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AUTHOR Kasworm, Carol E.
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ABSTRACT

Because self-directed learning behaviors are inherently interwoven within a foundation of lifespan cognitive and contextual characteristics, researchers must examine the theory and application of self-directed learning not just as an externally-defined or self-perceived process but also as an internal process of continual development grounded in a framework of both cognitive and human developmental psychology. The developmental perspective for examining the evolution of cognitive and affective transactions of self-directed learning suggests a three-dimensional framework. This framework would incorporate the following components: (1) specific levels of behavior and skills to engage in and complete the action of self-directed learning, (2) specific levels of cognitive complexity necessary for the specific nature of acts of learning, and (3) specific levels of affective value toward knowledge and learning actions. This framework assumes that there are specific developmental changes caused by person-environmental interactions that must occur rather than movement influenced solely by common sense, intuitive, or environmental context for the learners. One theoretical framework for such a lifespan developmental context of self-directed learning is Dr. William Perry's scheme of cognitive and ethical development. (MN)

TOWARDS A PARADIGM OF DEVELOPMENTAL LEVELS OF SELF-DIRECTED LEARNING

Carol E. Kasworm
University of Texas at Austin

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Refer correspondence to:

Dr. Carol Kasworm
Adult, Continuing & Higher Education
Department of Curriculum & Instruction EDB 406
University of Texas at Austin
Austin, Texas 78712
(512) 471-4285.

Introduction

Prior research and philosophical examinations of self-directed learning have conceptualized this phenomena as a set of generic, finite behaviors; as a belief system reflecting and evolving from a process of self-initiated learning activity; or as an ideal state of the mature self-actualized adult learner (Knowles, 1973; Smith & Haverkamp, 1977; Tough, 1979). These prior discussions have stimulated the formative definition and conceptualization of structures and functions of self-directed learning. However, in the critical analysis and the application of self-directed learning, these constructs and affect perspectives have been represented as either a uni-dimensional, linear set of assumed single unit behaviors, or as philosphical, idealized states of inner being.

Few researchers have attempted to provide a theoretical base for future research investigation on self-directed learning. Penland has suggested that neobehaviorism combined with social learning theory could be one valuable theoretical framework. He notes that this theory would permit the development of new taxonomies based upon the "observed verbal and nonverbal patterns" of adults as they engage in learning (Penland, 1981). Given this theory, it is probable that learning activities are pursued by the adult learner in either an inductive or deductive fashion, beginning with isolated information units that identify need for additional data collection or starting with a broad structure of data that suggests a general planning framework for specific sub unit investigation (Mocker and Spear, 1982).

Penland's suggested theoretical framework speaks to the assumed desired level of state of behavior as well as the capability of an agent and certain mediating environmental factors to modify a self-directed learners verbal and nonverbal behavior. This framework does not (as is the philosophical grounding of neobehaviorism) deal with the cognitive and perceptual intra individual differences in the self-directed learning process. In analyzing past research, there is a significant reliance (and certain philsophical/psychological assumptions) upon the learner's definition and awareness of the phenomena, of observed or learner-defined progression of "events or actions" in a process, or upon the learner's value system, and upon the learner-defined access and use of resources in these endeavors. Nor as suggested by Penland, does the context and the internality of the learner's perceptions and cognitions, assume a neutrality in this process.

> The environment may be the curriculum for self-directed learning; but the learner is neither at the mercy of, or constrained by that environment. The learner uses the transactions and negotiations of everyday life for self-instructional development, and a full range of teaching and learning devices are encountered in the process. The facts of learning and self-instruction can not be accounted for by any single theory or school of psychology, but would require the power of them all integrated at some future point in a grant synthesis. (Penland, 1981, p. 37).

In my research both in the classroom and in interacting with colleagues investigation of adult human development, the concept of maturation and development are believed to be potent concepts. It is also assumed that in the adult years there are cognitive and perceptual developments which reorganize the nature of categorization of information, the awareness of the nature of knowledge, the assessment of utilization of information and the nature of problem solving. As with Penland, I agree that the multiple theories may well provide insights into a grand

theory of predicting and modeling self-directed learning activities. I suggest that cognitive and developmental perspectives are one major area for consideration.

