

Andragogy: Adult Learning And Education At Its Best?

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ABSTRACT

The andragogical model of adult learning and education developed by Malcolm Knowles, the basis for much of “adult learning theory”, is summarized and reviewed in terms of its assumptions, principles and recommended practices. By recasting the model as a theory with attendant hypotheses, it is then critiqued in terms of its theoretical adequacy and empirical support. Theoretically, the model is found wanting because it slights the full range of adult learning experiences, makes misleading distinctions between adult and child learners, minimizes individual differences between adult as learners, and does not adequately deal with the relationship between motivation and learning. Empirically, research testing the effects of andragogy provides inconclusive and contradictory outcomes. New directions for establishing a better theory of learning effectiveness are suggested.

Andragogy: Adult Learning And Education At Its Best?

It is now well established that adults continue their "education" after completing their normal school years (Cross 1981, Houle 1961, Peterson 1979). Indeed, whether done informally or formally, or whether at work, school or in the home, continued learning and education are a common experience for most adults. With increased leisure time and rapid economic and technological change, the prospects for increased adult education are strong. But while adults can be readily found in organized and/or intentional educational experiences of various kinds, it is not immediately apparent how the educational experience can best be organized and delivered to the adult learner. Two basic questions are at the center of the adult educational phenomenon:

1. Do adults have unique learning requirements and needs for which the educational process should be tailored in order to produce the best results?
2. If so, what are the best way(s) to provide educational experiences to adults?

Beginning in the late 1960's in the United States, the "andragogical" approach to adult education, championed by Malcolm Knowles, provided positive answers to both questions, and in the process, rose to dominate the field of adult education in terms of both its philosophy and technique.¹ Indeed, by some accounts, this approach became "adult learning theory" (Block, 1996). But after almost 40 years, what is the theoretical and empirical status of andragogy? This basic question is addressed in the following four sections. First, a consolidated description of the andragogical model is provided, followed by the second section that summarizes critical assessments of the theory. Third, the empirical research testing andragogical theory is reviewed. The final, fourth section draws conclusions and make recommendations about andragogy as a basis for a theory of adult learning.

Andragogy: Adult Learning and Education According to Knowles

While the term "andragogy" was coined over 150 years ago in Germany and was introduced into American parlance in the late 1920's by Eduard Lindeman (Davenport and Davenport 1985, 1986; Knowles, 1984; Savicevic, 1991), it was Malcolm Knowles who put "andragogy" on the modern adult education map. As Knowles (1968) puts it: "Andragogy (is) the art and science of helping adults learn ... based on certain crucial assumptions about the differences between children and adults as learners" (p. 351). Blending the basic tenets of various human growth and potential movements at the time (Boyer, 1984), andragogy rose to a prominent position among practitioners in the adult education field, making "...andragogy ... the primary model of adult learning for nearly thirty years...." (Merriam and Caffarella, 1999, p. 276). However, Knowles' developed his theory with little reference to psychological research (Block 1996), creating potential problems for model validity and accuracy.

For Knowles, andragogy rests on the assumed unique and distinctive characteristics of adults as learners; based on those characteristics, it prescribes a specific set of procedures that should be used for adult educational processes. Specifically, andragogy assumes that adults have different learning characteristics and requirements than children. Therefore, adult educational procedures must be different than the pedagogical procedures used to educate children. Initially, Knowles (1968) positioned andragogy in opposition to pedagogy, where pedagogy was best for children and andragogy, for adults. However, he modified his views in latter works (1979, 1980a, 1987) so that both methods are possible and can be used either with children or adults, depending on circumstances. I will refer to the initial formulation as the Better Theory (or Knowles I); the latter version will be the Depends Theory (or Knowles II). In either model, though, the assumptions about how adults were unique remained constant; what

changed was his view of the conditions under which his “andragogical” methods should be applied.

To understand andragogy, one must begin with what it means to be an "adult". Knowles offered two criteria for evaluating whether or not a learner should be considered an adult. First, the person occupies roles (such as parent or worker) that have been traditionally defined as adult roles. Second, the person's self-concept is that of adult: “He becomes an adult psychologically at the point at which his concept of himself changes from one of dependency to one of autonomy....

To be adult means to be self directing” (Knowles, 1968, p. 351); an adult "perceives herself or himself to be essentially responsible for her or his own life" (Knowles, 1980, p. 24). In the Better Knowles I model, andragogical educational practices should be used with adults, because the unique characteristics of adults require "different principles and techniques from those employed with children" (Knowles, 1980, p. 37). In short, adults are basically self-directed, and andragogy is the activating or enabling environment that best supports self-directed learning.

How are adults different than children? For Knowles (1968, 1972, 1973, 1980, 1984, 1987, 1998), there are six distinguishing characteristics of the adult learner. Note that the key assumptions of andragogy are posited as self-evident axioms that refer primarily to developmental and existential conditions of adulthood; other potential physiological, neurological (see Hill, 2001, e.g.), psychological or sociological factors that can affect learning are not included. The six basic assumptions are:

1. A self-concept of autonomy and self-direction. Aging and maturation change the child's self-concept of dependency and direction by others into the adult's self-concept of independence, and as a result, adults have a need to be self-directing. When people become adult, “they experience a deep psychological need to be perceived and treated by others as being capable for

taking responsibility for ourselves” (Knowles, 1984, p. 6.5). Thus, learner autonomy, power and control are key factors in the adult learning process.

2. A higher level of life background and experience. With age comes experience, a reservoir of common sense, and a body of beliefs, rules and background that adults want preserved and prized. Threats to a person's self-concept and understanding of how the world operates can lead to resistance, defensiveness or withdrawal from the learning process.

3. The need to understand the reasons for learning something. The rationale for what is learned and how it is learned should be clear to the adult learner. Teacher-imposed instruction is not acceptable. “It is seldom convincing for them to be told by someone (like the boss) that it would be good for them” (Knowles, 1987, p. 170).

4. A learning motivation based upon personal need. The adult's motivation to learn is derived from the developmental needs of the individual. “The adult ...comes into an educational activity largely because he is experiencing some inadequacy in coping with current life problems” (Knowles, 1972, p. 36). Further, “people become ready to learn something when they experience a need to learn it in order to cope more satisfyingly with real-life tasks or problems” (Knowles, 1980, p. 44). By implication, participation should be voluntary, a condition Knowles (1987) recognizes is not always possible.

5. A pragmatic orientation. Those things about which adults want to learn are the here-and-now, practical issues related to how to better run their lives. That is, adults want to be able to apply and use what they learn to be “able to better deal with some life problem about which they feel inadequate now” (Knowles, 1968, p. 386).

6. An internally driven motivation to learn. Adult participation in learning and educational activities is more a function of their personal needs and issues than externally imposed

requirements to participate (Knowles and Associates, 1984).

In summary, then, adults are assumed to bring distinctive needs and requirements to their organized learning activities for several reasons. Because they see themselves as self-directing, adults want to exercise power, influence and control over the learning experience. They want to preserve their sense of self and their understanding of the world; in part, this means prizing and building upon their large repertoire of personal experience. They want practical answers to real-life problems. As Newton (1977) puts it: "The adult as a learner is pictured as an autonomous, experience-laden, goal-seeking, 'now' oriented, problem-centered individual" (p. 362).

