

# A Critical Evaluation of Adult Learning Theories and Implication for Human Resource Development

Baiyin Yang  
University of Minnesota

*Based on a newly developed holistic theory of knowledge and learning, this paper critically evaluates several contemporary theories of adult learning. Most of existing adult learning theories tend to narrowly define knowledge and learning and fail to offer adequate explanation for adult learning. Implications for HRD theory, research, and practice are discussed.*

Keywords: Adult Learning, Holistic Theory, Theory Building

## Problem Statement

In the field of human resource development (HRD), a new conception extends the previous dual perspective of performance or learning and it posits that the field includes three key areas: learning, performance, and change (Gilley & Maycunich, 2000). Because HRD as a professional field works with all kinds of adults in various organizations for the purpose of facilitating their learning, performance, and change, the question of how adults learn and its subsequent relation with their behavioural performance and change tends to be a critical theme for HRD scholars and practitioners as well. Although there tend to be various definitions of learning and HRD, recent HRD texts all recognize the unique role of adult learning theory (DeSimone, Werner, & Harris, 2002; Gilley & Maycunich, 2000; Swanson & Holton, 2001). One may be able to argue that adult learning theory should be recognized as one of the key foundations of HRD.

However, the contribution of adult learning theory to HRD theory and practice has never been fully explored. Conventional HRD literature regards three major disciplines as foundations of the field (i.e., psychology, economics, and systems theory) and does not identify adult learning theory as one of the foundations (Swanson & Holton, 2001). In addition, although there have been an increasing body of literature on adult learning theories in the field of adult education, no systematic effort has been offered to critically evaluate the existing theories under a synthesis perspective (Merriam, 1993; Merriam & Caffarella, 1999). The purpose of this paper is to critically examine major contemporary adult learning theories from a newly developed holistic perspective.

## Research Questions

The purpose of paper is two fold. First, the paper is to critically examine major contemporary theories of adult learning in terms of assumptions of knowledge and learning. Second, this paper is to demonstrate the utility and application of a newly developed holistic theory toward an integrative perspective of learning theory. Specifically, the following research questions were used to guide the study:

1. What are the key propositions of major contemporary theories of adult learning?
2. What are the merits and limitations of major contemporary theories of adult learning form the perspective of a holistic learning theory?

## Methods

Two major research methods were used in this study, literature review and conceptual analysis. First of all, the researcher identified major contemporary theories of adult learning and then critically examined their key assumptions and propositions. Major texts and journals were searched in the fields of adult education and HRD. Sources of this literature review included major texts in the fields (DeSimone, Werner & Harris, 2002; Gilley & Maycunich, 2000; Knowles, Holton & Swanson, 1998; Merriam, 1993; Merriam & Caffarella, 1999) and preminent journals (*Adult Education Quarterly*, *Human Resource Development Quarterly*, *International Journal of Lifelong Education*, and *Human Resource Development Review*).

Once major contemporary theories were identified, the researcher engaged an intensive conceptual analysis. A framework of theory as explicit knowledge proposed by Yang (2003) was used to guide the analysis. Yang (2003)

Copyright © 2004 Baiyin Yang

suggested that explicit knowledge is reflected by those theories, models, and conceptual frameworks and that all of them have three layers—foundation, manifestation, and orientation. The first layer is a stratum of foundation or premise, which serves as the basis for our knowing and determines the boundary of a theory. It also indicates a theorist's epistemological belief system. The second layer is manifestation that represents the outcomes of our knowing, i.e., major propositions of a theory. The third layer is the orientation of our knowing which defines the direction and tendency of knowing action. This layer indicates the driving forces of our knowing process and thus reflects the advocacy of the theory.

### Theoretical Foundation

The theoretical foundation of this paper is a newly developed holistic theory of knowledge and learning (Yang, 2003). The holistic theory defines knowledge as a social construct with three distinctive and interrelated facets—explicit, implicit, and emancipatory knowledge. Knowledge is viewed as human beings' understanding about the reality through mental correspondence, personal experience, and emotional affection with outside objects and situations. The explicit facet consists of the cognitive component of knowledge that represents one's understandings of the reality. *Explicit knowledge refers to clear and certain mental apprehension that is transmittable in formal and systematic format.* It is the codified knowledge that identifies true from false.

