>4</sup> found that adults would expend considerable time and energy exploring what the benefits would be of their learning something and what the costs would be of their not learning it before they would be willing to invest time and energy in learning it. We therefore now have a dictum in adult education that one of the first tasks of the adult educator is to develop a "need to know" in the learners—to make a case for the value *in their life performance* of their learning what we have to offer. At the minimum, this case should be made through testimony from the experience of the trainer or a successful practitioner; at the maximum, by providing real or simulated experiences through which the learners experience the benefits of knowing and the costs of not knowing. It is seldom convincing for them to be told by someone (like the boss) that it would be good for them.

To practice what I preach, let me try to make a case for your learning about "Treating Adult Learners as Adults." Let me quote from an article I wrote for the *Training and Development Journal* of September 1976, "Separating the Amateurs from the Pros in Training":

When I first got into training in 1935 the assumption was made that one didn't need to have qualifications much different from any other administrative role to do a good job as a training director. The role was defined essentially as that of managing the logistics of organizing and operating activities for various groupings of individuals. If one had any experience in planning schedules, building budgets, getting out promotional materials, hiring people, and filling out reports, he [there were no she's at that time] was qualified. We were all amateurs.... But no longer. During the intervening years there has been a body of knowledge about how adults learn and a body of technology for facilitating that learning that is changing the role of trainer and requiring that he or she know things few teachers know and probably none of his or her associates knows. The trainer must know *andragogy*—the art and science of helping adults learn—and how it differs from *pedagogy*—the art and science of teaching youth.... This is the mark of the pro.

I am assuming that all who are reading this chapter want to be pros.

2. *Adults have a deep need to be self-directing.* In fact, the psychological definition of "adult" is one who has achieved a self-concept of being in charge of his or her own life, of being responsible for making his or her own decisions and living with the consequences. At the point at which we arrive at this self-concept we develop a deep psychological need to be seen and treated by others as being capable of taking responsibility for ourselves. This fact creates a special problem for us in adult education and training in that although adults may be completely self-directing in most aspects of their lives (as full-time workers, spouses, parents, and voting citizens), when they enter a program labeled "education" or "training," they hark back to their conditioning in school and college and put on their hats of dependency, fold their arms, sit back, and say, "Teach me." The problem arises if we assume that this is really where they are coming from and start teaching them as if they were children. We then put them into an inner conflict between this intellectual map—learner equals dependent—and their deeper psychological need to be self-directing. And the way most people deal with psychological conflict is to seek to withdraw from the situation causing it. To resolve this prob-

lem adult educators have been developing strategies for helping adults to make a quick transition from seeing themselves as being dependent learners to becoming self-directed learners. My little paperback book, *Self-Directed Learning: A Guide for Learners and Teachers*<sup>7</sup> describes some of these strategies.

3. *Adults have a greater volume and different quality of experience than youth.* Except in certain pathological circumstances, the longer we live the more experience and more varied experience we accumulate. The greater reservoir of experience affects learning in several ways:

- Adults bring into a learning situation a background of experience that is itself a rich resource for many kinds of learning for themselves and for others. Hence, in adult education, the greater emphasis on the use of experiential learning—techniques, such as discussion methods and problem-solving exercises, that tap into the accumulated knowledge and skills of the learners, or techniques, such as simulation exercises and field experiences, that provide learners with experiences from which they can learn by analyzing them.
- Adults have a broader base of experience to which to attach new ideas and skills and give them richer meaning. The more explicit these relationships (between the old and the new) are made—through discussion and reflection—the deeper and more permanent the learning will be (see Boud et al., 1985).
- It is predictable that a group of adults, especially if there is an age mix, will have a wider range of differences in background, interests, ability, and learning styles than is true of any group of youth. Adult groups are heterogeneous groups. Accordingly, increasing emphasis is being placed in adult education on individualized learning and instruction, through contract learning, self-paced multimedia modules, learning resource centers, and other means.
- But there is a potentially negative consequence of this fact of greater experience—it tends to cause people to develop habits of thought and biases, to make presuppositions, to be less open to new ideas. (How often have you heard somebody react to a new proposal, “It won’t work. We tried it five years ago and it didn’t work”?) Some techniques have been developed to try to counter this tendency—sensitivity training, open-mindedness scales, creativity exercises, and others.

