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ABSTRACT

Research on learning styles has shown that students learn better when teachers plan class learning activities to fit students' learning styles. This paper describes three "ways of knowing" and discusses the role they play in "knowing the culture" of a school. The first part relates ways of knowing to the usual three domains of learning--cognitive, affective, and psychomotor--and offers an overview of the work of thinkers on the subject ranging from the ancient philosophers to psychologist Carl Jung. The second part examines more recent work on cognition and describes how it relates to teaching and learning. It is suggested that dialogue is a way to overcome hindrances to knowing. To discover the culture of a school, the three ways of knowing can be combined through dialogue, in which a "human group process" is used to arrive at common ground that serves as a basis for discussion. Eight tables are included. Appendices contain a model for innovative expansion of education modalities and an excerpt from William James' "The Varieties of Religious Experience." (LMI)

HOW DO WE GO ABOUT "KNOWING" THE CULTURE OF OUR SCHOOL?

C.M. Achilles

HOW DO WE GO ABOUT "KNOWING" THE CULTURE OF OUR SCHOOL?*

There are many ways of knowing. Work on "Learning Styles" (e.g., R. Dunn and others) shows that students learn better when teachers take the students' preferred learning style into consideration while planning class learning activities. Noted psychologist Howard Gardner (e.g., 1976) has determined that there are various "intelligences" and that individuals may excel in (or rely on) one or several, but not all, of these intelligences.

Cognitive psychologists and cognitive science have been advancing the "scientific" knowledge base on ways of knowing. [Since I'm not a cognitive psychologist nor have I done any serious personal research on cognition, I must rely on my understanding of such works as Brown, et al. (1989), Perkins and Salomon (1989) and others.] I have, however, done some reading, observing and experiencing and have come up with my own synthesis of ideas about "Ways of Knowing" (Achilles, 1989).

A Simplistic Model

In fairly simple form, I can relate ways of knowing to the usual three "domains" of learning: Cognitive, Affective and Psychomotor (or Conative). These are not new ways of knowing. We can trace back at least to Greek philosophers of the Golden Age and find roots for thinking (cognitive) and feeling (affective) ways of knowing. The classic philosophers Democritus and Heraclitus were seen as thinking/feeling opposites; whenever Heraclitus saw humankind, he wept. (One wonders how huge the reservoirs had to be to provide enough tears.) Democritus observed humankind's efforts mostly as futile foibles flowing from contemporary common comedy and openly laughed at the human condition. The Roman satirist Juvenal (circa

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60-140 A.D.), in his scathing, famous (or depending on your view, infamous) Satire X [2], said:

> iamne igitur laudas quod de sapientibus alter
> ridebat, quotiens a limine moverat unum
> protuberatque pedem, flebat contrarius auctor (lines 28-30)

Juvenal's lines were translated by one of the translators of the works of Michel Eyquem de Montaigne (1533-1592; better known today just as Montaigne) as:

> One from his door his foot no sooner passed,
> But straight he laughed, the other wept as fast.
> (Crocker, 1959, p. 155)

In his provocative but brief essay "Of Democritus and Heraclitus," Montaigne popularized two ways of knowing which the two ancient Greek philosophers vivified. In so doing, he preserved for moderns the idea of Heraclitus as "The Weeping Philosopher."

The sometime novelist Horace Walpole (1717-1797) expressed this duality of ways of knowing -- the same that many of us came to know and love in Psychology 101 as cognitive and affective -- in his best-selling, Book-of-the-Month Club, top-ten novel, The Castle of Otranto. Walpole's comments:

> The world is a comedy to the man who thinks,
> And a tragedy to the man who feels.

And to the ancients, the "psychomotor" or conative way of knowing was what you and I call Trial and Error -- If once you fail, try and try again. In a straightforward way, here are the three "ways of knowing" that cover most of our immediate concerns. Appendix A provides one "model" to incorporate these ideas in education.