Developmental Paradigm

Self-directed learning behaviors are inherently interwoven within a foundation of lifespan cognitive and affective contextual characteristics. Just as there is difficulty in identifying one strand of behavior which signifies a person's change from an immature to a mature human being, so also is there difficulty in defining self-directed learning behavior in a context of acquisition of finite unidimensional set of skills or a linear perspective of observed behavior development. The early forms of conceptualizing self-directed learning provided significant contrast and definition of a phenomena unrecognized or not understood for its potency in the learning process. However, in both the theory and application, self-directed learning should be examined within a broader context, a framework which provided depth and breadth of cognitive, behavioral, and affective factors.

I posit that self-directed learning must be considered not just as an externally-defined or self-perceived process. It also must be considered as an internal process of continual development grounded in a framework of both cognitive and human developmental psychology. As noted by Piaget (1952) and others, affect, cognition, and behavior are inseparable yet distinct, none of these domains should be neglected in considered the events of and impact of learning upon the adult. From a developmental psychology framework, assumptions regarding the nature of acquisition and application of self-directing learning could be articulated from three different perspectives. These perspectives may be best

identified through key terms used in describing the nature of human development. As noted by Sanford (1962) and Knefelkamp (1976), the terms of change, growth and development suggest major differences regarding any transition process model of learning as it impacts upon human behavior.

In the first perspective, learning within a human development framework can imply a change. A change is a modification of attitude or behavior in replacement of another attitude or behavior. Change identities a characteristic difference in an inclusive judgment act, and is used as descriptive, quasi-normative term. For example, it speaks to a person as being categorized in terms of "teacher-directed" or "self-directed" behavior. This perspective presumes the ability of the person in judgment to specify the behavior in a systematic, finite manner and thus categorizes the current behaviors into inclusive category sets. Often, self-directed learning acts are presented as an "either/or" event.

Growth is also a term often used within a human development context and specifically linked to processes of self-directed learning. This term suggests a personal-referent judgment with an additive notion, that of building upon a foundation in a progressive expansion or some form of hierarchical, sequential process. Knowles, Tough, Smith and Haverkamp suggest this belief that self-directed learning represents this growth-orientation. Knowles identifies an assumptive model of representing polarities with progressive movement of growth from teacher/authority directed (pedagogical learning) to self-directed (andragogical) learning. The ability to "become a self-directed learner" is identified by the key competencies of self-directed learning gained through a Brunerian spiral curriculum concept (1973). Smith and Haverkamp (1977) and Smith (1982)

suggest a comprehensive framework noting a hierarchical growth in learning how to learn competencies. They define key building blocks or steps in the progressive development of the learner, the facilitator/trainer and the growing of program/research elements of self-directed learning. Tough and other research investigators of adult learning project activity identify behavior and concommitant perceptual attitudes which represent key skills and interactive elements in self-directed learning projects.

The third perspective of self-directed learning focuses upon the term development as described by developmental psychologists. The human development process not only presumes that there is a change and a growth in self-directed attitudes and skills. It also presumes that here are gradations, that there are qualitatively defined differences which can be identified as the learner gains greater skills and insight toward a self-directed learning stance. This perspective when applied to "learners", suggest that there are both qualitative as well as quantitative differences and distinctions among the various members of a group in a self-directed, self-initiated activity.

In examining a paradigm of self-directed learning which assumes a developmental stance, several principles can provide a basic framework for qualitative developmental process considerations. These principles define assumptions about the nature and levels of the process of human cognitive and affective development in relation to learning stimulus and interaction.

1) These levels imply qualitative differences in the individual's mode of thinking about him or herself in the personal world. Level is a concept used to aid us in conceptualizing the nature of this quali-

tative system and its relevance to complexity of information processing regarding how an individual learns about his/her self and the world.

2) These levels describe a complex process which incorporates the learners' unique characteristics of a) level of skill/behavior for engagement in learning inquiry, b) cognitive capacities and competencies, c) affective and value orientations focused upon both the nature of the learning inquiry as well as perceptual meaning of knowledge embedded in value perspectives.