The Theory of Andragogy

Knowles' model of andragogy is constructed from two distinct domains of phenomena. First, it is a theory of how adults are distinctive as learners; it does not, though, describe a psychology of the learning process. Second, derived from this model of the adult as learner, it provides a set of guidelines or prescriptions for how to best organize and carry out educational experiences for adults. As a theory that promises to join these two domains, the andragogical model should identify both causal, independent variables as well as outcome or effect variables, and should then specify the relationships between them (Dubin, 1969). The basic theoretical assertion of andragogy is that by applying andragogical principles and practices, derived from the unique characteristics of adults as learners, certain outcomes will occur more or better than if those principles and practices are not used. However, Knowles does not operationally define what the outcome variable(s) of andragogy are; instead, outcomes are suggested and implied. Perhaps the closest he comes to describing what those outcomes are can be found in *Self-*

Directed Learning (1975):

...there is convincing evidence that people who take the initiative in learning (proactive learners) learn more things and learn better than do people who sit at the feet of teachers passively waiting to be taught....They enter into learning more purposefully and make use of what they learn better and longer than do the reactive learners. (Page 14)

Thus, the key contention of andragogical theory is that andragogy should lead to better learning. The problem is that “better” is not well defined. The following hypotheses are all possible interpretations. First, self-directed (andragogical) learners will be more motivated than a control or comparison condition. (Defining what the control or comparison condition presents another problem to the theory, as discussed in the next paragraph.) Second, self-directed (andragogical) learners will be more intentional or purposeful than a control or comparison condition. Third, self-directed (andragogical) learners will learn more than a control or comparison condition. Fourth, self-directed (andragogical) learners will make better use of what they learn than a control or comparison condition. Fifth, in other places (Knowles, 1989), Knowles implies that self-directed (andragogical) learners will be more satisfied with their learning experiences than a control or comparison condition.² In the Knowles II, Depends model, these basic postulates would remain the same but with the qualification that they would be mediated by or only hold true in certain conditions. Knowles did not provide a systematic statement of what those conditions would be, however. Instead, the recommendation is that the educator “check out which assumptions are realistic in a given situation” (Knowles, Holton, and Swanson, 1998, p. 69).

There are three difficulties remain at this point in the formulation of his theory. First, if educational practices, motivation, and learning are the key variables, what is the specific nature of their relationship? It would appear that the underlying effect of andragogy is on learner

motivation, and that improved motivation should lead to elevated learning outcomes. If so, the hypothesized relationships between andragogical practices, motivation, learning and, with Knowles II, other “conditions” needs much greater definition and specification. Second, the comparison or control condition is not clear. Is he comparing the effects of andragogy to adults who are in pedagogical education practices and/or to adults who may not be self-directed learners? Since adults are generally assumed to be self-directed learners, the former option seems more likely. Third, the outcome criteria are not clear. While “more” learning presumably means just that (and could be registered as higher average scores on a test, for example), “making better use” of what is learned is less clear. Does “better use” mean more retention over time, or greater transfer of learning or behavior change, and/or what? Of course, answers to these questions do not have to be mutually exclusive and could be combined.

Andragogy Operationalized: How It Works

There are four basic questions for structuring any learning experience (Knowles, 1987):

1. What content should be covered?
2. How should the content be organized?
3. What sequence should be followed in presenting the content?
4. What is the most effective method for transmitting this content?

Under a pedagogical approach, the teacher’s role is to answer and implement the answers to these questions. Under an andragogical approach, the teacher’s job is to design a process whereby the learners both help create their own answers to these questions as well as participate in their implementation. Certain *principles* (next) are the basis for creating *practices* and *procedures* (listed in the following section) that guide the organization and provision of

andragogical learning experiences. (The adult learning characteristics and needs being addressed by each principle are in parentheses.)

1. The adult learner must be able to define what they want to learn (autonomy, personal need, reasons, intrinsic motivation).
2. The plans for the learning program should be made jointly between "teacher" and "student" (autonomy, personal need, reasons).
3. The adult must be involved in the evaluation of the learning program (autonomy, intrinsic).
4. The climate of the learning program must be safe and non-threatening (experience).
5. The program should relate to and include the adult's existing experiences and cognitive structure (experience).
6. Learning activities should be experiential and "hands on" rather than passive and pedagogical (personal needs, pragmatic, experience).
7. Learning should lead to practical solutions to experienced problems. The curriculum should be problem-, rather than subject-, based (personal needs, pragmatic).
8. The proper role of the "teacher" is one of process facilitator and co-learner rather than content expert (autonomy).

Knowles translates these *principles* for adult education into the following *practices* and *procedures*.

1. Learners should be prepared for the learning program. This means informing the learner of the differences between being taught and learning on one's own, how to build learning relationships, how to identify learning resources, and the skills of self-directed learning (Knowles, 1984).
2. A climate conducive to learning should be created. While it is important to provide a climate that is physically comfortable, the real focus must be on creating a psychological climate of

safety, acceptance, trust and respect. This is a key responsibility of the facilitator.

3. A mutual planning procedure should be used that involves the learner in planning what the learning will cover. This is a “cardinal principle of andragogy” (Knowles, 1978, p. 115).
4. Diagnosing learning needs. One basic way to include the adult in planning involves the following two-step process. First, desired learning competencies or outcomes are identified, and second, discrepancies between those desired competencies and the learner's current abilities are noted. The result is a self-assessment of what the learner wants to learn.
5. Specifying learning objectives: The adult should be involved in establishing learning objectives. Learner input does not have to be the sole, determinative or final basis for defining objectives, however.
6. Designing the learning program: Again, the adult should be involved in selecting and planning the sequence and nature of learning experiences and resources used in the process.
7. Operating the program: Here, the teacher acts more in the capacity of a facilitator, resource person and mutual student than as independent expert. Knowles (1978) identified a number of specific actions that a teacher should perform in order to executing the role of facilitator, such as: creating the right mood or climate; helping participants clarify learning expectations and intentions; organizing and making available a wide range of learning resources; and reacting to student inquiries Socratically by asking questions rather than providing “expert” answers.

Table 1 outlines a comparison of the role of teacher in pedagogical and andragogical approaches to education.

Table 1 about here

8. Program evaluation: The learners should evaluate how well their learning outcomes were met, the adequacy of their learning as well as their progress with the material.

A unifying technique that integrates these practices and procedures is the learning contract (Knowles and Associates, 1984; Knowles, 1986). A contract captures learner goals and shows how those goals will be pursued and evaluated. A learning contract formalizes the underlying process; however, a contract is not essential for self-directed learning (Knowles, 1980).³

These principles do not have to be applied either invariantly or totally (Knowles, 1973, 1980, 1995). Even so, it is not clear to what extent any of these principles must be in place in order for an experience to be considered andragogical and not pedagogical. In particular, are there essential practices that are mandatory, while other practices, advised? The answer would seem to be “yes”. For example, a safe and non-threatening climate is a common recommendation for most educational programs, and it would be difficult to imagine any educational activity being successful that did not take into account what learners already know. Likewise, even though he contends that experiential or hands-on activities are more suitable or appropriate than the didactic methods of traditional pedagogy (Knowles, 1980), experiential activities can easily be part of pedagogically-oriented programs, too, and it is entirely possible for pedagogic programs to provide practical solutions through a traditional curriculum.

What does seem to be essential are those activities in which the learner is involved in identifying what they want to learn, in making plans for the program, and in evaluating the program. In order for these conditions to occur, the role of the "teacher" must be more that of process facilitator rather than content expert. For Knowles (in both I and II), andragogy is more defined by the issues of learner involvement in planning and control of the learning process. Thus, for the purpose of this review, the practices of planning (practice 3 above), diagnosing (4), specifying outcomes (5), designing (6), and evaluating (8) are taken as the essential features of

Knowles' andragogy. These practices can occur independently; they do not all have to occur together in the same program. That is, one can involve learners in planning but not in evaluation. Thus, presumably, there can be degrees of andragogical implementation. Regardless, one key element is that the teacher functions as a facilitator (7) and will be considered essential for defining the implementation of andragogy, too. All of these practices (3, 4, 5, 6, 7, 8) should be seen as necessary for andragogical learning conditions to exist, and if all are present in the same educational event, they will be considered sufficient for andragogical practice to be said to have occurred.