The notion of feeling (affective knowledge) is important and is often thought to be personal and mysterious, but cognitive knowing also extends well beyond that which we readily can express. (Metaphysics?) Perhaps here, in the epistemology of Michael Polanyi (1966) lie key concepts of ways of knowing. Polanyi is convinced that each of us knows much more than

we can express. Knowledge and understanding emerge from subsidiary and focal clues (Crist & Achilles, 1978, p. 13).

My friend and yours, Mr. Sherlock Holmes, had deduced this same result -- in Victorian times. Early on in their long relationship when, in "A Study in Scarlet," J. Watson questioned Holmes's ability to specify -- in advance of meeting him -- that a client was a "retired sergeant of marines" (Doyle, 1905, p. 25), Holmes not only was correct, but he expressed cryptically his ability to know what he did know. "It was easier to know it than to explain why I know it" (p. 26). Think how much later came psychology's idea of the "quantum leap," and how much more obfuscated became the explanation thereof.

Somewhere between (in time and tone) Polanyi, the philosopher, and Holmes, the practitioner, is William James, the psychologist. James (The Varieties of Religious Experience) discusses a way of knowing where the experiencer know that it is God's voice speaking. James believes that it does not detract from the value of the experience to note that the observer is probably highly suggestible (intuitive?); that the voice is probably a part fortuitous, part subconscious conjoining of images, cues, impressions, and so on; and that the certitude of the experience's "rightness" is so great that it is not exaggerating to call this experience "divine" (see Appendix B). Here, then, is another idea that we know but may not have a cognitive grasp of how we know. Sometimes, though, through reflection the curtain parts, or the light comes on -- then (eureka) we know that we know, and may even come to know how we know.

Another psychologist, Carl Jung, seriously considered myths (as symbols and story) and symbols of human existence. Jung also saw the symbolic and heuristic value of dreams. Jung believed that humans used symbol and dream to extend human "understanding." Jung (1964) expresses it as follows (note the similarities to Polanyi and James): "Because there are innumerable things beyond the range of human understanding, we constantly use symbolic terms to represent concepts that we cannot define or fully comprehend. This is one reason why all religions employ symbolic language or images" (p. 21).

Jung notes that this conscious use of symbols is but one aspect. The unconscious and spontaneous use of symbols is the dream. Man "never perceives anything fully. . . . He can see, hear, touch, and taste; but how far he sees [etc.]. . .depends upon the number and quality of his senses" (p. 21). Note binoculars to see further, then telescopes, then radio telescopes, and so on. "No matter what instruments he uses, at some point he reaches the edge of certainty beyond which conscious knowledge cannot pass" (p. 21). Jung speaks of intuition and of subliminal absorption of events without our conscious knowledge. The edge of certainty -- this expression deserves to be the title of a treatise! The ways of knowing. . . . For Jung, the myth, story, and symbol are important paths to knowing.

If we reflect on the idea, we understand it. A great chef can never quite explain how fully the finesse of a contemporary culinary creation is craftily consummated. A pinch of pepper. A tease of thyme. A shake of salt. The test is the taste. If that chef could express exactly what makes that particular dish at the particular time its own particular creation, many would copy the recipe, and there would be a coterie of outstanding chefs. Why are there so few extraordinary chefs when there are so many good cookbooks?

Some people, it seems, can have all of the data -- all of the ingredients of the recipe -- but they never really know. What blocks them from using the data to help them know? The mere presenting of data is not enough. Consider a book.

A book will provide us with facts, data, opinions. A book may help lead us to new thoughts or provide ideas for us to combine in unique ways with information we already have. But we must do the mixing, blending, and combining. The book cannot. For many, knowing is not a product of a single way of knowing. It is some configuration that requires us to reflect on our experience and combine that with an experience expressed by someone else -- an artist or author, for instance. In this way, we are asked both to feel and sense on the one hand, and to consider and contemplate on the other. These two modalities, the sensing and the contemplating, are exemplified in daily life through our own actions and are essentially called "values" as they blend to guide how we behave. Behavior is manifest value. Through our behavior, we and others

can see and experience our values. The behavior itself demonstrates our evaluation and subsequent valuation (expressed as an investment of time and energy) of a particular contribution to our own individuality. (Seeing is believing.)