3) These levels represent different cognitive structures, behavioral capacities, and intellectual and value functions. However, in the formative development, these stages present an invariant sequence, one stage must logically follow another in the formative development process.

4) Each level represents the individual's perceptual and cognitive structure of thought. Thus each stage will self-define the notion of person and self and will influence the perceptual filters with which the self views and interprets the world and the nature of learning.

5) Levels are hierarchical integrations, proceeding from the less complex to the more complex. Each stage is necessary to the total process of development and has both positive and negative potentials. Each stage incorporates those earlier, less complex levels that have gone before and provides the awareness to preview those stages that will come after this stage.

This developmental perspective for examining the evolution of cognitive and affective transactions of self-directed learning (mathetics) suggests a three-dimensional framework. This framework would incorporate a) specific levels of behavior/skill to engage and complete the action of self-directed learning, b) specific levels of cognitive complexity

necessary for specific nature of acts of learning and c) specific levels of affective/value towards orientation of knowledge and learning actions.

Insert Figure 1

This framework assumes that the progression of development from one level to the next must incorporate qualitative differences of all three elements of a level for a fundamental movement to the next more complex level. It assumes that there are specific developmental changes caused by person-environmental interactions which must occur rather than movement influenced solely by common sense, intuitive (creative) or environmental context (information presence) for the learners. Although the development of self-directed learning is influenced by genetic predisposition and limitations, the formative evolution of self-directed learning from one stage to the next will be more profoundly influenced by:

a) learner awareness of self and values

b) competence in language and numerical symbol knowledge and skill application

c) program definition, clarification and resolution perspectives and skills

d) initial and subsequent development of cognitive information processing patterns (cognitive/learning strategies and styles)

e) historical and cultural context of individual in defining utilitarian value and use of knowledge in relation to self-mastery