But the difference in quality of experience adults bring with them is also significant. Few youths have had the experience of being full-time workers, spouses, parents, voting citizens, organizational leaders, and of performing other adult roles. Most adults have. Accordingly, adults have a different perspective on experience: it is their chief source of self-identity. To youth, experience is something that happens to them. But adults define themselves in terms of their unique experiences. An adult’s experience is who he or she is. So if adults’ experience is not respected and valued, is not made use of as a resource for learning, they experience this omission not as a rejection of their experience but as a rejection of them as persons. Evidence indicates that this phenomenon is especially characteristic of undereducated adults.

4. *Adults become ready to learn when they experience in their life situation a need to know or be able to do in order to perform more effectively and satisfyingly.* The pedagogical model makes the opposite assumption—that people become ready to learn what they are told by some authority figure (teacher, trainer, boss), that they have to learn because it’s good for them or the authority figure demands it. Adults experience “being told” as infringing upon their adulthood—their need to be self-directing—and tend to react with resentment, defensiveness, and resistance. Adults learn best when they choose voluntarily to make a commitment to learn.

This principle is often difficult to apply in business and industry, since, rightly or wrongly, employer-provided training tends to be perceived as employer-required training. Indeed, often attendance is compulsory. When I sense that there are people in one of my activities who have been “sent,” I do two things to try to reduce the resistance it induces. First, I make it public that I realize that there may be some people in the room who aren’t there because they want to be, and that I am sorry about this because it tends to get in the way of learning. But, I explain, there is nothing I or you can do to change this at this time, so let’s accept it as a given and see if we can’t have a pleasant and profitable time together anyway. More importantly, I try to involve them in discovering for themselves—through participating in simulation exercises, self-diagnosing their learning needs through competency-based rating scales, or observing role models of superior performance—the value for their own lives of learning what the program has to offer.

One of the richest sources of readiness to learn is the transition people make when moving from one developmental stage to another. As Havighurst<sup>8</sup> points out, as we confront having to perform the development tasks of the next stage of development, we become ready to learn those tasks; and the peak of our desire to learn them he calls the “teachable moment.” A typical sequence of developmental tasks in work life would be (1) to begin a process of career planning, (2) to acquire competencies required for a first job, (3) to get a first job, (4) to become oriented to the first job, (5) to master the competencies required to perform excellently in the first job, (6) to plan and prepare for a next-step-up job, and so through a cycle of career development. The final developmental task would be to prepare for retirement from a career. A main implication of this concept is the importance of timing our educational offerings to coincide with the worker’s developmental tasks. Indeed, some of the great goofs of training have occurred as a result of forcing people into training activities before they are ready for them—as, for example, pushing people into supervisory training programs before they feel they have mastered the work they are to be supervising.

5. *Adults enter into a learning experience with a task-centered (or problem-centered or life-centered) orientation to learning.* Children and youth have been conditioned by their school experience to have a subject-centered orientation to learning; they see learning as a process of acquiring the subject matter necessary to pass tests. Once that is done, their mission is accomplished. This difference in orientation calls for different ways of organizing the content to be learned. In traditional education the content is organized into subject-matter courses—such as Composition I, in which the rules of grammar are memorized, Composition II, in which sentence and paragraph structures are memorized, and Composition III, in which rules of outlining, syntax, and the like are memorized. In adult education the content is organized around life tasks: Composition I becomes “Writing Better Business Letters,” Composition II becomes “Writing for Pleasure and Profit,” and Composition III becomes “Improving Your Professional Communications.”

I have found that this principle is commonly violated in orientation programs, in which the sequence of topics might be (1) The History and Philosophy of XYZ Co., (2) The Market and Products of XYZ Co., (3) The Personnel Policies of XYZ Co., and so on, instead of starting with a census of problems and concerns, along with problems and concerns of the organization and trainer. But I strongly urge trainers to review their entire programs and restructure the units around tasks, problems, or life situations. The participants will see the program as much more relevant to their lives and they will learn the content with the intention of *using* it.