Andragogy Critiqued

Early critiques of the field of adult education (Hartree, 1984; Lindsay, 1984) point to problems of weak theory and poor research; both are present in Knowles' theory of andragogy. Several problems with the theory have already been noted, specifically the lack of clear specification of outcomes, and that it is more a prescriptive model for teaching adults than an statement of what is known about the psychology of adult learning. Grace (1996) notes that, for Knowles, adults are basically isolated learners, pursuing their own selfish interests. Each learner stands apart from any social, cultural or political context. In that same view, social institutions and historical circumstances have no impact on learner goals, opportunities, or practices. In short, Knowles' adult learner is one of "self-reliance and self-fulfillment in which private interests overshadow public ends" (Pratt, 1993, p. 20).

Beyond these concerns, five critical problems with the *theory* of andragogy can be noted.

1. Andragogical theory does not adequately reflect the full nature and range of adult learning experiences.

Andragogy does not adequately represent the typical experiences of adults in continuing education, particularly in vocational and occupational contexts (Day and Baskett, 1982). For example, in employee training programs, participation is typically required and not voluntary. Learning outcomes are established in advance based on a needs assessment process, and evaluations are conducted to assess the extent to which trainees have mastered those pre-established outcomes. The application of instructional systems design technique (see, e.g., Rothwell and Kazanas, 1992) is clearly antithetical to the andragogical premise of learner control over the planning and execution of learning experiences. In his study of university-based executive development programs, for example, Verlanger (1986) found that andragogical principles were used only rarely, and the principles that were used – experientially-based activities and supportive climates -- are not essential features (as defined earlier) of the andragogical model. Not used at all was learner input into the planning and design of the program. Verlanger concluded that andragogical “program planners have become involved in a closed sub-system of thought and belief about how professionals learn and have developed a body of literature (including andragogy) which is inconsistent with the on-the-job behaviors of professionals” (p. 146).

Consider also the literature on self-directed learning, apart from andragogy. Early research by Houle (1961) and Tough (1971) discovered that most adults continue to be quite active, albeit informal learners. The primary vehicle is the “adult learning project”, an intentional, self-planned and self-guided effort to learn about some topic of interest. These two pivotal studies ignited a number of replication studies in the 1970’s (Clardy, 1992) that found a fairly consistent pattern: about eight to nine of every 10 adults will undertake three to five learning projects per year. Projects consume up to 100 or more hours of time. Of course, as

might be expected, the incidence of self-directed learning projects will vary somewhat by age and occupation. An important point here is that many if not most self-directed learning projects occur apart from any formal, educational program. In general, then, andragogy is more situationally specific than universally applicable (Merriam and Caffarella, 1999).

2. The distinctions between adult and children as learners are faulty and misleading.

Andragogy is presumed to be a better instructional procedure for adults, because andragogical procedures supposedly better match the unique learning requirements of adults. To uphold this position, it is essential that the learning needs and preferences of adults be firmly established. However, it should not be assumed that adult learning processes are different from those of children. Indeed, Travis (1985) illustrates this point by noting the problems presented by disabled adults to this theory. Disabilities acquired during adulthood, for example, often may return an adult to a more dependent learning status. Here, andragogical principles should not be applied uniformly, but rather, educational planning should be geared to the specific needs and conditions of the disabled adult.

More to the point, Knowles' assumptions about how adults are unique in this regard can be challenged both logically and empirically. While adults may need to understand the reasons for learning something, it is possible that they may also allow and even trust educators to lead them through learning experiences *without* being informed of the rationale for those experiences. In the 1970's, "large group awareness training" programs, like Erhard Seminars Training (est), attracted multitudes of adults who were put through a variety of intimately personal and sometimes publicly humiliating activities on-command and without explanation (Pressman, 1993).

While adults may like pragmatic, "how to" answers, it is also possible that they can

appreciate knowledge as something intrinsically valuable, even if it has no instrumental use.

Missing from the image of the adult andragogical learner is simple curiosity. Adults may seek to learn something because it interests them or satisfies a pure joy of learning. Rossing and Long (1981) studied the relative importance of curiosity vs. relevance for 79 adult students in a university-based continuing education program. Even though respondents indicated that the perceived practical value of material to be learned was more important as a source of motivation to learn, curiosity was also a motivating factor.

That adults have a well-developed life experiences crystallized in a cognitive structure that should be acknowledged in educational settings is clearly important, but the actual significance of this point for educational purposes is uncertain. For example, an adult already knowledgeable about genealogy (a well-developed cognitive structure on the topic) who is attending a class in genealogy would present one unique instructional situation. But what about the same person attending a class in the basics of accounting, a topic in which she has no background? What relevance would life experience and well-developed cognitive structure have in that case?

The distinctive characteristics of adults as learners are the basis for the distinction between andragogy and pedagogy. Trying to bolster support for andragogical teaching methods means searching for evidence to support those distinguishing characteristics; this endeavor is unlikely to be unproductive (Merriam, 2001). Rachal (1983) noted that a less charged distinction -- between teacher-directed and student-directed learning -- has been around for some time. By using these terms, the problems associated with distinguishing between adult and child learning conditions could be avoided.

Yonge (1985) agrees that "the qualitative differences [in how adults and children learn]

are not enough to sustain an andragogy-pedagogy distinction" (p. 161). Even so, Yonge contends that the distinction between pedagogy and andragogy should be kept -- but based upon the phenomenological nature of the learning relationship. Specifically, the difference between pedagogy and andragogy is not based upon differences between the presumed learning capabilities of adult and child but rather from differences in the nature and purpose of the learning relationship. "A situation of pedagogy always involves an adult assisting a child to become an adult" (p. 162). There is an element of involuntariness to this relationship, and its purpose is to help the child mature. The essence of an andragogical relationship, on the other hand, is an adult helping an adult, the purpose being to help that person become more actualized and fully developed. The difference between andragogy and pedagogy may be useful to keep, albeit not for the reasons advocated by Knowles' theory of andragogy.

3. The implication that adults are basically the same in learning needs, motivations and requirements is wrong.

The clear implication in Knowles' andragogy is that all adults tend to share certain basic learning orientations, that they tend to enter learning situations with the same motivation, look for the same kind of outcome and react in much the same way to their learning experience. Yet there are likely to be distinct differences among adults in their desire, capability and readiness for learner-controlled instruction and self-directed learning (Long, 1998; Pratt, 1988). For example, while individuals may resist being placed in dependent learning positions because of their self-concept of autonomy and self-direction, they may also prefer to learn in a pedagogical manner for any number of reasons, including a realization that they do not know enough to direct their learning and/or because being taught pedagogically may simply be more efficient in terms of time and effort. Davenport and Davenport (1985b) found differences among adults on

learning orientations. Check (1984), for example, surveyed learner preferences among 154 adult students at the University of Wisconsin-Oshkosh. Of the 119 responses, fully half wanted the instructor to determine course content and set course objectives; 70% preferred having the instructor schedule daily class activities. Sheehan (1992) assessed the degree of andragogical learning preferences among two groups of university students: traditionals (average age 20 years) and non-traditionals (average 36 years); the latter group indicated a greater *but not exclusive* preference for andragogical approaches to learning. While not final, these studies do suggest that adults differ in their preferences for andragogical learning practices and procedures. In short, adults participate in educational programs with different motives and preferences for learning, not with an invariant andragogical outlook.