The implicit facet is the behavioral component of knowledge that denotes the learning that is not openly expressed or stated. In most cases we know more than we think we know (Polanyi, 1967). *Implicit knowledge is personal and context-specific familiarity.* It is either something hard to formalize and communicate, or the familiarity that has yet to be articulated.

The emancipatory facet is the affective component of knowledge and is reflected in affective reactions to the outside world. *Emancipatory knowledge is one's understanding based on emotional affection and thus it is value-laden.* It is indicated by feelings and emotions people have toward the objects and situations around them. Emancipatory knowledge defines one's view of what the world ought to be, and it is the product of seeking freedom from natural and social restraints. It reflects one's internal affective and motivational states.

#### *A Dialectic Perspective of Three Knowledge Facets*

Yang (2003) posits that all of the three facets are present in all learning processes, even though not all of them need to experience a change. Furthermore, the holistic theory calls for a dialectical perspective of the three knowledge facets. On one hand, we need to acknowledge some intrinsically different characteristics of the three knowledge facets. If we examine each of the three knowledge facets at a time, they tend to be different and contradictory. The results will be like observing different faces of a coin. On the other hand, we should understand the complementary nature of these three knowledge facets. They are interacting with each other and indivisible when we take a holistic perspective. They occur by default whether we recognize them or not. All of the three facets are necessary components of the whole.

The holistic learning theory asserts that the construct of knowledge consists not only of the three facets but also of three knowledge layers (Yang, 2003). The knowledge layers include: foundation, manifestation, and orientation. The first layer is a stratum of foundation or premise, which serves as the basis for our knowing and determines the boundary of explicit knowledge. Foundation includes those tacit assumptions that have been taken for grant as valid and are not normally requiring proof. We have to accept certain assumptions in order to know and act. This layer indicates our epistemological beliefs. The second layer is manifestation that represents the outcomes of our knowing. The third layer is the orientation of our knowing which defines the direction and tendency of knowing action. So the third layer indicates the driving forces of our learning process.

#### *Learning as Dynamic Interactions among Knowledge Facets*

The holistic learning theory not only identifies characteristics of the three knowledge facets and layers, but also points out that it is learning that unifies different facets. Each of the three facets of knowledge provides a support needed for the other facets to exist. Explicit knowledge will exist only as meaningless facts, figures or bytes of information without the support of other facets (i.e., when two other facets are disconnected). We normally use "body of knowledge" to denote theories, models, and empirical findings but fail to realize that these things only represent explicit facet of knowledge. By the same token, learning is also influenced by emancipatory knowledge that defines the objectives and missions that guide our actions. Implicit knowledge also connects with the two other facets. It will appear as random, idiosyncratic, and isolated practical experiences without the support from the two other facets. Similarly, emancipatory knowledge will be simply emotion or affection when the explicit and implicit facets are removed in learning process. In sum, the holistic theory contends that knowledge exists in dynamic dialectic interactions among all three facets.