Norris and Achilles (1988) reviewed literature and conducted studies of leaders related to "styles" and hemispheric dominance. Some leaders -- usually school superintendents -- are very "left-brained" and cognitive. Others are more intuitive and "right-brained." But the most successful are holistic thinkers relying upon cognitive and affective as the conditions and situations dictate. When right-brained they are visionary; when left-brained they are careful plodders, never deviating from the norm or the expected. (If the schedule works this year, it certainly is okay for next year, too!) Don't rock the boat! Some of the relationships between cognitive/affective/psychomotor and the idea of hemispheric functioning are shown in Table A-1, Appendix A.

Current, Serious Work on Ways of Knowing

Some current articles on cognition present much more scientific concepts of ways of knowing than discussed here, and they still make sense. Brown and colleagues (1989) have commented that recent studies of learning challenge the separating of what is learned from how it is learned and used (p. 32). They argue for approaches such as "cognitive apprenticeship" that "embed learning in activity and make deliberate use of the social and physical context." This seems to combine, in structured and sophisticated ways, Juvenal's (and Montaigne's) Two Philosophers without the moods of laughing and crying. Brown and colleagues reflect that prior research on vocabulary teaching/learning has shown "how the assumption that knowing and doing can be separated leads to a teaching method that ignores the way situations structure cognition" (p. 32). Furthermore, they contend, "learning from dictionaries, like any method that tries to teach abstract concepts independently of authentic situations, overlooks the way understanding is developed through continued, situated use" (p. 33).

Perkins and Simmons (1988) developed an extensive review of research to generate an integrative model of ways of understanding that included four "frames": the content, the

problem-solving, the epistemic, and the inquiry frames (see Table 1). The content frame contains the "facts, definitions and algorithms associated with the 'content' of a subject matter" (p. 305). The problem-solving frame contains "domain specific and general problem-solving strategies, beliefs about problem solving" (p. 305). The epistemic frame "incorporates domain specific and general norms and strategies concerning the validation of claims in the domain" (p. 305), and "the 'facts' in the content frame are valid by the measure of the norms in the epistimic frame" (p. 305). The inquiry frame includes "domain specific and general beliefs and strategies. . .to extend and to challenge the knowledge" (p. 305). This domain is the most ambitious and hardest to cultivate (p. 313).

Table 1 about here

The elementary courses in a domain often contain "enough information for students to engage in problem-finding activities, when they formulate or participate in formulating the problems to be addressed" (p. 313). By bringing similar, but disparate, ideas together are we engaging in an act of synthesis or integration? Perkins and Simmons (1988) continue, "Students, however, show little tendency to engage in problem finding, and indeed, conventional schooling offers few opportunities for such activity. This is unfortunate because evidence suggests that a disposition toward problem finding relates strongly to creative productivity" (p. 313).

Perkins and Simmons intend that their model helps to show how conventional schooling/instruction falls short in helping people to understand. They note that "education tends to be dominated by default assumptions about what knowledge and understanding are and how they are acquired" (p. 323). This is serious material attempting to tempt educators to attend more seriously to considerations of many ways of knowing.

In spite of all of the good research and theory on ways of knowing, some people just never seem to "know," at least from our (that is, our very own) perspective or frame of

reference. Here is a list -- admittedly neither complete nor scientific -- of "ways of not knowing" or of "hindrances to knowing."

1. Conflicting Ideologies. People of different persuasions often are convinced that their view of The Truth is the only valid view of the world. (Conservative vs Liberal. IS America better off now because of Reaganism? IS pollution of the Earth a problem? "Political correctness," etc.)

2. Tradition. It has been this way for so long, how can the current situation not be real?

3. Failure to recognize that small increments of incremental change have finally added up to something BIG. (The "Boiled Frog Syndrome.") Each year only a few people move in and out. It happens slowly so all we see is a small annual change. But -- 5 percent change/year will be a real issue in 10-15 years.

4. The psychological ideas of repression or denial -- Actually seeing/knowing/recognizing the facts or data, but refusing to let oneself believe what is evident.