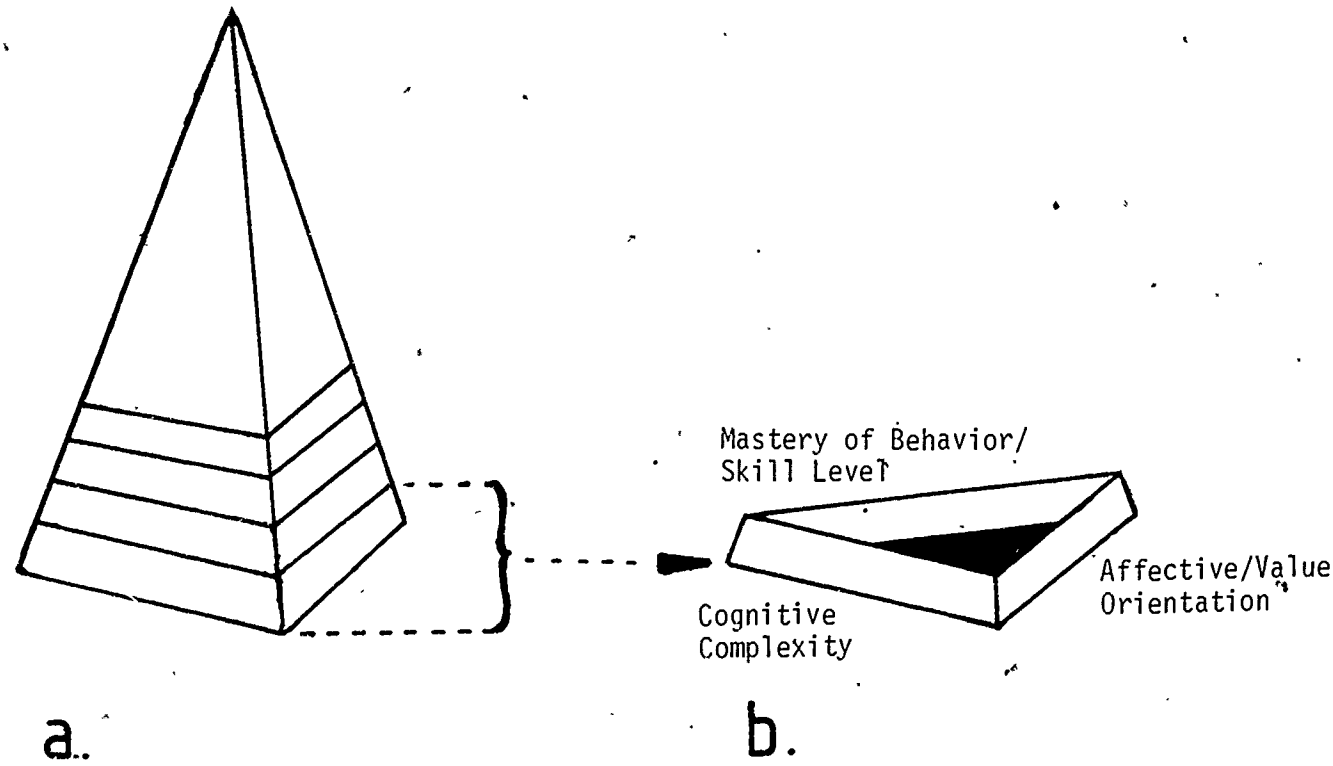

Figure 1.

a. Framework of the Development of Self-directed Learning (Mathetics) Capacity.

b. Sectional Breakout of One Level Noting Key Elements.

f) systematically designed learning experiences to explore and facilitate learner self-directed learning complexity

In the above figure of self-directed learning, each level represents a different set of interactional characteristics between cognitive, affective and behavioral components. The movement from one level to the next also implies a transformation, a paradigm shift as discussed by Kuhn, towards both 1) an active creator of new learning events, 2) maker of new meaning of the learner's realty and 3) the framework also implies an ongoing development of the learner's sense of awareness and and values in relation to self (internal) identification, to world (external) definition of self and actions, to the concept of value and use of abstract, conceptual and finite knowledge forms.

Each individual represents a unique person in relation to a self-directed learning activity. Self-directed learning is not just steps of linear process of goal definition to evaluation of outcome, it also represents a qualitative evolvement of a person's sense of cognitive definition and developmental readiness for ambiguous and non defined actions in relation to self directed learning experiences.

Thus developmental and cognitive process interact and influence the adult learning process. Flavell describes a model of cognitive monitoring noting that adultlike knowledge and cognition about cognitive phenomena (or metacognition) plays an important role in various types of self-control and self-instruction in relation to memory, comprehension and other cognitive enterprises (Flavell, 1979).

I believe that the monitoring of a wide variety of cognitive enterprises occurs through the actions of and interactions among four classes of phenomena: a) metacognitive knowledge, b) metacognitive

experiences, c) goals (or tasks), and d) actions (or strategies). Metacognitive knowledge is that segment of your (a child's, an adult's) stored world knowledge that has to do with people as cognitive creatures and with their diverse cognitive tasks, goals, actions, and experiences. Metacognitive experiences are any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise. I assume that metacognitive knowledge and metcognitive experiences differ from other kinds only in their content and function, not in their form or quality. Goals (or tasks) refer to the objectives of a cognitive enterprise. Actions (or strategies) refer to the cognitions or other behavior employed to achieve them. (Flavell, 1979, 906-907).

Metacognition and cognitive monitoring provide yet further support of developmental and cognitive psychology suggesting cognitive developmental phenomena of similarity to "self-directed learning".

Potential Models for Consideration and Future Research

This developmental perspective has generated from a series of thoughtful, reflective evaluations of the literature in relation to my sense of difficulty in encouraging, facilitating, describing and attempting to predict the self-directed learning phenomena and in exploring other theoretical frameworks. Self-directed learning, I believe, speaks to the nature of human development and learning in the most basic and most complex of human systems. In attempting to locate salient theoretical framework for this lifespan developmental context of self-directed learning, I identified Dr. William Perry's model as one potentially fruitful and substantive avenue. This perspective speaks to the structured qualitative nature of self-directed learning

through the presumed development progression of intellectual and ethical development. Dr. William Perry and his associates, through their pioneering work, presents a schema which grapples with the concerns for widely differing perspectives by individual learners regarding their investment orientation and action in a learning and values related to invested learning.