6. *Adults are motivated to learn by both extrinsic and intrinsic motivators.* One of the most significant findings of the research into adult learning is that adults are

motivated to learn. Allen Tough,<sup>4</sup> the researcher who has to date accumulated the largest volume of information about how adults learn in normal life, has yet to find a subject in his research who had not engaged in at least one major learning project (a minimum of seven hours of intentional learning) in the preceding year, and the average number of learning projects was over seven. The problem (and our challenge) is that they may not be motivated to learn what we want to teach them; hence the importance of following through on the first assumption above—developing a need to know.

The pedagogical model makes the assumption that children and youth are motivated primarily, if not exclusively, by extrinsic motivators—pressures from parents and teachers, competition for grades, diplomas, and the like. Adult learners respond to extrinsic motivators—wage raises, promotion, better working conditions, and the like—up to the point that they are reasonably well satisfied. But the more potent and persistent motivators are such intrinsic motivators as the need for self-esteem, broadened responsibilities, power, achievement, and the like (Wlodkowski<sup>5</sup>). The message here, as I read it, is to appeal to both the desire for job advancement and life enrichment in promoting your programs.

## Implications for Practice

The assumptions of pedagogy and andragogy have a number of implications for what we do as human resource developers. One basic implication is the importance of making a clear distinction between a *content plan* and a *process design*.

When planning an educational activity, the pedagogist thinks in terms of drafting a content plan, and he has to answer only four questions to come up with a plan: (1) What content needs to be covered (the assumption being that they will only learn what he transmits, and therefore he has to cover it *all* in the classroom)? So he draws up a long laundry list of content terms. (2) How can this content be organized into manageable units (one-hour, three-hour, etc., units)? So he clusters the content items into manageable units. (3) How can these content units be transmitted in a logical sequence (rather than the sequence in which the learners are ready to learn it)? So he arranges the units in a sequence according to chronology (history, literature, political science) or from simple to complex (science, math). (4) What would be the most effective methods for transmitting this content? If unit 1 is heavily loaded with information, the method of choice will probably be lecture and assigned reading; if unit 2 involves skill performance, the method of choice will probably be demonstration by him and drill, drill, drill by them. By answering these four questions, he ends up with a content-transmission plan.

The andragog, on the other hand, when she (get the gender change?) undertakes to plan an educational activity, sees her task as being twofold: first, and primarily, to design and manage a process for facilitating the acquisition of content by the learners; and only secondarily to serve as a content resource (she perceives that there are many content resources in addition to her own—peers, supervisors, specialists, and a variety of materials in the learner's environment, and that an important part of her responsibility is to keep up to date as to what these resources are and to link learners with them). So the andragog has to answer a very different set of questions to come up with a process design: (Notice that it is not a matter of the pedagogist's being concerned with content and the andragog's not being concerned with it; rather, the pedagogist is concerned with transmitting the content and the andragog is concerned with facilitating the acquisition of the content by the learners.)

The questions raised by the andragog have to do with implementing the following elements of an andragogical process design:

1. *Climate setting.* A prerequisite for effective learning to take place is the establishment of a climate that is conducive to learning. Two broad aspects of climate must be considered: institutional climate and the climate of training situation.

Among the questions that might be raised regarding institutional climate are: Do the policy statements of the institution convey a deep commitment to the value of human resource development in the accomplishment of the mission of the institution? Does the budget of the institution provide adequate resources for the support of significant human resource development (HRD) efforts? Is the HRD staff involved in the decision-making process as regards personnel policies and programs? Are adequate physical facilities for HRD activities provided? Does the reward system of the institution give credit for the achievement of personal growth on the part of individuals and their supervisors?

