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Examining the Dynamic Relationships among Three Facets of Knowledge: A Holistic View

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Abstract. This paper proposes a holistic theory of knowledge and learning. The theory posits that knowledge is consisted of three indivisible facets: explicit, implicit, and emancipatory, and that it is more important to examine the dynamic relationships among the three facets in order to better understand different learning modes.

Three major approaches to the nature of knowledge have dominated adult education literature. Following Habermas (1971, 1984), adult education researchers have critiqued the empirical-analytic tradition of the field. It is argued that the knowledge produced from such tradition has served the interests of professionalization and control, and that these interests are not emancipatory (Wilson, 1993; Thompson & Schield, 1996). From the perspective of critical theory, it is important to examine the power relationship in which the knowledge is produced and whose interest is served. On the other hand, interpretive scholars believe that knowledge is subjective and is constructed from one's experience within the frame of prior interpretation. The three major approaches to knowledge (i.e., empirical-analytic, interpretive, and critical) have typified efforts to define the concept of knowledge from different perspectives. These perspectives have been shaped by the examination of a limited consideration of the nature of knowledge. This paper proposes a holistic theory of knowledge and learning. The theory posits that knowledge is consisted of three indivisible facets: explicit, implicit, and emancipatory, and that it is more important to examine the dynamic relationships among the three facets in order to better understand different learning modes.

Three Facets of Knowledge

Knowledge is human beings' understanding about the realities through mental correspondence, personal experience and emotional affection with outside objects and situations. This definition of knowledge has the following implications. First, knowledge exists in a state of understanding within human beings. Second, knowledge is learned and cumulated from personal and social life. Third, there are at least three channels that link individual inner state to outside realities. Consequently, knowledge has three distinct but interrelated facets: explicit, implicit, and emancipatory knowledge. A holistic theory of knowledge should include three basic facets of knowledge: explicit, implicit, and emancipatory. The explicit facet consists of the cognitive component of knowledge that represents one's understandings about the realities. Explicit knowledge is codified knowledge because it is transmittable in formal, systematic language. It includes technical knowledge as it reflects one's intentional and conscious effort to understand realities. The implicit or tacit facet is the behavioral component of knowledge that denotes the learning that is not openly expressed or stated. Implicit knowledge is personal, context-specified,

and therefore hard to formalize and communicate. Implicit knowledge usually comes from and exists in one's behavior, action, and accumulated experiences. However, experience itself can not automatically become knowledge. Only the learning and familiarity evolved from experience that have been confirmed to be true can be viewed as knowledge. Research has suggested that the unconscious thoughts and actions can be developed, received, stored, and recovered without the involvement of conscious awareness (Taylor, 1997). The emancipatory facet is the affect component of knowledge and is reflected in affective reactions to outside world. Emancipatory knowledge is value-laden. It is indicated by feelings and emotions people have in relation to the objects and situations. Emancipatory knowledge defines one's view about what the world should be, and it produces one's efforts to seek freedom from natural and social restraints. Table 1 compares three facets of knowledge and their related characteristics.

Table 1. Comparison of Knowledge Facets

	Explicit	Implicit	Emancipatory
Nature	Knowledge of rationality (mind)	Knowledge of experience (body)	Knowledge of meaning (heart)
Function	Sequential knowledge (there and then)	Simultaneous knowledge (here and now)	Essential knowledge (where and why)
Domain	Digital knowledge (theory)	Analog knowledge (practice)	Vital knowledge (spirit)
Foundation	Separation of object and subject (objective)	Interrelated object and subject (subjective)	Object within subject (affective)
Carrier	Formal, abstract symbols & languages	Informal, concrete, and vivid experiences	Values, conscience, dignity, & ethics
Source	Logic, reasoning	Practice, experience	Freedom, justice

Criteria	Empirically sound, clear, and consistency	Workable, practical, communicative	Enlightening, ethical, responsible
Ability to Learn	Analytical Intelligence	Practical Intelligence	Emotional Intelligence
Goal	Truth Efficiency Maximize	Reality Effectiveness Artistic	Liberty Significance Empowering
Problem Nature	Structured	Less-Structured	Nonstructured
Related Theory	Prescriptive	Heuristic	Descriptive
Research Tool	Empirical-analytic	Experiential-interpretive	Critical-reflective
Research Domain	Cognition (thinking)	Behavior (action)	Affect (emotion)

The differences among these three facets of knowledge have both theoretical and practical importance. The explicit knowledge is based on the separation of object and subject and it serves for the interest of rationality. The implicit knowledge is established on the interrelation between object and subject and thus is simultaneous and analog knowledge. The emancipatory facet is essential and vital knowledge that defines the meaning of an object within subject. These three facets are different not only in nature, function, and foundation, but also in direct sources, evaluation criteria, and ultimate goals. The direct source for the explicit knowledge is logic and reasoning and it is judged by the criteria of empirical soundness, clarity, and consistency. The explicit knowledge seeks for truth and efficiency, and it tends to search for a single solution for an action that maximizes its satisfaction or utility. This facet of knowledge is facilitated by analytical intelligence and measured by conventional IQ tests. The implicit or tacit knowledge derives from practice, experience, and recognition. It needs to be practical and communicative across situations. This facet of knowledge aims for reality, and it focuses on the effectiveness that normally requires artistic instead of scientific solutions. The ability to acquire the implicit knowledge can be viewed as practical intelligence (Sternberg, 1985, 1997). People do not just know through thinking or doing, they also acquire knowledge with their emotions and feelings.