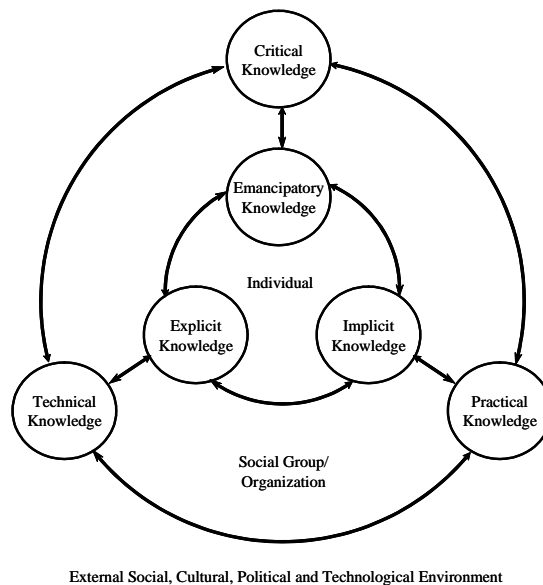
The holistic theory suggests that knowledge is created and transformed through the interactions among three knowledge facets (Yang, 2003). These relations are indicated by nine modes of learning: *participation*, *conceptualization*, *contextualization*, *systematization*, *validation*, *legitimization*, *transformation*, *interpretation*, and *materialization*. *Participation* is a process of learning from practice and thereby creating implicit knowledge from experiences. *Conceptualization* is a process of articulating implicit knowledge into explicit concepts. It converts familiarities into tangible explanations by proposing new concepts or theories. *Contextualization* is a process of embodying explicit knowledge into implicit knowledge. *Systematization* is a process of systematizing explicit conceptions into a system with logic and reasoning. This learning mode generally involves combining different bodies of explicit knowledge in a consistent format. *Validation* is a process of examining and possibly modifying underlying values, desires, judgments, perceived importance and worth, and other kinds of fundamental learning based on explicit knowledge. *Legitimization* is a process of justifying explicit knowledge based upon emancipatory knowledge. *Transformation* is a process of converting an old meaning scheme (i.e., values, feelings, ethics, etc.) into another form. *Materialization* is a process of transferring emancipatory knowledge into tacit knowledge. Those who utilize what has been learned from participatory action research to improve the quality of their daily life are in the process of materialization. *Interpretation* is process of making a meaning scheme explicit from tacit learning and direct experiences.

#### *Learning as Individual and Social Activity*

The holistic theory further suggests that learning is not only an individual activity but also a social phenomenon as well (Yang, 2003). An individual learner has to interact with his or her immediate social group or organization within certain social/cultural contexts. The holistic theory posits that a group or organization has to have three major components—critical knowledge, technical knowledge, and practical knowledge. Critical knowledge is the dominated emancipatory knowledge in an organization or a group of people. The sum of implicit knowledge of organizational members makes up practical knowledge. Practical knowledge exists in organizational processes and practices. Similarly, any organization has certain technical knowledge that represents those believed to be true explicit knowledge by its members and has been incorporated into its system. Technical knowledge normally exists in systems and structures.

Further more, the holistic theory defines group/organizational learning as a process of change in the dimensions of collective beliefs (i.e., shared technical knowledge), social norms (i.e., prevalent practical knowledge), and shared values (i.e., dominant critical knowledge) among group members. In other words, organizational knowledge is viewed as collective understandings among members through their technical, practical, and emancipatory facets of knowledge. Organizational learning involves changes of technical, social, and political dimensions of the organization. Figure 1 depicts the dynamic interactions among the three knowledge facets at individual and group/organizational levels.

Figure 1. Dynamic Interactions Among Three Knowledge Facets at Individual and Social Levels (©Yang, 2003)



## Contemporary Adult Learning Theories

The literature of adult education provides a number of concepts and theories of adult learning (Merriam & Caffarella, 1999). Though no unifying theory of learning has emerged because of the complexity and diversity of adult learning experiences, the holistic theory provides an integrative framework to examine some of the contemporary adult learning theories. The holistic theory of knowledge and learning suggests three distinct and related knowledge facets and dynamic interactions among the facets. Most of the contemporary learning theories have established their learning models based on part of knowledge facets and related interactions.