As regards setting a climate in a training situation, these are the conditions that I think characterize a climate that is conducive to learning, and the questions that might be asked in creating a process design to achieve those conditions:

- A climate of mutual respect. I believe that people are more open to learning if they feel respected. If they feel that they are being talked down to, embarrassed, or otherwise denigrated, their energy is diverted from learning to dealing with these feelings. I do several things to try to bring such a climate into being: First, I provide name tents—5 by 8 cards with their names printed on them with bold felt pens—so that I (and they) can start calling on them by name. Then I put them into small groups of five or six persons (preferably sitting around tables) and ask them to share their “whats” (their work roles); their “whos” (one thing about themselves that will enable others to see them as unique human beings); any special knowledge, skill, or other resources they would be willing to share with others; and any questions, problems, or concerns they are hoping will be dealt with in this program. I ask one person in each group to volunteer to give a high-point summary of this information about each group. I feel that this hour is the most important hour in the whole training event, since it starts the process of creating a climate that is conducive to learning.
- A climate of collaborativeness rather than competitiveness. The above sharing exercise causes the participants to start seeing themselves as mutual helpers rather than rivals. For many kinds of learning, the richest resources are within their peers, hence the importance of making these resources available.
- A climate of supportiveness rather than judgmentalness. I think I largely set this climate by being supportive in my own behavior, but the opening exercise also tends to establish peer-support relationships.
- A climate of mutual trust. In order to reduce the instinctive mistrust with which people typically react to authority figures, in presenting myself I emphasize who I am as a human being rather than as an expert, and I urge them to call me by my first name.
- A climate of fun. Learning should be one of the most joyful things we do, and so I do everything I can to make the experience enjoyable. I make a lot of use of spontaneous (not canned) humor.
- A human climate. Learning is a human activity; training is for dogs and horses. So I try to establish a climate in which people feel that they are being treated as

human beings, not objects. I try to care for their human needs—comfortable chairs, frequent breaks, adequate ventilation and lighting, availability of coffee or cold drinks, and the like.

The first question an andragog asks in constructing a process design, therefore, is “What procedures should I use with this particular group to bring these climatic conditions into being?”

2. *Creating a mechanism for mutual planning.* A basic law of human nature is at work here: people tend to feel committed to a decision or activity to the extent that they have participated in making the decision or planning the activity. The reverse is even more true: people tend to feel uncommitted to the extent they feel that the decision or activity is being imposed on them without their having a chance to influence it.

In planning a total program—all the courses, workshops, seminars—of an institution, the usual mechanism is a planning committee, council, or task force. To be effective, it is critical that it be representative of all the constituencies the program is designed to serve. (See Houle<sup>10</sup> for helpful guidelines.)

For a particular program, such as a course or workshop, I prefer to use teams of participants, with each team having responsibility for planning one unit of the program.

The fullest participation in planning is achieved, however, through the use of learning contracts, in which case the learners develop their own learning plans (see Knowles<sup>7,11,12</sup>).

The second question the andragog answers in developing a process model, therefore, is “What procedures will I use to involve the learners in planning?”

3. *Diagnosing the participant's learning needs.* The HRD literature is rich in techniques trainers can use for assessing training needs as perceived by individuals, organizations, and communities (Boone,<sup>13</sup> Brown and Wedel,<sup>14</sup> Davis and McCallon,<sup>15</sup> Knowles,<sup>16</sup> McKenzie and McKinley,<sup>17</sup> Mager and Pipe<sup>18</sup>). These needs are the appropriate source of goals for a total program (Knowles,<sup>16</sup> pp. 120–126). But in a particular training event involving particular individuals, a learning need is not a need unless so perceived by the learner. One of the highest arts in training is creating the conditions and providing the tools that will enable learners to become aware of their training needs and therefore translate them into learning needs. A new body of technology is being developed for facilitating this process, with emphasis on such self-diagnostic procedures as simulation exercises, assessment centers, competency-based rating scales, and videotape feedback (Knowles,<sup>16</sup> Wlodkowski<sup>9</sup>).

So the third set of questions the andragog asks in constructing a process design is “What procedures will I use in helping the participants diagnose their own learning needs?”

4. *Translating learning needs into objectives.* Having diagnosed their learning needs, participants now face the task of translating them into learning objectives—positive statements of directions of growth. Some kinds of learning (such as machine operation) lend themselves to objectives stated as terminal behaviors that can be observed and measured (Mager<sup>19</sup>). Others (such as decision-making ability) are so complex that they are better stated in terms of direction of improvement (Knowles,<sup>11</sup> pp. 128–130).