Indeed, a substantial amount of adult education research in the 1980's surveyed reasons reported by adults for participating in educational programs. These studies followed on Houle's (1961) early research that identified three main reasons for adult participation: learning is pursued either as an instrumental activity to help the adult accomplish a goal, or as a means for social activity for being with others, or is pursued for the intrinsic value of knowing. Boshier and Collins (1985) compiled the responses of more than 13,000 adults, drawn from 54 different survey files, to the Boshier Education Participation scale (a 40 item Likert-type scale asking about learning orientation). Analysis revealed three clusters of responses that approximated Houle's initial categories. Merriam (1988) noted that adult learner motivation is the most heavily researched topic in adult education, and that the findings have been remarkably consistent. Clearly, the reasons for participating in adult educational activities are many. The more plausible assumption, then, is that there are individual differences among adult learners in terms of their needs for structure and direction and their differing abilities to become

self-directing. Those needs can vary with age and by subject matter.

4. Autonomous self-directed learning is a special, not universal condition.

Chene (1983) questions whether autonomy in learning is a viable premise on which to base a theory of learning. An andragogical learning experience, seeking to provide maximum autonomy, fundamentally assumes that adults are qualified and capable of determining what and how they want to learn, and that each adult learner is the final judge of the value of the learning. The danger in this position is that any and all learning is seen as equal in value: whatever one person learns is as valid and worthwhile as what anyone else learns. In other words, there is a radical individualizing, solipsistic potential within andragogy.

For Chene, the andragogical position is deficient in three ways. First, adults in educational programs about which they know little decide cannot be expected to determine what learning activities and resources are appropriate and suitable for the tasks at hand. Beginning learners in particular are unable to plan and evaluate learning in a topic about which they are relatively unprepared. Second, while knowledge is socially created from meaningful experience, knowledge also becomes “objectivated” (Berger and Luckman, 1965). Disciplines based on science (like medicine) or professional practice (such as law) exist as a body of knowledge to be comprehended and understood by learners. In these domains, learning must reach some benchmarked level or standard; that is, evaluative decisions about what has been learned should not be left to student self-assessments. In short, all “learning” is not equal in the eyes of each learner. Finally, regardless of the extent to which a program leader tries to act as a facilitating co-learner, the function of teacher as judge is often still required. In this capacity, the teacher’s function is to validate or affirm the quality and degree of what the person has learned. For Chene, educational practice is about more than just motivational readiness: criteria of learning

should be met, and the acquisition of new abilities should be confirmed -- both of which require the presence of an instructor in a mode of judge or evaluator.

5. The hypothesized relationship between motivation and learning is weak.

Mouton and Blake (1984) accept the point that motivation and learning effectiveness are correlated; however, as they see it, the relationship can be negative, not positive as Knowles assumes. Further, Mouton and Blake accept that motivation is an important concern in adult education, agreeing that adults do want to be self-directing. In their view, both pedagogy and andragogy affect motivation and learning, albeit in different ways. The relationships between the two instructional approaches and their effects on motivation and learning can be seen in Table 2.

Table 2 about here

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They argue that pedagogy creates a poor motivating climate for learning, because it keeps the teacher in a full authority position, irritating the adult's need for self-direction, even though learning occurs through the teacher's expertise. The better motivation derived from andragogy (due to the reduction in the authority position of the teacher), on the other hand, comes at the expense of reduced content. But, "in the [andragogical] effort to transfer responsibility to students, the teacher cannot simply abandon students to their insufficient resources" (p. 6). What andragogy gains in motivation it loses in content and presumed learning quality. Their solution to this paradox is a synthesis of both models, proposed as yet a third approach to adult education which they call synergogy or "working together for shared teaching" (p. xi). A synergistic approach seeks to avoid the demotivating conditions of pedagogy and the denuded substance of andragogy through the use of self-directing learning teams; they outline four learning designs

that provide depth of information through highly participative, self-directed learning activities.⁴

In summary, as a theory of adult education, andragogy suffers from a number of problems in explaining learning effectiveness for adults. It does not adequately cover the full range of learning and educational experiences that adults face. The differences between adults and children as learners are incomplete and dubious. It discounts those motivations to learn based on anything other than pragmatic application, and while andragogy may produce heightened learner motivation, improved motivation comes with a price of lowered substantive content and learning. It implies a uniformity to adult learner needs and motivation that masks important individual differences between learners. It imputes to adults more capability for and interest in self-directed learning than is likely. The radical subjectivism implicit in andragogical theory makes any and all learning of equal value, a position that slights the “objective” nature of knowledge and the learning required to master it. Particularly in occupational contexts, teachers serving as experts, not facilitators, are needed to certify that learning has in fact reached the level of acceptable standards.

Andragogy: The Empirical Assessment

Knowles’ andragogical theory can be assessed empirically in two ways. First, are the assumptions of how adults are unique learners correct, complete and important? The adequacy of these assumptions, including research bearing on them, has just been reviewed and found wanting. Second, the major test of andragogy as a theory is in terms of whether the prescribed methods of educational practice actually work as predicted. That is, what are the effects of using andragogy in practice? Do andragogical methods actually produce better learning results as predicted?

A number of studies have tested this issue. The available literature on andragogy was examined along with searches in several electronic data-bases to identify studies of andragogical practices and various outcomes. Screening criteria included the following standards:

1. At least some of the subjects included in the research must be adults. Studies using only children or adolescents were excluded.
2. Even though the predicted outcomes of andragogical education are not specified clearly, a dependent variable of "learning" or achievement had to have been measured.
3. The preferred research design should be experimental (Rachal, 1994). Minimally, there should be some comparison or control condition. Pre-experimental or quasi-experimental studies were included to the extent that they met the other criteria.
4. Finally, the essential features (as noted earlier) of the andragogical method must be present in some degree in at least one of the experimental conditions.

Given this framework, research on the effects of andragogy are often bedeviled by serious problems. First, as already discussed, there are difficulties in operationalizing andragogical theory for research purposes. Reported "andragogical" studies may not include all "essential" elements or may not include any.⁵ Second, studies often must use quasi-experimental, non-randomized designs; the threats to validity from such designs include pre-existing differences, history, and testing, among the more obvious. Third, andragogy is supposedly a method that rules out the use of traditional instructor designed and administered tests. Yet it only by the use of standardized tests that effects on learning can be accurately and reliably measured for comparison purposes.⁶

These problems can be seen in Rachal's (1994) review of the research literature on andragogy. He looked at 18 studies, mostly unpublished dissertations, that purportedly tested the

relative effectiveness of andragogical methods. Without a clear definition of what an andragogical treatment includes, any number of studies can claim to test andragogy even though they may not actually do so. For example, Rachal included the study by Richardson and Birge (1995) that compared an “andragogical” university class in physiology with a more traditional pedagogical approach to the same course. The “andragogical” class still used 75% of class time in “didactic teacher-centered lecture format”; the remaining time was spent in group discussions of instructor-selected topics. Students were required to write essays rather than take the multiple-choice exams of the controls. There were no differences in learning, although students liked the “andragogical” class better. But in this study, the essential features of andragogy as argued here -- student input or control over to what learn and how – were missing. Indeed, this study was not a fair test of andragogical effectiveness, because it was not clear that andragogical principles were actually being tested.

The review here will concentrate on the experimental or quasi-experimental studies that manipulated some or all of the critical features of andragogical methods in educational programming with adults. Table 3 provides a summary of the studies reviewed here.

Table 3 about here

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Several non-experimental studies provide suggestive findings. In a series of studies on the effects of programmed instruction in various technical training courses, Mager and Clark (1963) essentially used an andragogical approach in allowing students to control their progress through the curriculum. Compared to the prior training programs, learner controlled instruction seemed to improve motivation and learning. McKeachie, Lin, Moffet, and Daugherty (1978) identified the teaching styles used by 21 teachers in University of Michigan undergraduate

introductory psychology courses. Both student motivation to learn about psychology and student learning achievement in the course were measured. Four kinds of teaching styles were identified: expert, authority, facilitator, person. While the facilitator and person styles (arguably andragogical in nature) were associated with greater motivational impacts, there were no significant differences in learning among the various styles.