### *Andragogy*

Knowles (1968, 1980) proposed a concept of andragogy to distinguish adult learning from pre-adult schooling. The concept has been defined as “the art and science of helping adults learn” (1980, p. 43). The concept of andragogy has based on six core assumptions or principles of the adult learning: (1) adult learners need to know why, what, and how to learn; (2) adult learners are self-directing regarding self-concept; (3) adult learners enter into educational activity with both great volume and quality of prior experiences; (4) adult learners are ready to learn in relation to their developmental tasks and social roles; (5) adult learners are motivated to learn regarding to orientation of application; and (6) adult learners are motivated to learn by internal factors rather than external ones (Knowles, 1969, 1980; Knowles, Holton & Swanson, 1998, p. 4). In addition to the core adult learning principles, andragogy has been extended to include two factors that influence adult learning—goals and purpose for learning, and individual and situational differences (Knowles, Holton III, & Swanson, 1998).

Central to the concept of andragogy are its major propositions or assumptions about adult learner. In the light of the holistic theory of knowledge, these assumptions have focused on certain facets of knowledge. The concept of andragogy places emphasis on the characteristics of adult learners and posits that their life experiences can be valid source of learning. Consequently, this concept calls for active involvement of learner in educational activity. Discussions and small group activities are normally used to help adult learners. From the perspective of the holistic theory, andragogy emphasizes the role of the implicit facets of knowledge (learners’ experience as resource for learning, social roles and developmental tasks, and immediacy of application) and thus views adult learning as action or behavior oriented. However, it fails to recognize the important role of other facets. The actual role of the instructor is not well defined in andragogy. Some instructors call themselves facilitators, yet others assume the role of experts. The role of facilitator may be appropriate when learners have rich experience and need to articulate implicit knowledge to explicit or emancipatory knowledge. On the other hand, an expert role may be adequate when there is a consensus that explicit or technical knowledge needs to be delivered in an efficient way such as health and safety training.

Andragogy recognizes the role of learners’ need, self-concept, and internal motivation in adult learning. These three assumptions are within affect domain and thus related to emancipatory knowledge. However, andragogy fails to acknowledge the ultimate role of emancipatory facet of knowledge in adult learning. Because pre-adult learners have no legal rights to determine right from wrong, their learning in the domain of emancipatory knowledge tends to be passive. That is to say, pre-adult learners and some adult learners in special settings such as correctional education have to accept values and ethics normally determined by others. In most adult learning settings, learners are legitimate citizens and thus have the right of self-direction. It is vital for educators to recognize the role of self-concept and thus help adult learners to fully reach their developmental potentials. In HRD practice, goals and objectives are normally negotiated between individuals and organization, employees and employer.

One recently added factor in andragogy, goals and purposes for learning, clearly recognize the role of emancipatory facet knowledge in adult learning (Knowles, Holton & Swanson, 1998). However, it also implies that it is merely a technical process to determine learning needs and objectives. In fact, educational and training is not simply a mechanical process starting from needs assessment, to design and deliver of content, to evaluation. In many cases, HRD activities have to be involved with organizational politics (Cervero & Wilson, 1994). The holistic theory suggests that an individual’s emancipatory knowledge (indicated as perceived needs and motivation) interacts with the critical knowledge at the group and organizational level. Consequently, educators and HRD professionals need to pay attention to organizational politics and particularly the impacts of organizational critical knowledge.

Another newly added factor in the concept of andragogy is individual and situational differences. This factor recognizes the social and cultural impacts on learning and learners’ differences. Because andragogy does not recognize the nature of the three knowledge facets and that learning is a dynamic interaction among the facets, it fails to distinguish the roles of the three knowledge facets and their interface with situational factors. In sum, the extended andragogy model resembles the holistic theory depicted in Figure 1 in recognition of learning as interaction between individual and situation.