So the fourth question the andragog asks is “What procedures can I use for helping participants translate their learning needs into learning objectives?” (For suggested procedures, see Knowles,<sup>7</sup> pp. 25–28.)

5. *Designing and managing a pattern of learning experiences.* Having formulated the learning objectives, the trainer and the participant then have the task of

designing a plan for achieving them. This plan will include identifying the resources most relevant to each objective and the most effective strategies for utilizing these resources. Such a plan is likely to include a mix of total group experiences (including input by the trainer), subgroup (learning-teaching team) experiences, and individual learning projects. A key criterion for assessing the excellence of such a design is, how deeply involved are the participants in the mutual process of designing and managing a pattern of learning experiences?

So the fifth question the andragog asks is “What procedures can I use for involving the learners with me in designing and managing a pattern of learning experiences? (For suggested procedures, see Knowles,<sup>16</sup> pp. 235–247.)

6. *Evaluating the extent to which the objectives have been achieved.* In many situations institutional policies require some sort of “objective” (quantitative) measure of learning outcomes (Kirkpatrick,<sup>20</sup> Scriven,<sup>21</sup> Stufflebeam<sup>22</sup>). But the recent trend in evaluation research has been to place increasing emphasis on “subjective” (qualitative) evaluation—finding out what is really happening inside the participants and how differently they are performing in life (Cronbach,<sup>23</sup> Guba and Lincoln,<sup>24</sup> Patton<sup>25,26,27,28</sup>). In any case, the andragogical model requires that the learners be actively involved in the process of evaluating their learning outcomes (Knowles<sup>12</sup>).

The sixth question, therefore, that the andragog asks is “What procedures can I use to involve the learners responsibly in evaluating the accomplishment of their learning objectives?”

By answering these six sets of questions, the learning facilitator emerges with a *process design*—a set of procedures for facilitating the acquisition of content by the learners.

## But Not Andragogy versus Pedagogy

When I first began conceptualizing the andragogical model I perceived it as being antithetical to the pedagogical model. In fact, in the book in which I first presented the andragogical model in detail, *The Modern Practice of Adult Education*,<sup>16</sup> I used the subtitle “Andragogy versus Pedagogy.” During the next few years I began getting reports from elementary and secondary school teachers saying that they had been experimenting with applying the andragogical model in their practice and finding that children and youth also learn better in many situations when they are involved in sharing responsibility. And I got reports from teachers of adults that they had found situations in which they had to use the pedagogical model. So when I revised the book in 1980 I used the subtitle, “From Pedagogy to Andragogy.”

As I see it now, whereas for 13 centuries we had only one model of assumptions and strategies regarding education—the pedagogical model, now we have two models. So we have the responsibility now of checking out which set of assumptions is realistic in which situation, and using the strategies of whichever model is appropriate for that situation. In general, the pedagogical assumptions are likely to be realistic in those situations in which the content is totally strange to the learners and in which precise psychomotor skills are involved, as in machine operation. But even in these situations, elements of the andragogical model, such as climate setting, might enhance the learning. And I use elements of the pedagogical model, such as reinforcement, in my andragogical practice. So my stance now is not either-or, but both—as appropriate to the situation.

## Preparing for the Future

In the third quarter of this century we accumulated more research-based knowledge about adults as learners than was known in all of previous history. In the past decade that body of knowledge has at least doubled. I am confident that the present body of knowledge will at least double in the next decade. My colleagues in the biological sciences assure me that their disciplines will contribute some of the major breakthroughs, especially as regards the physiological, chemical, and neurological (such as right-brain, left-brain) processes involved in learning. The technology of making resources for learning available is already in a state of revolution, especially with the development of computers and communications satellites. My own conviction is that by the end of this century most educational services will be being delivered electronically to learners at their convenience in terms of time, place, and pace.