Conti (1985) used a different design to test achievement (learning) in terms of "teaching style". He had a sample of twenty-nine teachers of adults complete a self-report inventory that measured their teaching style. These teachers taught adult basic education, G.E.D. and English as a second language courses in south Texas. The teachers provided the data on student achievement. The teachers reported favoring a pedagogical orientation. Further, the more the pedagogical orientation, the better the student achievement, especially at the G.E.D. level. According to Conti, G.E.D. students are very goal-oriented and the pedagogical approach seemed to worked best for them.

Beder and Carrea (1988) offered all the teachers in a larger New Jersey adult education program the option to attend a 9-hour training program on andragogical teaching principles. The training included how to use andragogical methods to determine learner needs, involve students in planning, and apply self-directed learning. All teachers returned to their teaching duties and data were collected at the end of the courses. While the andragogical-based classes had better attendance, there were no differences between groups on participant evaluations of the instruction received.

Stronger evidence can be found in the studies that tested the effects of andragogical methods under more controlled experimental conditions. Contrary to prediction, the following studies found that andragogical methods were no better— indeed, were often worse — than

traditional pedagogical methods in learning achievement. Early research on the basic question looked for differences between teacher-centered and student-centered programs. For example, DiVesta (1954) tested the effects of instructor-centered and student-centered approaches to teaching on learning achievement tests, attitudes about leadership and behaviors in a 20-hour human relations training program for 118 Air Force personnel. While not a test of andragogy *per se*, the student-centered program included many of the elements of andragogical practice, including extensive student involvement in planning and carrying out learning activities, experiential learning, individual problem focus and extensive peer interaction. Both methods produced more learning, attitude and behavior change than the control group. However, there were no significant differences in learning between the two instructional approaches, although the instructor-centered program did tend to produce more learning and change than did the student-centered program.

A similar research study was reported by McLoughlin (1971). Subjects were participating in an extended Civil Defense Staff training program. While subjects for the experimental and control groups were not randomly selected, there were no major pre-treatment differences between samples, nor was any systematic selection factor identified, and sample equivalence was assumed. The experimental groups were fully involved in planning their training and the controls were not. Subjects were measured in terms of attitude about the program and in terms of learning. While the experimental group scored significantly higher on attitude (satisfaction) scores, again there was no significant differences in learning between the treatment and control groups (indeed, the control group again scored slightly higher on learning). "No evidence was found to support the notion that sharing the decision on course content and design ... will produce a measurable increase in achievement" (p. 34).

Rosenblum and Darkenwald (1983) studied the effects of andragogy on adults in a supervisory training program for nurses. An experimental group was included in program planning during the first session using a nominal group technique; the control group simply received the training that had been designed by the treatment group. There were no meaningful differences in either learning or in satisfaction as a result of participation in the learning design. The control group scored slightly higher on learning than the experimental (andragogical) group. Thomas and Klein (1994) randomly assigned 71 managers from a Northern Ohio hospital into four groups who were involved in 8 3-hour supervisory training programs. The two experimental groups were given a 15-minute briefing on student participation. While the subjects in the experimental group reported higher levels of participation, there were no differences in learning, participant reactions or transfer based on level of program participation.

Other studies using similar research designs found that andragogical programs producing more learning than pedagogical counterparts. Cole and Glass (1977) used a randomized, pre- and post-test only experimental design with a control group; 18 employees in a Patient Care training program in a North Carolina hospital participated. The members of the experimental group participated in pre-course diagnosis, planning and design; the control group took the course established by the first group several months later. Both trainee attitudes about the program as well as learning achievement (measured at the conclusion of the program and again one month after the completion) were assessed. At the conclusion of the program, the andragogical, participation group showed significantly more learning but this advantage did not last a month. There were no differences in attitudes about the subject matter, although participants in the andragogical group had a significantly better attitude about the course. Working with 69 foreign students, Pine (1980) randomly assigned them to either participative

design groups or control groups. Participative groups scored significantly higher on both measures of learning and attitudes about the program. Madriz (1987) compared andragogical and pedagogical approaches in in-service education among 90 teachers in Venezuela. Both learning achievement scores and satisfaction attitudes were higher for members of the andragogical programs.

In summary, the research results are very inconsistent. Studies tend to show that andragogical approaches to adult learning and education often do not perform as predicted. The initial Better theory (Knowles I) predicts that andragogical methods will invariably lead to better learning than pedagogical methods for adults; this hypothesized relationship is not supported by the research. The Depends Knowles II version predicts better learning under certain conditions; while some studies find andragogical gains over other approaches, it is not clear when or why these differences exist. In general, the findings from available studies on the effectiveness of this adult educational technique are weak and inconclusive at best. Indeed, the evidence suggests that andragogical approaches are, as often as not, no better than and often less effective than the more traditional pedagogical alternative when it comes to learning. Likewise, the effects of andragogical programs on affective attitudes about the program are inconsistent. There was some evidence that andragogical programs improved learner motivation. However, this finding is limited by the small number of studies assessing motivation.

A next step in empirical assessment of andragogy would be to conduct a meta-analysis of the research. Such analysis should include a more comprehensive search for research studies. It would be essential to correctly code the studies in terms of treatment interventions for the exact nature of the andragogical treatment(s) used, as well as any distinguishing conditions (like topics covered, settings, experience levels of participants, etc.). It would also be useful to examine the

kind of learning measures used and whether those levels are differentially impacted. For example, using Bloom et al.'s (1956) hierarchy of learning objectives, would andragogical practices produce differences between learning at the basic rote knowledge level and learning at the highest synthesis or evaluation levels?

So we are left with this rather curious situation: the theory is dubious but still seems to work some of the time. That is, the method can be as good as traditional pedagogical methods in learning outcomes and may lead to higher participant satisfaction in some cases, but in other situations, those outcomes are reversed. It would appear that something is going on, but whatever it is cannot be explained by Knowles' model. If this latter point is true, so-called "adult learning theory" as embodied by andragogy is due for significant revision. Explaining when and why andragogy as a theory is wrong will move us one step further to understanding what approaches are right. The concluding section takes up this issue in terms of directions for future research.

Summary and Conclusions: Andragogy and Adult Education

By the latter third of the Twentieth Century, we know that adults not only can but do continue learning in one way or another after completing their compulsory education. The discipline of adult education emerged to track and explain this phenomenon. By the 1970's, Malcolm Knowles' model of andragogy became the prevailing paradigm of theory and practice. Knowles argued that andragogy is the method of choice for educating adults because it more adequately addresses the distinctive learning needs and requirements of the adult learner. Unlike the teacher-controlled classroom, the andragogical learning experience is one in which "teacher" becomes a learning facilitator and co-learner with the "student" as an equal partner in the

learning process. According to the theory, andragogical methods, by providing autonomy and actively involving adults in this learning process, should produce more and/or better learning for the adult participants than would the traditional pedagogical approach.

Yet, as presented here, a critical examination of the theory and research finds andragogical theory lacking on several counts. To begin with, there are problems with the model itself. Key assumptions about how adults are different than children are questionable. The model itself is underspecified, with neither its essential treatment components nor its key outcomes clearly identified. Further, andragogical methods just do not seem to work as predicted; that is, they do not seem to yield the implied promised fruits of more or better learning. In short, as a foundation for adult educational theory and practice, it is time to scrap Knowles' andragogical theory in order to reconstruct a more accurate and complete model of how people learn and, in turn, how to help them succeed in that endeavor. Notable efforts have been underway for some time (Jonassen and Grabowski, 1993; Merriam and Cafferella, 1999). The question becomes how to proceed with the reconstruction. Can we learn anything from Knowles' work that can guide us to improved theory and practice? The following discussion attempts to draw the lessons from Knowles' work that can be useful in reconstruction.