### *Self-Directed Learning*

Self-directed learning is another popular concept of adult learning. Self-directed learning is “a process of learning in which people take the primary initiative for planning, carrying out, and evaluating their own learning experiences” (Merriam & Caffarella, 1999, p. 293). There are rich empirical studies and theoretical frameworks in this area. Merriam and Caffarella (1999) conclude that “the goals of self-directed learning can be grouped into three major aims: (1) to enhance the ability of adult learners to be self-directed in their learning, (2) to foster transformational learning as central to self-directed learning, and (3) to promote emancipatory learning and social action as an integral part of self-directed learning” (p. 290). Most self-directed learning models promote learner-centered and controlled learning activities, which will ultimately result in change of learners’ emancipatory knowledge, but few of them recognize the vital role this knowledge facet plays in adult learning. Such approach to learning has been established on an individualist value system and assumes that human beings will find freedom as long as they find out right self-directions. The holistic theory of knowledge and learning challenges such assumption and posits that individual direction and action are normally determined by one’s value and belief system. Merriam and Caffarella (1999) conclude that the majority of self-directed learning models reflect only the first goal. Thus self-directed learning tends to promote for individual freedom based on an established value system (shared critical knowledge). However, it fails to recognize that learning can be viewed as a social and political process where learners do change their emancipatory knowledge.

The second and third goals of self-directed learning tend to promote transformational and emancipatory learning, but fail to fully recognize the dynamic relationships among different facets of knowledge. The holistic theory allows us to better understand the relations among key constructs of self-directed learning concept. In his attempt to build a comprehensive model of self-directed learning, Garrison (1997) suggests that three dimensions (self-management or contextual control, self-monitoring or cognitive responsibility, and motivation or entering/task) are central to a meaningful and worthwhile self-directed learning. Contextual control dimension indicates learners’ taking control of and shaping the contextual conditions. Self-monitoring describes learners’ ability to monitor their cognitive and metacognitive processes, to use a repertoire of learning strategies, and to think about their thinking process. Motivation determines learners’ decision to enter or exit a self-directed learning activity. Three dimensions in fact reflect three domains of the knowledge facets respectively under the view of the holistic theory. The contextual control dimension represents learner’s implicit knowledge in a particular learning context, the self-monitoring or cognitive responsibility dimension seems to indicate explicit knowledge, and the motivation dimension corresponds to the emancipatory facet of knowledge. Therefore, the holistic theory of knowledge and learning covers major dimensions of self-directed learning. Further more, the holistic theory provides reciprocal relations among the three dimensions and clearly spells out how each of these dimensions interacts with others. For example, Garrison’s (1997) model specifies the influences of motivation on self-monitoring and contextual control, but fails to acknowledge the mutual impacts of the latter two dimensions on the first one. In reality, learners’ motivation for a self-directed learning activity may change as a result of enhanced self-monitoring ability or frustration of out-controlled contextual condition.

### *Reflective Practice*

The concept of reflective practice proposed by Schön (1983, 1987, 1991) challenges the positivist epistemology of professionals’ practice. It posits that knowledge inherent from practice is artful doing. In order to overcome the limit of technical-rationality which separates the theory from practice, Schön proposes the concepts of reflection-in-action, theories-in-use and knowing-in-action. Theories-in-use is tacit patterns of spontaneous behavior. Reflection-in-action refers to learning by doing and developing the ability to continuous learning and problem solving skills. Knowing-in-action refers to the know-how revealed and constructed in intelligent action. Schön posited that learning is an iterative process that moves through stages of: (1) initial assessment of a situation of action with spontaneous and routinized responses; (2) routine responses produces a surprise (i.e., unexpected outcome) that does not fit prior knowledge; (3) surprise leads to reflection within an action-present; (4) reflection-in-action causes critical questioning the assumption of knowledge-in-action; and (5) reflection gives rise to on-the-top experiment. Schön maintained that reflection-in-action can generate knowledge to new situations but not in a way by giving rise to general principles. Reflection-in-practice adds new knowledge “by contributing to the practitioner’s repertoire of exemplary themes from which, in the subsequent cases of his practices, he may compose new variations” (1983, p. 140).

Closely related to the concept of reflection-in-action is so called reflection-on-action. While reflection-in-action determines what we are doing while we are doing during a particular situation, reflection-on-action involves thinking through the situation after we have done. This mode of reflection tends to be analytic and explicit. It is a process in which “we consciously return to the experiences we have had, reevaluate these experiences, decide to do

differently” (Merriam & Caffarella, 1999, p. 235). This process resembles conceptualization and contextualization in the holistic theory.