The qualitative and quantitative aspects of a developmental framework are most cogently presented by Perry's scheme of intellectual and ethical development. Over a twenty year period Perry and his associates conducted extensive protocoal interviews of college students in successive panel samples of undergraduate classes from 1959-1971 through examining the nature of development of undergraduate students' patterns of thought, of the ways they gave meaning to their educational experience.

> These structures of meaning, which students (appear) to revise in an orderly sequence from the relatively simple to the more complex, determine more than students' perceptions of the teacher (the teacher role); it shapes the students' ways of learning and color their motives for engagement and disengagement in the whole educational enterprise. (1981: 77).

Perry's scheme of cognitive (intellectual) and ethical development focused on both the learner's position in a defined sense of knowledge, value and education and the transition, the journey, in development through these positions. The model endorses the values of pluralism, respect for human dignity and integrity, individual self-determination value of dissent, and critical examination. The model speaks to movement a) from concrete to abstract conceptualized forms of thought, b) from simplistic, unidimensional focus on knowledge to complex, contradictory, multi-dimensional perspectives of knowledge and c) from an absolutist, externalized authority stance to commitment of self values in relation to knowledge. Certain cognitive psychologists behieve the

scheme describes the journey towards development of "meta thinking" or mathetics (Perry, 1981).

The scheme model outlines nine levels which define the developmental movement across the major landmark areas of dualism, relativism and commitment (Figure 2). In the first three positions of dualism, the learner assumes that all information and all values can be classified as either right or wrong and that uncertainty is an error of some sort. In these positions, learning-teaching transactions by student's perceptual definition is a matter of complying with the Authority (teacher) to find and know the right answer. Knowledge and value are absolute; the learner believes that he/she is and should be a "receptacle", a tool for the authority to provide "success", "the right answer", the "final word". During these positions, learners view knowledge from a quantitative, cumulative notion; they perceive that learning can be attained by the sole concern of hard-work and perseverance. As learners move toward positions of relativism, the learner successively modifies and legitimizes the diversity of opinions and values, thus altering explanations of uncertainty.

In the next three levels (from the fourth through sixth level), absolutes regarding right and wrong concepts of value or knowledge are altered. In level four, the learner now can accept uncertainty to be legitimate and encompassing. Thus, both the Authority (teacher and written works) can express and the learner can accept differing opinions regarding an explanation of a subject and view these divergent thoughts as legitimate. However, at this level the learner views this diversity as a random, unordered presentation of opinions. In level five, the learner views knowledge and values as contextual, relativistic and situational. Perry's scheme notes that at this point, "students seem to

generalize relativistic assumptions to the realm of self and are faced with many vantage points from which to consider his or her own identity." During levels four and five, the diversity of values and knowledge are derived from a coherent set of both evidential sources, as well as defined logic or patterned systems to allow for analysis and comparison. Knowledge is now viewed from a qualitative frame of reference. In level six, the learner becomes aware that knowledge and his/her own sense of identity with knowledge and values will occur by acts of commitment toward one's own sense of belief and acceptance of a perspective, a theory, and an action.

The remaining three levels (Level 7 to 9) in the Perry scheme no longer focus on the learner's view of involvement and use of knowledge, rather it focused on affective, internal evaluation of individual's recognition of initial commitment. It incorporates the balancing of increasing divergent, contradictory commitments and beliefs as the learner engages in continual evolution of learning towards an increasing sense of "enlightment or fuller self-definition." These final stages become a "value/moral endeavor in the most personal sense... (The students') realizations confront them repeatedly with reworking of the issues of competence, loneliness, community and self-esteem" (Perry, 1970: 54).

Perry's scheme is a marvelous, descriptive model. It does lack certain conceptual and substantive elements with regards to the cognitive processes, cognitive monitoring and problem-solving areas. In the next steps of a research investigation, there is need for determining variations among self-directed learners within this cognitive developmental context, these variations would begin to define qualitative levels of affective, cognitive and psychomotor development, as well as a differing

cognitive monitoring process in relation to self-directed learning.