First, almost by definition, a study of *adult* learning and education implies that the adult is somehow or other different than children and these differences are critical for defining educational practice. As already covered, this approach is misleading in several ways. For example, in Knowles' model, the presumption is that something happens in the course of becoming an adult that transmutes a child's learning interests and capacities into an entirely new state. Those differences are defined more in existential than psychological or social terms. Continuity and even growth in the same learning motivations, capacities and behaviors are not

factored in. But even further, his assumptions about adult differences have questionable standing as universal descriptors of adult learners. It's not that the assumptions are necessarily right or wrong; indeed, they can be both, depending. It is more helpful to understand what kinds of characteristics are operating for specific individuals in specific learning situations. Those characteristics are likely to vary by individual and by situation. Blanket, universal claims of generic adult learning distinctiveness are doomed to failure. Thus, one important lesson from Knowles' work is that a model that *assumes* static and universal differences between adults and children is going to be ineffective.

Knowles did not adequately account for the learning process. Had he concentrated on how people (adults or children) learn, he might have been able to make more of an advance. As is known now, a number of individual difference factors affect the quality and nature of learning. Jonassen and Grabowski (1993) have catalogued some of them as cognitive abilities (intelligence), cognitive controls (such as field dependence/independence or cognitive complexity), cognitive styles (visual or verbal preferences), learning styles, personality traits, and prior knowledge. Other factors include learner mastery or performance orientations (Elliott, McGregor and Gable, 1999) or self-efficacy beliefs (). In short, more attention should be paid to diagnosing individual differences in learning capabilities and expectations using important and valuable factors that actually impact learning. In this way, distracting differentiations between adults and children can be avoided. Indeed, an important need is to develop a standard battery or diagnostic procedure for assessing learners.⁷ Thus, a second lesson is that differences among (adult) learners are both likely and important to understand. But those differences may involve factors other than and/or in addition to his assumed differences between children and adults (see Holton, Swanson and Naquin, 2001, for a discussion of these issues,

made in the context of andragogical theory).

Knowles did not do an adequate job identifying the types of learning situations in which adults may find themselves. In Knowles I, all adult learning events are considered essentially the same. But this is not the case: there can be highly individualistic and autonomous self-directed learning activities well as organized, group-based programs, offered on a formal, for-credit or for-licensure basis, or an informal basis; they can be work-related or personally-based; they may be voluntary or mandatory. This neglect of the range of educational and learning experiences truncates the reach of his model. Thus, third, a new theory must account for the full range of learning and educational situations in which adults might find themselves. Situations can be defined in terms such as the demands placed on learners, roles played by learners and “instructors”, resources available, and the learning opportunities that are typical of each situation.

Because of these weaknesses, he was not able to provide a more nuanced or comprehensive approach to educational practice. That is, by not seeing differences between situations or between adults, he could not identify what practices would best match what situations and/or with what learners. There is just too much variability in both situations and adults for one “size” of educational practice to fit all. At least two solutions to this problem are possible. First, contingent models of instruction propose to match different forms of instruction to learner characteristics (Grow, 1991; Pratt, 1988). In practice, this approach may be an impossible task of adapting instruction each learner. So, alternatively, it may be possible to expand learners’ repertoire of preferences and styles so that they can succeed by more flexibly adapting to different learning conditions and situations. Thus, a fourth lesson must be that any new theory should attempt to inform educational practice by showing which instructional or

learning practices may be appropriate in which situations.

In addition, Knowles andragogical model and its critiques have suggested certain variables that deserve more specific testing. For example, the andragogical model melds together two factors – learner autonomy and problem-based, experiential learning – into one undifferentiated procedure. But these factors can be treated independently. The basic question becomes: does either factor have its own unique main effects on either learning, motivation to learn, or participant satisfaction with the process? Is there an interaction effect? A basic factorial design could help clarify relationships between the two practices of autonomy and learner control and experiential activities on various dependent outcomes.

Malcolm Knowles was a pioneer in surveying and plotting the adult learning and educational terrain in the United States. Now, it's clear that his map is not as good a representation as possible, and that a new map is needed. We need less of a theory of *adult education* and more of a theory of *learning effectiveness*, recognizing that adults may create unique challenges, not because they are necessarily different than children, but by virtue of the capabilities and limitations they develop and accumulate over the years and across a variety of learning tasks and situations that make each person unique and distinctive. We can develop a better map by learning from his early efforts.

List Of References

- Beder, H. And Carrea, N. (1988). The effects of andragogical teacher training on adult students attendance and evaluation of their teachers. *Adult Education Quarterly*, 38, 2, 75-87.
- Berger, P. and Luckman, T. (1965). *The social construction of reality*. Garden City, NJ: Doubleday Anchor.
- Block, KK. (1996). What is adult learning? Course design issues in educational psychology. ERIC ED 396 159.
- Bloom, BS, Engelhart, MD, Furst, EJ, Hill, WH, and Krathwohl, DR. (1956). *Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain*. New York: David McKay Company.
- Boshier, R., & Collins, JB. (1985). The Houle typology after 25 years: a large-scale empirical test. *Adult Education Quarterly*, 36, 113-130.
- Boyer, D.L. (1984). Malcolm Knowles and Carl Rogers: a comparison. *Lifelong Learning*, 7, 4, 17-20.
- Carter, J.H. (1987). Participatory training: separating fantasy from reality. *Training*, 46-50.
- Check, J.F. (1984). Teaching learning preferences of the adult learner. *Education*, 105, 1, 107-112.
- Chene, A. (1983). The concept of autonomy in adult education: a philosophical discussion. *Adult Education Quarterly*, 34, 1, 38-47.
- Clardy, A.B. (1992). *Vocationally-oriented self-directed learning projects (VO SDLP's): an exploratory study of the types of VO SDLP's and the organizational and individual factors affecting their occurrence*. College Park, MD: Ph.D. Dissertation, University of Maryland.
- Cole, J.W., Jr., and Glass, J.C., Jr. (1977). The effects of adult student participation in program planning on achievement, retention, and attitude. *Adult Education*, 27, 2, 75-88.
- Conti, G. (1985). The relationship between teaching style and adult student learning. *Adult Education Quarterly*, 35, 4, 220-228.
- Cross, P. (1981). *Adults as Learners*. San Francisco: Jossey Bass.
- Davenport, J. (1987). Is there any way out of the andragogy morass? *Lifelong Learning*, 11, 3, 17-20.
- Davenport, J., & Davenport, J.A. (1984). Andragogical-Pedagogical orientation and its