The emancipatory knowledge includes human beings' pursuit of freedom and justice, which is advanced by values, assumptions and ethics. In quest of liberty and empowerment, the emancipatory knowledge has been evaluated by intellectual illumination and ethical responsibility. This facet of knowledge can be also facilitated and indicated by emotional intelligence (Goleman, 1995, 1996). Goleman has noted that people with higher emotional intelligence tend to "have a notable capacity for commitment to people or causes, for taking responsibility, and for having an ethical outlook; they are sympathetic and caring in their relationships" (1995, p. 45).

Because these three facets of knowledge appear to be different in many aspects, researchers and theorists tend to view the concept of knowledge from one perspective or another. Moreover, the academic field and related literature have been divided into camps of so called paradigms. Scholars tend to conduct their discourses within in one camp or take one only perspective for the sake of consistency. For example, program planning theories in the literature appear to emphasize only one approach rather than a holistic view (Cervero & Wilson, 1994). Those who place their emphasis on explicit knowledge tend to examine relatively structured problems, use empirical-analytic tool of research, and build prescriptive theories and models. Those scholars who accept the implicit nature of knowledge look less-structured problems with experiential-interpretive tools and their research outputs appear as heuristic theories and interpretations. Those who contends that emancipatory knowledge is vital for any sort of learning use such research tools of critically reflection or participatory study to probe nonstructured problems, and their outcomes are normally descriptive. From a research perspective, the three facets of knowledge represent three domains of study: cognition, behavior, and affect. Each of the three domains reflects a long interest of investigation along the lines of thinking, action, and emotion respectively.

Dynamic Relationships among Knowledge Facets

Although the differences among three facets of knowledge have been long recognized, few have examined their unitary nature. While knowledge facets may come from different sources and develop toward diverse directions, as discussed above, none can be simply

dismissed. A holistic theory of knowledge and learning must acknowledge all facets of knowledge. In fact, 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. Implicit knowledge will appear as random, idiosyncratic, and isolated events or situations without the connections with two other facets. Emancipatory knowledge will be simply emotion or affection when the explicit and implicit facets are removed. The above different terms and characteristics are divided and examined just for the discourse purpose and themselves are explicit writings with rational interest. In reality, a robust piece of knowledge consists of three interrelated facets. A holistic view of knowledge should be a dynamic dialectic among all facets.

Consideration of these facets of knowledge can be facilitated by thinking of them as angles of an equilateral triangle with the angle of the triangle being the different facets of knowledge. The inside of the triangle can be regarded as the arena of knowledge and the sides of the triangle represent interaction among the facets. While educators and researchers can view the concept of knowledge from one of the angles and work on a particular side, there is always the influence of the other two angles in the arena. Each of the angles is bounded by two angles and shaped by the inputs and influences from other facets of knowledge. Learning can start in one of the facets and educators and learners can, consciously or unconsciously, move toward one of the directions characterized by the knowledge facets. However, any change of one facet always affects one or both of the other facets.

Figure 1. Three Facets of Knowledge and Implied Modes of Learning (not provided for website)

The dynamic relationships among the knowledge facets and related learning modes are presented in Figure 1. Three circles in the figure represent the knowledge facets and the lines with arrow refer to the interaction between the facets. It is assumed that knowledge is created through the interactions among explicit, implicit, and emancipatory knowledge. These relations allow us to draw at least nine modes of learning (i.e., knowledge conversion): 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. The direct outcomes of the participation are unconscious mental models and technical skills such as know-how. Many learning forms such as apprenticeship, interns and on-job-training fall into this mode of learning. Personal participation in individual and social activities will always result in implicit learning, which, in turn, develops intuitive (tacit) knowledge. Psychological studies have shown that such knowledge is optimally acquired independently of conscious efforts to learn and it can be effectively used to solve problems and make decisions (Gerholm, 1990; Reber, 1989). Conceptualization is a process of articulating implicit knowledge into explicit concepts. It converts familiarities into tangible explanations. It is a quintessential knowledge-creation process in that implicit knowledge becomes explicit, taking forms of metaphors, analogies, concepts, hypotheses, or models (Nonaka & Takeuchi, 1995). For example, a professional may summarize what have learned from practice, reflect upon the literature in the field and write up a scholarly article for publication. Other professionals in the field then can learn from such explicit knowledge. Contextualization is a process of embodying explicit knowledge into implicit knowledge. It is the process of utilizing concepts, models, propositions in a specific context. A teacher is in this learning mode when he/she examines the appropriateness of newly developed teaching method in his/her classroom. Because there may be countless factors that affect his/her decision of adoption and the person who developed the method cannot anticipate all possible applicable situations, the teacher may not be able to clearly state the rationale and the process of such decision. Therefore, such learning process that involves action or behavior will always