This paper has presented a discussion of the current lack of self-directed learning research within a broader lifespan and theoretical context. I have suggested a developmental framework, the specific value of Perry's scheme and beginning research in meta cognition and cognitive monitoring to better understand, define and apply self-directed learning to individual learners.

Figure 2. Scheme of Cognitive and Ethical Development

Dualism modified	Position 1	Authorities know, and if we work hard, read every word, and learn Right Answers, all will be well.
	Transition	But what about those Others I hear about? And different opinions? And Uncertainties? Some of our own Authorities disagree with each other or don't seem to know, and some give us problems instead of Answers.
	Position 2	True Authorities must be Right, the others are frauds. We remain Right. Others must be different and Wrong. Good Authorities give us problems so we can learn to find the Right Answer by our own independent thought.
	Transition	But even Good Authorities admit they don't know all the answers *yet*!
	Position 3	Then some uncertainties and different opinions are real and legitimate *temporarily*, even for Authorities. They're working on them to get to the Truth.
	Transition	But there are *so many* things they don't know the Answers to! And they won't for a long time.
Relativism discovered	*Position 4a*	Where Authorities don't know the Right Answers, everyone has a right to his own opinion; no one is wrong!
	Transition *(and/or)*	But some of my friends ask me to support my opinions with facts and reasons.
	Transition	Then what right have They to grade us? About what?
	Position 4b	In certain courses Authorities are not asking for the Right Answer; They want us to *think* about things in a certain way, *supporting* opinion with data. That's what they grade us on.
	Transition	But this "way" seems to *work* in most courses, and even outside them.
	Position 5	Then *all* thinking must be like this, even for Them. Everything is relative but not equally valid. You have to understand how each context works. Theories are not Truth but metaphors to interpret data with. You have to think about your thinking.
Commitments in Relativism developed	Transition	But if everything is relative, am I relative too? How can I know I'm making the Right Choice?
	Position 6	I see I'm going to have to make my own decisions in an uncertain world with no one to tell me I'm Right.
	Transition	I'm lost if I don't. When I decide on my career (or marriage or values) everything will straighten out.
	Position 7	Well, I've made my first Commitment!
	Transition	Why didn't that settle everything?
	Position 8	I've made several commitments. I've got to balance them—how many, how deep? How certain, how tentative?
	Transition	Things are getting contradictory. I can't make logical sense out of life's dilemmas.
	Position 9	This is how life will be. I must be wholehearted while tentative, fight for my values yet respect others, believe my deepest values right yet be ready to learn. I see that I shall be retracing this whole journey over and over—but, I hope, more wisely.

Perry, 1981: 79

FIGURE 3

Ego Development	Moral and Ethical Development			Intellectual Development	
Amoral	(Kohlberg) Egocentric	(Perry) Basic duality	(Loevinger) Stereotypy, Conceptual confusion	(Piaget) Symbolic, Intuitive thought	(Bloom)
Fearful-dependent	Obedience-punishment	Multiplicity prelegitimate		Concrete operations: 1. Categorical	Memorization
Opportunistic	Instrumental egoism and exchange	Multiplicity subordinate		Concrete operations: 2. Reverisble concrete thought.	Application
Conforming to persons	Good-boy oriented	Multiplicity correlate or relativism subordinate	Conceptual simplicity; stereotypes and cliches		
Conforming to rule	Authority, rule, and social order oriented	Relativism correlate, competing or diffuse	Conceptual complexity, idea of patterning	Formal operations: 1. Relations involving the inverse of the reciprocal Formal operations: 2. Relations involving triads	Analysis
Principal autonomous	Social contracts, legalistic oriented	Commitment foreseen	Increased conceptual complexity, complex patterns; toleration for ambiguity, broad scope, objectivity	Formal operations: 3. Construction of all possible relations	Synthesis
	Moral principle orientation	Initial commitment implications of commitments, developing commitments		Systematic isolation of variables	
				Deductive hypothesis testing	Evaluation

Chickering, 1976: 73

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