From the perspective of the holistic theory, the reflective process between theory and practice exemplifies the dynamic relationship between explicit and implicit knowledge. Reflection-in-action tends to learn from professional practice and thus construct implicit knowledge. Schön uses terms such as “theories-in-use,” “knowledge-in-action” and “knowing-in-action” to describe the implicit facet of knowledge. They all represent “a process we can deliver without being able to say what we are doing” (Schön, 1987, p. 31). The holistic theory acknowledges that implicit knowledge is embedded in practice or learners’ experiences; it further points out the difference between experience and implicit knowledge. One study has confirmed such distinction and shown that the amount of experience a person possessed did not have correlation with using reflective practice (Ferry & Ross-Gordon, 1998). Reflection-in-action thus can be viewed as only one of the viable ways of learning implicit knowledge for professionals.

Although reflection-in-action offers a viable explanation of effective professional practice and challenges technical rational perspective of professional education, several limitations are evident from the holistic perspective. First, the role of emancipatory knowledge in learning is not well recognized by many authors in this area. What are the influences of emotion and emancipatory knowledge such as learning need and motivation on reflective process? How can practitioners gain effective reflective skills? Are reflective processes (reflection-in-action and reflection-on-action) sufficient to educate proficient professionals?

Second, theory of reflective practice fails to acknowledge the essential role of explicit knowledge and a closely related learning mode, systematization. While it is necessary to recognize the tremendous values of implicit knowledge gained from professional practice and to acknowledge the fact that existing technical knowledge originally comes from implicit and practical knowledge, theory of reflective practice tends to devalue the role of theory and basic science. Professionals such as medical doctors could learn medical knowledge and gain their expertise directly through practice via apprenticeship several hundred years back. However, it is almost impossible to educate medical professionals in this traditional way due to the exponential exploration of knowledge base. Further more, technical knowledge such as theories and basic science have inherent merit as they provide learners with systematic and fundamental explicit knowledge that otherwise will not be able to develop by themselves or take more time to develop. Therefore, it is necessary to recognize values of both explicit and implicit knowledge gained from basic science and practice respectively.

Third, the reflective theory implies that most (if not all) professionals need to and are capable to engage in reflection-in-action. This is based on an assumption that most professional situations are not clear and well defined as described in basic scientific texts, contexts are ever changing, and thus there is a mismatch between explicit theory and real practice. Nevertheless, there are also many situations where problems are clear and well defined. In such situations, simply transmitting basic technical knowledge and skills can be effective. Even if a new issue occurs that challenges the existing technical knowledge and calls for new approach, simple learning from practice via reflection-in-action does not necessarily provide an adequate solution. We should not artificially create a division between basic science and implicit knowledge gained from professional practice because each of them has its own role for the development of a profession.

Professional education concerns both rigorous theory and relevant practical knowledge. The holistic theory of knowledge suggests that these two domains reflect technical and practical knowledge respectively. In other words, theory and practice are only parts of the broad knowledge base. Therefore, the holistic theory provides a framework that can be used to resolve the dilemma of rigor and relevance currently confronting the field of professional education. More importantly, we should set aside the dualistic view of theory and practice and focus on investigating valid forms of learning that generate different facets of knowledge.

Similar to the theory of reflective practice, Kolb (1984) proposed an experiential learning model that describes a process of learning from experience. This model views learning as a cyclical process that consists of four phases: (1) concrete experience, (2) reflective observation, (3) abstract conceptualization, and (4) active experimentation. From the perspective of the holistic theory, these four phases represent the learning modes in the interactions between explicit and implicit knowledge facets. This model delineates learning only at individual level and thus excludes the social and cultural factors that determine individual learning. In addition, this model fails to recognize the distinct role and value of emancipatory knowledge.