What a challenge we in human resource development face if we are to avoid the obsolescence of our workforce. I can foresee this challenge requiring that we reconceptualize a corporation (or any social system) as a system of learning resources as well as production and service-delivering system and redefine the role of HRD away from that of managing the logistics of conducting training activities to that of managing a system of learning resources. We would then ask a very different set of questions from those we have traditionally asked in training and development. The first question would be, "What are all of the resources available in this system for the growth and development of people?" Then we would have to ask, "How well are these resources being utilized now, and how might they be more effectively utilized?" We might come up with a chart that looks something like Table 12-1.

If nothing more is done than what has been described so far, the quality of human resource development in a corporation would probably be improved. But learning would still be episodic, fragmented, and disconnected. It can be made more systematic, incremental, and continuous through the use of learning contracts or development plans (Knowles<sup>12</sup>).

A contract simply specifies what an individual's objectives are for a given learning project, what resources will be used in fulfilling the objectives, what evidence will be collected to demonstrate that the objectives have been fulfilled, and how that evidence will be validated. In one corporation the contract is negotiated between the individual and the HRD staff; in another, it is between the individual and his or her supervisor; in another, it is between the individual and a team consisting of the supervisor, a representative of the HRD department, and a peer. Progress toward fulfilling the contract is monitored, and the evidence is validated by these same parties. Several corporations with a management-by-objectives program have incorporated the contracting process into the MBO process.

Several things happen when a systems approach is adopted. A heavier responsibility is placed on the line supervisors and managers for the development of their personnel than traditionally has been the case. This integrates the HRD function more closely with the operating function, and line supervisors and managers derive added self-esteem and job satisfaction from their developmental role once they have become adept at it.

Employees find that their personal and professional development are more integrated with their work life. A much wider range of resources for learning are available to them, and employees are more directly involved in planning and achieving their own development—adding to their self-esteem and satisfaction.

For HRD professionals, the systems approach represents a major shift in role. They are less concerned with planning, scheduling, and conducting instructional activities, and are more concerned with managing a system. One of their major

**Table 12-1.** Managing a System of Learning Resources

Resources	Strategies for enhancing their utilization
Scheduled training activities (courses, workshops, seminars)	Revise time schedule so as to make activities more accessible to employees  Revise programs so as to make them more congruent with adult learning principles  Train presenters in adult education methods
Line supervisors and managers (the most ubiquitous resources for day-in-and-day-out employee development)	Build responsibility for people development into their job descriptions  Build into supervisory and management training programs sessions on principles of adult learning and skills in facilitating learning  Give credit in personnel appraisals for performance as people developers
Libraries, media centers (printed materials, audiovisual and multimedia programs)	Arrange to be open during hours accessible to all employees  Make information about resources available to all employees  Provide help in using them
Individual employees, specialists, and technicians (many people in organizations have knowledge and skills others would like to learn)	Store this information in a data bank and make it available to employees through an educational brokering center  Include in the above data bank
Community resources (courses, workshops, specialists, etc., in colleges and universities, community organizations, professional associations, commercial providers, etc.)	

responsibilities is to serve as consultants to the line—a closer and more functional relationship, and one more central to the operation of the business.

How much more fulfilling a role!

## References

1. Lindeman, Eduard C., *The Meaning of Adult Education*, New Republic, New York, 1926.
2. Houle, Cyril O., *The Inquiring Mind*, University of Wisconsin Press, Madison, 1961.
3. Tough, Allen, *Learning Without a Teacher*, Ontario Institute for Education, Toronto, 1967.
4. Tough, Allen, *The Adult's Learning Projects*, 2d ed., Ontario Institute for Education, Toronto, 1979.
5. Peters, John M., and S. G. Gordon, *Adult Learning Projects: A Study of Adult Learning in Urban and Rural Tennessee*, University of Tennessee, Knoxville, 1974.
6. Penland, Patrick R., *Individual Self-Planned Learning in America*, Final Report of Project 475AH60058 under grant No. G007603327, U.S. Office of Education, Office of Libraries