- relationship to selected variables among university students. Paper presented at Rocky Mountain Educational Research Association Conference.
- Davenport, J. & Davenport, J.A. (1985a). A chronology and analysis of the andragogy debate. *Adult Education Quarterly*, 35, 3, 152-159.
- Davenport, J. & Davenport, J.A. (1985b). Andragogical/pedagogical orientations of adult Learners. *Lifelong Learning*, 9, 1, 6-8.
- Davenport, J. & Davenport, J.A. (1985c). Knowles or Lindeman: would the real father of American andragogy please stand up? *Lifelong Learning*, 9, 3, 4-5.
- Day, C., & Baskett, H.K. (1982). Discrepancies between intentions and practice: reexamining some basic assumptions about adult and continuing professional education. *International Journal of Lifelong Education*, 1, 2, 143-155.
- DiVesta, F.J. (1954). Instructor-centered and student-centered approaches in teaching a human relations course. *Journal of Applied Psychology*, 38, 5, 329-335.
- Dubin, R. (1969). *Theory Building*. New York: The Free Press.
- Elliott, AJ, McGregor, HA, and Gable, S. 1999. Achievement goals, study strategies, and exam performance: a mediational analysis. *Journal of Educational Psychology*, 91, 549-563.
- Feuer, D. and Geber, B. (1988). Uh-oh, seconds thoughts about adult learning theory. *Training*, 25, 12, 31-39.
- Gelfand, B. and associates. (1975). An andragogical application to the training of social workers. *Journal of Education for Social Work*, 11,3, 55-61.
- Godbey, G.C. 1978. *Applied Andragogy: A Practical Manual for the Continuing Education of Adults*. ERIC ED 192071.
- Grace, AP. (1996). Striking a critical pose: andragogy – missing links, missing values. *International Journal of Lifelong Education*, 15, 5, 382-392.
- Grow, G.O. (1993). In defense of the staged self-directed learning model. *Adult Education Quarterly*, 44, 2, 109-114.
- Hartree, A. (1984). Malcolm Knowles' theory of andragogy: a critique. *International Journal of Lifelong Education*, 3, 3, 203-210.
- Hatcher, T.G. (1997). The ins and outs of self-directed learning. *Training and Development*, 51, 2, 35-39.
- Hill, LH. (2001). The brain and consciousness: sources of information for understanding adult

- learning. *New Directions for Adult and Continuing Education*, 89, Spring, 73-80.
- Holton, EF, Swanson, RA, and Naquin, SS. (2001). Andragogy in practice: clarifying the andragogical model of adult learning. *Performance Improvement Quarterly*, 14, 1, 118-143.
- Houle, C.O. (1961). *The Inquiring Mind*. Madison: University of Wisconsin Press.
- Jonassen, DH, and Grabowski, BL. (1993). *Handbook of Individual Differences, Learning and Instruction*. Hillsdale, NJ: Erlbaum.
- Knowles, M.S. (1968). Andragogy, not pedagogy. *Adult Leadership*, 16, 10, 350-352, 386.
- Knowles, M.S. (1972). Innovations in teaching styles and approaches based upon adult learning. *Journal of Education for Social Work*, 8, 2, 32-39.
- Knowles, M.S. (1975). *Self-Directed Learning. A Guide for Learners and Teachers*. Chicago: Follett.
- Knowles, M.S. (1978). *The Adult Learner*. Houston, Tx: Gulf Publishing. (second edition).
- Knowles, M. S. (1979). Andragogy revisited Part II. *Adult Education*, 30, 1, 52-53.
- Knowles, M.S. (1980). *The Modern Practice of Adult Education*. Chicago: Follett Publishing. (revised edition).
- Knowles, M.S. (1980). How do you get people to be self-directed learners? *Training and Development*, 34, 5, 96-99.
- Knowles, M.S. (1982). Innovations in teaching styles and approaches based upon adult learning. *Journal of Education for Social Work*, 8, 2, 32-39.
- Knowles, M.S. (1984). Adult learning: theory and practice. In L. Nadler (ed.), *The Handbook of Human Resource Development*. New York: John Wiley and Sons. Pages 6.1-6.23.
- Knowles, M.S. (1986). *Using Learning Contracts*. San Francisco: Jossey Bass.
- Knowles, M.S. (1987). Adult learning. In R.L. Craig (ed.), *Training and Development Handbook*. New York: McGraw Hill. Pages 168-179 (3rd ed.).
- Knowles, M.S. (1989). *The making of an adult educator*. San Francisco: Jossey Bass.
- Knowles, M.S. and Associates (eds). (1984). *Andragogy in Action, Applying Modern Principles of Adult Learning*. San Francisco: Jossey Bass.
- Knowles, M., Holton, E.III, & Swanson, R. (1998). *The Adult Learner* (5th ed.). Houston, TX:

Gulf Publishing.

- Kowalski, T.J. (1984). Research and assumptions in adult education: implications for teacher preparation. *Journal of Teacher Education*, 25, 3, 8-10.
- Lindsay, M. (1984). Teacher effectiveness in adult education. *Journal of Teacher Education*. 25, 3, 2-7.
- Long, D.G. (1990). *Learner Managed Learning*. London: Keagan Page.
- Long, HB. (1998). Understanding adult learners. In MW Galbraith (ed.). *Adult Learning Methods: A Guide for Effective Instruction*. Malabar, FL: Krieger Publishing. 2nd Edition. Pages 21-35.
- Madriz, L. (1987). The relative effectiveness of two different approaches to in-service training of primary teachers in Venezuela. *DAI*, 48, no. 03A: 0539.
- Mager, R.F. and Clark, C. 1963. Explorations in student-controlled instruction. *Psychological Reports*, 13, 1, 71-76.
- McKeachie, W.J., Lin, Y.G, Moffet, M.M., & Daugherty, M. (1978). Effective teaching: facilitation v. directive style. *Teaching of Psychology*, 5, 4, 193-194.
- McLoughlin, D. (1971). Participation of the adult learner in program planning. *Adult Education*, 22, 1, 30-35.
- Merriam, S.B. (1987). Adult learning and theory building: a review. *Adult Education Quarterly*, 37, 4, 187-198.
- Merriam, S.B. (1987). Andragogy and self-directed learning: pillars of adult learning theory. *New Directions for Adult and Continuing Education*, 89, 3-13.
- Merriam, S.B. (1988). Finding your way through the maze: a guide to the literature on adult learning. *Lifelong Learning*, 11, 6, 4-7.
- Merriam, S.B., & Caffarella, RS. (1999). *Learning in Adulthood, A Comprehensive Guide*. San Francisco: Jossey Bass. (second edition).
- Meyer, S.L. (1977). Andragogy and the aging adult learner. *Educational Gerontology*, 2, 2, 115-122.
- Mouton, J.S., & Blake, R.R. (1984). *Synergogy*. San Francisco: Jossey Bass.
- Newstrom , J.W. and Lengnick-Hall, M.L. (1991). One size does not fit all. *Training and Development*, 45, 6, 43-47.

- Newton, E.S. (1977). Andragogy: understanding the adult as learner. *Journal of Reading*, 20, 5, 361-363.
- Peterson, R.E. and Associates. (1979). *Lifelong Learning in America*. San Francisco: Jossey Bass.
- Pine, W.S. (1980). The effect of foreign adult student participation in program planning on achievement and attitude. *DAI*, 41, no. 06A: 2405.
- Pratt, D.D. (1988). Andragogy as a relational construct. *Adult Education Quarterly*, 38, 3, 160-172.
- Pratt, DD. (1993). Andragogy after twenty-five years. *New Directions for Adult and Continuing Education*, 57, 15-23.
- Pressman, S. (1993). *Outrageous Betrayal, The Dark Journey of Werner Erhard from EST to Exile*. NY: St. Martins Press.
- Rachal, J. (1983). The andragogy - pedagogy debate: another voice in the fray. *Lifelong Learning*, 6, 9, 14-15.
- Rachal, J. (1994). Andragogical and pedagogical methods compared: a review of the experimental literature. ERIC ED 380 566
- Richardson, D. & Birge, B. (1995). Teaching physiology by combined passive (pedagogical) and active (andragogical) methods. *Advances in Physiology Education*, 13, 1, s66-s74.
- Rosenblum, S. & Darkenwald, G.C. (1983). Effects of adult learner participation in course planning on achievement and satisfaction. *Adult Education Quarterly*, 33, 3, 147-153.
- Rossing, B.E., & Long, H.B. (1981). Contributions of curiosity and relevance to adult learning motivation. *Adult Education*, 32, 1, 25-36.
- Rothwell, W.J., and Kazanas, H.C. (1992). *Mastering the Instructional Design Process: A Systematic Approach*. San Francisco: Jossey Bass.
- Savicevic, D.M. (1991). Modern conceptions of andragogy: a European framework. *Adult Learning – EuropeSource: Studies in the Education of Adults*, 23, 2, 179-202.
- Sheehan, E.P. (1992). Learning styles of traditional and nontraditional university students. *College Student Journal*, 26, 4, 486-490.
- Slavin, R.E. (1980). Cooperative learning in teams: the state of the art. *Educational Psychologist*, 15, 2, 93-111.
- Thoms, P. and Klein Thompson, HJ (1994). Participation and evaluating outcomes in