More recent notion of critically reflective practice extends the previous concepts and touches on the domain of emancipatory knowledge (Brookfield, 1995; Mezirow, 1998). This notion does not clearly distinguish three knowledge facets and layers and their respective roles in critical reflection. The holistic theory of knowledge and learning shows the relationships among different facets of knowledge and suggests that reflection is no more than the interactions within and among three knowledge facets. Critical reflection involves changes in the foundation

layer of knowledge facets. It is more important to go beyond the notion of reflection and discover how knowledge is created in three different facets and the impacts of knowledge creation and conversion in one facet on others.

#### *Transformational Learning*

Transformational learning occupies the center in the adult learning literature (Merriam & Caffarella, 1999) and it is “vitally important to HRD” (Swanson & Holton III, 2001, p. 171). Mezirow (1991) is the primary architect and leading advocate for a theory of transformational learning. This theory describes how adult learners interpret their life experiences and make meaning. Transformational learning is defined as “the process of becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand, and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating, and integrative perspective; and finally, making choices or otherwise acting upon these new understandings” (Mezirow, 1991, p. 167). Central to this theory are the concepts of meaning schemes and meaning perspectives. Meaning schemes are “specific beliefs, feelings, attitudes, and value judgments,” whereas meaning perspectives are “broad, generalized, orienting perspectives” (p. 163). Learning involves a change of either a meaning scheme or entire meaning perspective. Perspective transformation is a process of personally emancipating through which learners are freed from previously held beliefs, attitudes, values, and feelings that have constricted and distorted their lives.

Under the view of the holistic theory, meaning schemes fall into the manifest layer of three knowledge facets and meaning perspective included two other layers, foundation and orientation. Here the foundation layer of explicit knowledge corresponds to epistemic assumptions, foundation layer of implicit knowledge represents social and cultural assumptions, and the emancipatory layer characterizes psychic assumptions. Therefore, perspective transformation is a process where learners’ knowledge basis and tendency change under the view of original theory. The holistic theory differentiates three facets of knowledge and thus adds to new understanding of transformational learning. The holistic theory posits that transformational learning appears only if learners’ emancipatory knowledge changes. Consequently, some learning activities can be reflective and involve changes of meaning perspective within the domains of explicit and implicit knowledge, but they may not be regarded as transformational learning because emancipatory knowledge has not gone through any profound change.

Therefore, the transformational learning should involve deep changes in the domain of emancipatory knowledge. Simply changing or adding explicit and implicit knowledge in the existing meaning perspective with little or no change in the emancipatory domain may be identified as instrumental or additive learning. Even if the foundations of explicit and implicit knowledge (i.e., framework of reference for these two knowledge facets) have been changed, transformational learning do not necessarily occur. Thus, failure to define the concept of transformational learning is one of the major limitations in the existing literature. Another limitation of the current conceptualization of transformational theory comes from unclear definitions of instrumental and transformational learning. Because three knowledge facets have not been differentiated clearly in the existing literature, the relationship between instrumental and transformational learning has not been adequately explored. The third limitation of Mezirow’s (1991) original propositions of the transformational theory is its dependency on rational and cognitive process (Merriam & Caffarella, 1999). The original theory posits that rationality and critical-reflection is the key to leading the transformation. Under the view of the holistic theory, reflection involves mutual dialogue and change among different knowledge facets and layers. Therefore, if we define reflection as a process of interacting among knowledge facets and layers and critical-reflection as the process of examining foundation and orientation layers, then critical reflection may not necessarily lead to transformational learning. More importantly, the holistic theory suggests that transformation can take place through not only cognitive reflection (i.e., via the explicit facets) but also other factors such as simply taking action or remaining silence, which are in the behavioral domain.