- and Learning Resources. Unpublished manuscript, Graduate School of Library and Information Sciences, University of Pittsburgh, 1977. Available as ERIC document. Also available from the University of Pittsburgh bookstore under the title *Self-Planned Learning in America*.
7. Knowles, Malcolm S., *Self-Directed Learning: A Guide for Learners and Teachers*, Cambridge Book Co., New York, 1975.
  8. Havighurst, Robert, *Developmental Tasks and Education*, 2d ed., David McKay, New York, 1970.
  9. Wlodkowski, Raymond J., *Enhancing Adult Motivation to Learn*, Jossey-Bass, San Francisco, 1985.
  10. Houle, Cyril O., *The Effective Board*, Association Press, New York, 1960.
  11. Knowles, Malcolm S., *The Adult Learner: A Neglected Species*, 3d ed., Gulf Publishing Co., 1984.
  12. Knowles, Malcolm S., *Andragogy in Action*, Jossey-Bass, San Francisco, 1984.
  13. Boone, Edgar J., ed., *Serving Personal and Community Needs Through Adult Education*, Jossey-Bass, San Francisco, 1980.
  14. Brown, F. Gerald, and Kenneth R. Wedel, *Assessing Training Needs*, National Training and Development Service Press, Washington, DC, 1974.
  15. Davis, Larry N., and Earl McCallon, *Planning, Conducting, Evaluating Workshops*, Learning Concepts, Austin, TX, 1974.
  16. Knowles, Malcolm S., *The Modern Practice of Adult Education*, 2d ed., Cambridge Book Co., New York, 1980.
  17. McKenzie, Leon, and John McKinley, ed., "Adult Education: The Diagnostic Procedure," *Bulletin of the School of Education*, vol. 49, no. 5, Indiana University, Bloomington, 1973.
  18. Mager, Robert, and Peter Pipe, *Analyzing Performance Problems*, Fearon Publishers, Belmont, CA, 1970.
  19. Mager, Robert, *Preparing Instructional Objectives*, Fearon Publishers, Belmont, CA, 1962.
  20. Kirkpatrick, Donald L., *Evaluating Training Programs*, ASTD, Washington, DC, 1975.
  21. Scriven, N., ed., *Evaluation in Education*, McCutchan Publishing Corp., Berkeley, CA, 1974.
  22. Stufflebeam, Daniel, et al., *Educational Evaluation and Decision Making*, Peacock Publishers, Itasca, IL, 1971.
  23. Cronbach, Lee J., et al., *Toward Reform of Program Evaluation: Aims, Methods and Institutional Arrangements*, Jossey-Bass, San Francisco, 1980.
  24. Guba, Egon G., and Yvonne S. Lincoln, *Effective Evaluation: Improving the Usefulness of Evaluation Results Through Responsive and Naturalistic Approaches*, Jossey-Bass, San Francisco, 1981.
  25. Patton, Michael Q., *Utilization-Focused Evaluation*, Sage Publications, Beverly Hills, CA, 1978.
  26. Patton, Michael Q., *Qualitative Evaluation Methods*, Sage Publications, Beverly Hills, CA, 1980.
  27. Patton, Michael Q., *Creative Evaluation*, Sage Publications, Beverly Hills, CA, 1981.
  28. Patton, Michael Q., *Practical Evaluation*, Sage Publications, Beverly Hills, CA, 1982.

## Additional Reading

- Boud, David, Rosemary Keogh, and David Walker, eds., *Reflection: Turning Experience into Learning*, Nichols Publishing Co., New York, 1985.
- Brookfield, Stephen D., *Understanding and Facilitating Adult Learning*, Jossey-Bass, San Francisco, 1986.

- Cross, K. Patricia, *Adults as Learners*, Jossey-Bass, San Francisco, 1981.
- Houle, Cyril O., *The Literature of Adult Education: A Bibliographic Essay*, Jossey-Bass, San Francisco, 1982.
- Knox, Alan B., *Adult Development and Learning*, Jossey-Bass, San Francisco, 1977.
- Merriam, Sharan B., and Phyllis M. Cunningham, eds., *Handbook of Adult and Continuing Education*, Jossey-Bass, San Francisco, 1989.
- Peters, John M., et al., *Adult Education: Evolution and Achievements in a Developing Field of Study*, Jossey-Bass, San Francisco, 1991.
- Smith, Robert M., et al., *Learning to Learn Across the Life Span*, Jossey-Bass, San Francisco, 1990.