- management training. *Human Resources Development Quarterly*, 5, 1, 27-39.
- Tindal, C.R. and Doyle, P. (1987). Trainers or trainees - who dominates? *Training and Development Journal*, 41, 5, 64-71.
- Tough, A. (1971). *The adult's learning projects: a fresh approach to theory and practice in adult learning*. Toronto: Ontario Institute for Studies in Education.
- Travis, A.Y. (1985). Andragogy and the disabled adult learner. *Lifelong Learning*, 8, 8, 16-20.
- Verlanger, E.G. (1986). The use of principles of adult education in six university executive programs. DAI 47/04A, p. 1157. Publication AAC8611706
- Yonge, G.D. (1985). Andragogy and pedagogy: two ways of accompaniment. *Adult Education*, 35, 3, 160-167.

Table 1. The Role Of The Teacher In Pedagogy And Andragogy

FUNCTION	PEDAGOGY	ANDRAGOGY
Program Planning	Makes both content and process decisions unilaterally	Works with students to mutually agree to content and process
Primary Duty of Teacher	Provide and manage the content of the course	Guide the learning process
Assumptions about the Learner	Insufficient background and ability to learn content without teacher	Valuable experience and ability allow active learner involvement
Participants	Captive audience and compulsory attendance	Voluntary attendance
Affective reactions	Learner feelings about experience not important	Learner feelings about content and process are very important
Evaluation	Learner is unable to evaluate the value of past learning	Learner is continually evaluating the utility of past learning and needs for further learning
Assumptions about the teacher	The teacher is the expert and authority	The teacher is a co-learner

Adapted from S.L.Meyer (1977), Godbey (1978) and Knowles (1987).

Table 2. Presumed relations between motivation, learning and instructional style (from Mouton and Blake, 1984).

Instructional Model	Outcomes Domains	
	Motivation	Learning
Pedagogy	--	+
Andragogy	+	--

Table 3. Studies of Andragogy in Practice

I. Experimental tests of Andragogy

STUDY	SAMPLE; DESIGN	ANDRAGOGY TREATMENT	OUTCOMES MEASURED	FINDINGS
DiVesta (1954)	118 Air Force personnel; experimental design	Student involvement in planning and learning activities;	Learning, Attitude and Behavior change	No differences in learning between methods compared to control; instructor- led method had more learning and behavior change
McLoughlin (1971)	Civil Defense Staff training	Experimental group was involved in planning program	Attitude to program; learning	No differences in learning; experimental groups was more satisfied
Cole and Glass (1977)	18 hospital employees; randomized pre and post experiment with control group	Climate setting; experimental group involved in diagnosing needs, planning, setting objectives, design and evaluation	Learning, Attitudes about subject and about course	Experimental group had more immediate learning but no differences in retention after 1 month; no differences in attitudes about subject, but more favorable attitudes about course
Pine (1980)	69 foreign students; randomized experiment	Involvement in program planning	Learning and attitudes	Both learning and attitudes were better in the participative groups
Rosenblum and Darkenwald (1983).	Adults in nursing supervisor training; experiment	Experimental group was involved in program analysis and planning	Learning; program satisfaction	No differences in learning or satisfaction; control group showed better learning
Madriz (1987)	90 teachers, Venezuela; random pre and post experiment with control group	Amount of participation involved in program planning	Learning and satisfaction scores	Both learning and satisfaction were higher in andragogical groups

Thomas and Klein (1994)	71 managers in Ohio hospital attending 8 3-hour supervisory training programs	2 experimental groups	Participation reactions; learning; transfer of training	Experimental (andragogical) groups had higher participation but no differences in learning, reactions or transfer
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II. Non-experimental Designs

STUDY	SAMPLE; DESIGN	ANDRAGOGY TREATMENT	OUTCOMES MEASURED	FINDINGS
Mager and Clark (1963)	Several single-group designs in electronics and engineering training	Learner-controlled instruction: students decide on sequence and pace	Motivation and learning	Both improved relative to norms of traditional training experience
McKeachie et al. (1978)	21 teachers, U. Michign undergrad psychology majors	Post hoc identification of teaching styles used	Motivation to learn; student achievement	No differences in learning; facilitator styles had greater motivational impacts
Conti (1985)	29 teachers of adult basic education	Post hoc self-report on teaching styles	Learning	Teachers favored pedagogy. Pedagogy associated with more learning.
Beder and Carrea (1988)	130 New Jersey teaches of various adult ed programs All volunteered for training	All received 9 hours training in andragogical method	Attendance; participant evaluations; given to all AE classes	Students with teachers trained in andragogy had slightly better attendance but no differences in student evaluations of program

Endnotes

1. As Merriam (2001) noted, a second “pillar” to the field of adult learning and education was “self-directed learning.” The relationship between andragogy and self-directed learning is a bit complicated. Knowles refers to andragogical adult learners as “self-directed learners”, connoting their ability to make decisions about how an educational experience will be structured. But the context of his views is in terms of organized educational experiences. A less context-bound version of self-directed learning is found in Houle (1961) and Tough (1971), where learning projects were the unit of analysis. Learning projects may or may not involve participation in organized educational programs. For Knowles, andragogy is a process for organizing learning experiences that enable self-directed learning to occur. Other kinds of self-directed learning can occur outside of and apart from organized learning experiences, though.
2. In his 1989 volume on *The Making of an Adult Educator*, Knowles reviews research on andragogy. The studies he includes are not experimental, the review is not systematic, and contrary findings are not reported. He does use one criterion consistently, though: participant reactions to or satisfaction with the program in which they are participating. Thus, it is reasonable to conclude that Knowles sees participant satisfaction as an important outcome of andragogical programs.
3. In his review of research studies on andragogy, Rachal (1994) contends that the use of a “learning contract” is the essential feature of the andragogical approach. This position creates problems for his review; see endnote 5 below. However, Knowles (1980) says that “learning contracts are not essential ingredients of self-directed learning” (p. 98); he does indicate that they are the best way he’s seen for organizing self-directed learning, though.
4. The designs they propose are called clarifying attitudes, performance judging, team

effectiveness, and team member teaching; all of their approaches share a cooperative learning structure. Under these approaches, the teacher becomes a learning administrator, responsible for forming and helping the learning teams, encouraging individual efforts, and using subject matter experts to prepare the structured learning materials that form the basis for the team learning activities.

5 In his review of andragogical research, Rachal (1994) used learning contracts as the defining characteristic for including studies. Most of these studies, though, did not include one “cardinal” feature of andragogical method: learner input into the planning and design of the learning program. Since learning contracts may just as easily be applied in pedagogical courses as andragogical ones, using that standard is a misleading criterion for screening studies. As a result, this review is flawed because it includes research that may not be correctly classified as testing “andragogy.”

6. Rachal (1994) suggests that andragogical methods cannot truly be tested when attendance at an educational event is required. While this is an important condition that may in fact mediate outcomes, Knowles did not include that in the theory. As such, it will not be added as a stipulation here.

7. Jonassen and Grabowski (1993) identify and review various instruments available for assessing each of the factors they reviewed.