#### **Implications for HRD Research and Practice**

The above examination of major contemporary theories of adult learning has implications for HRD research and practice. The holistic theory of knowledge and adult learning has several implications for research and theory-building in HRD. First, the holistic theory provides an effective framework to examine the existing learning theories. It suggests that learning occur as dynamic interactions among cognition, motivation, and social contexts. While each of the existing major theories of adult learning tends to narrowly focus their constructs in limited facets or layers of knowledge, the holistic theory calls for an integrative approach to workplace learning. While it is possible that most educators and scholars understand the value of a holistic approach, they are constrained by the lack of an integrative framework. The holistic theory challenges the prevailing works within each of three knowledge facets and also provides a strong analytic tool to examine or re-examine common concepts and theories in adult learning and HRD fields. For example, andragogy has been a widely used approach in training but little research has been conducted to examine whether the core principles of adult learner can be held or not. The holistic theory suggests three layers of

knowledge facets (i.e., foundations, manifestation, and orientation) that thus it provides an effective tool to evaluate these assumptions. From the perspective of the holistic learning theory, some core learning principles in andragogy are merely assumptions that need further investigation. For instance, assumptions of learners' intrinsic motivation and prior knowledge may not be held and depend on the characteristics of learners and the situation.

Second, the holistic learning theory not only provides an integrative framework to examine the existing theories but also suggests directions for future research and theory building. The holistic theory maintains that it is the dynamic interactions among knowledge facets and layers at both individual and social levels that determine learning. Therefore, future studies should be conducted to further reveal the mechanisms of the interactions between individual and social factors. Again using andragogy as an example, this concept mainly focuses on learner's individual characteristics and fails to recognize the impacts of social and organizational factors. Another adult learning concept, self-directed learning, also treats individual learner as the key focus. Under the perspective of the holistic theory, it can be reasoned that the more congruence between individual learners' emancipatory knowledge (e.g., perceived learning needs and motivation) and an organization's critical knowledge, the more effective learning will occur. Therefore, the above examination of the major theories of adult learning from a holistic perspective implies a number of valuable research hypotheses that worth exploring in future research.

Third, the holistic theory of knowledge and adult learning has implications not only for individual learning but also for organizational learning, change and development. Henderson (2002) compared several prominent change theories in the disciplines of organizational development, organizational learning, adult learning, and psychological development. It was revealed that change theories at individual level and organizational level are disconnected. Theories on organizational transformation and change tend to be descriptive and often fail to address the process for individual change. Many theories assume that individuals in the organization will adapt to the environment and system change. Therefore, these theories do not concern the internal change at the individual level. While theories on individual learning and change provide rich and detailed descriptions of individual transformative process, evidences also demonstrated a linkage between individual transformative learning and organizational change. Such evidences tend to support an integrative and holistic view of individual and organizational transformation. However, future studies needed to examine the role knowledge and its different facets and layers in transformational change. Studies in organization development area need to examine the dynamic interactions between individual and organizational knowledge, and their influences on individual and organizational transformation.

The above analyses also have implications for HRD practice. By examining both merits and shortcomings for each of the major contemporary theories of adult learning, this paper provides valuable information for HRD practitioners. While most practitioners tend to appreciate the holistic approach to learning, the above analyses of existing theories provide integrative perspective that can serve as a new model for HRD practice. For example, the above examination of andragogy revealed that core principles of this concept are mixed with both assumptions and propositions. HRD practitioners should be aware of limitations of some principles because they are assumptions that may not be held in all situations. In situations such as training for safety and firefighter where learners lack prior knowledge and the existing technical is valid, the training contents and procedures can not and should not be negotiated when consensus goals are set. Then andragogy implied principles of mutually setting up learning objectives and helping them assess the outcomes tend to be limited in such situations.

## Conclusions

Based on a newly developed holistic theory of knowledge and learning, this paper critically evaluates several contemporary theories of adult learning. Most of the existing adult learning theories tend to narrowly define knowledge and learning and fail to offer adequate explanation for adult learning. Implications for HRD theory, research, and practice are discussed. Research is needed to examine the dynamic interactions among knowledge facets and layers at both individual and organizational levels. Further more, HRD practitioners should be aware of both merits and limitations of existing learning theories.

## References

Yang, B. (2003). Toward a holistic theory of knowledge and adult learning. *Human Resource Development Review*, 2(2), 106-129.

(A list of references will be available upon request)