bring about a change of implicit knowledge. Systematization is a process of systematizing concepts into a knowledge system with logic and reasoning. This learning mode generally involves combining different bodies of explicit knowledge in a consistent format. People exchange and combine knowledge through such forms as seminars, literature critique, or conferences. Validation is a process of examining underlying values, beliefs and other kinds of fundamental learning based on explicit knowledge (which is believed to be true under rational perspective). Mezirow (1996) suggests that we establish the validity either by empirically testing to determine the truth or by appealing to tradition, authority or rational discourse. "Discourse allows us to test the validity of our beliefs and interpretations" (p. 165). Legitimization is a process of justifying explicit knowledge based upon emancipatory knowledge. For instance, many higher education institutes changed admission regulations after civil right movement. Transformation is a process of converting an old meaning scheme (i.e., values, feelings, ethics, etc.) into another one. It should be noted that not all transformative learning occur in a positive direction. One longitudinal study shows that adult life experiences can result in diverse development outcomes (Merriam & Yang, 1996). For example, those who experienced a period of unemployment have expressed more sensitivity to social and economic inequality, but they felt to be marginalized, vulnerable, and controlled by external forces. Some life experiences may bring about learning with negative interpretation (Merriam, Mott, & Lee, 1996). The key to understand such complicated learning process lies the interactions among three knowledge facets. Interpretation is process of making meaning scheme from tacit learning and direct experiences. People feel to be empowered and have a new look about the life through a participatory action research have been involved the learning process of interpretation. Materialization is a process of transferring emancipatory knowledge into tacit knowledge. Those who utilize what have been learned from the participatory action research to improve the quality of their daily life are in the process of materialization.

Knowledge Facets and Paradigms of Learning and Research

There has been a lot of discussion on the paradigms of learning and research (Merriam, 1991; Mezirow, 1996). From the perspective of the proposed theory of knowledge and learning, contemporary paradigms have been evolved with emphasis on one facet of knowledge or another. The positivist or objectivist paradigm posits that only explicit facet is valid knowledge (Searle, 1993). Learning occurs as learners relate concepts descriptive of the new knowledge to previous knowledge within their cognitive structure. The integration of new and previous knowledge occurs through changes in the learners' conceptual structure. Concepts are thought to be developed and stored in a hierarchical structure. The positivist paradigm assumes that human beings are rational and take actions based on explicit knowledge. The essential element of the rationality is a conscious goal and the best action selected from all relevant alternatives that maximize the promise of reaching that goal. Unfortunately, such perspective ignores or pays less attention to the roles of unconscious learning and learning in the affect domain.

The interpretive paradigm emphasizes the implicit nature of knowledge and the changing influences of reality. Knowledge is acquired only through experiences and direct engagement in practice (i.e., participation) (Lave & Wenger, 1991). Mezirow (1990) contends that learning

process involves looking at past experiences, new experiences and reflecting on these for the purpose of making meaning. "Learning may be defined as the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action" (p. 1). Observing the dynamic world and the complexity of human communication, the interpretive paradigm asserts that realities are multiple and subjective and that truth is relative. Consequently, such assertion poses a dilemma. Do we want the communication of our interpretations to be as clear as if there is a single reality or, with multiple realities, a confusion lead to no action?

The critical paradigm involves a commitment to deliberate action for justice in society where the existing social structure is seen as coercive and oppressive. It argues any adequate approach to educational theory must provide ways of distinguish ideologically distorted interpretations from those that are not (Carr & Kemmis, 1986, p. 129). Although this paradigm strongly advocates the rejection of positivist notions of rationality, objectivity and truth because of its danger to move toward hegemony, explicit learning (with a tendency of instrumental rationality) remains the major source of validation and justification (Mezirow, 1996). In fact, many communist movements which originated from the critical thinking are very hegemonistic.

Conclusion

The paper presents a holistic theory of knowledge and learning. By examining the major characteristics of three knowledge facets, it is argued that learning can be understood within the interactions among the three facets of knowledge. The conventional paradigms assume that they are divisive and thus have failed to integrate the dynamic relationships among knowledge facets. Therefore, research and theory building need to consider the nature of knowledge facets. Theories must meet the requirements of empirically sound, communicative clarity, and critically analysis (Brookfield, 1992; Cervero & Wilson, 1994). The proposed theory also provides a useful framework to reexamine conventional adult education concepts, namely andragogy, adult development, experiential learning, feminist pedagogy, self-directed learning, and transformation theory. For instance, andragogy recognizes adult learners' experiences that can be a valid source of learning and their self-concept of responsibility. However, the dynamic relations between this learning source and other sources have not been clearly outlined.