5. Honest disagreements that build into advocating or "either-or" condition (face-saving issues).

6. Inability to recognize that dialogue requires first and second persons (I/Thou) vs the first/third person discussion of we/they. (See below.)

7. Many people and organizations fall prey to what Senge (1990) has called the "seven learning disabilities" of organizations (Tables 2 and 3). Senge also has suggested ways out of the problems (Tables 4 and 5).

8. Etc.

Tables 2, 3, 4, and 5 about here

Most of these conditions can be overcome by careful, educated applications of the ways of knowing and then by processing and using the information. This might include surveys, careful observations, "scientific method," census data, reading, studying and mapping trends. Certainly an underused method is dialogue -- conversation with a purpose. In dialogue/conversation there must always be a first and a second person (M. Buber's I and Thou). This does not allow the impersonal and depersonalizing WE-THEY phenomenon so often used to avoid understanding what is really going on. In dialogue each person talks/listens and really tries to understand.

Dialogue may lead to consensus -- not the absolute accepting or rejecting of absolutes, but the attempt to incorporate into each position the best of other positions. In some ways this was foreshadowed by Kantian dialectic: Thesis, Antithesis, Synthesis.

The pollster/sociologist Daniel Yankelovich (1991) tried to consider how mass opinion (public judgment) could play a major role in democracy. Yankelovich notes that moving from mass "opinion" (a low-level functioning) to public judgment (high-level functioning where the people know and are willing to accept consequences) takes three key steps: 1) Consciousness Raising (Awareness), 2) Working Through (Trial/Evaluation) and 3) Coming to Resolution (Doing Things Differently). His steps for moving from mass opinion to public judgment (Tables 6, 7, and 8) provide a useful guide in helping us find a way of knowing that allows for growth and change. Here a way of knowing is careful consideration of the ideas and the position of others -- based upon the assumption that another person's views have merit.

Tables 6, 7, and 8 about here

How do we go about knowing the culture of our school? We combine the three "ways of knowing" described (cognitive/affective/conative). We attend to dialogue and that means listening and really hearing. We look and really see; this means that we give serious consideration to data and then try to determine meaning rather than using opinion to screen data or make data conform to pre-determined ideas. We might even consider Yankelovich's steps as described in Tables 6, 7, and 8. Here we use a human "group process" to try to arrive at some common ground that will serve as a basis for discussion. But, in getting to know the culture of the school we must get past the most difficult of all knowing: Know Thyself.

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Table 1
A SYNOPSIS OF FOUR FRAMES FOR UNDERSTANDING

Frame	Contents of the "Frame" Domain-Specific and General	Characteristic Performances
Content	Facts, definitions, algorithms of the content of the subject matter, etc.	Recall facts; give correct descriptions using the vocabulary of the domain
Problem-Solving	Problem-solving strategies; beliefs about problem solving, etc.	Solve conventional textbook problems (and even some "qualitative" problems)
Epistemic	Norms and strategies to validate claims of the domain; facts of content frame are "valid" by measure of these norms	Give evidence; explain rationales; propose tests of claims
Inquiry	Beliefs and strategies that work to extend and challenge the domain's knowledge	Creative and critical thinking to question the domain's boundaries; problem finding, venturing

Based on Perkins and Simmons (1988, p. 305).

Table 2

In most companies that fail, there is abundant evidence in advance that the firm is in trouble. This evidence goes unheeded. . . . The organization as a whole cannot recognize impending threats, understand the implications of those threats, or come up with alternatives (p. 17).

Senge, P. (1990). The Fifth Discipline. New York: Doubleday.

Table 3
THE 7 LEARNING DISABILITIES OF ORGANIZATIONS

1. I am my job.
2. The enemy is out there.
3. The illusion of taking charge.
4. Fixation on events (true proactiveness comes from seeing how we contribute to our problems) (p. 21). Threats come not from events, but from slow gradual processes.
5. The boiled frog syndrome (US auto industry!).
6. Delusion of learning from experience (Job supply!).
7. Myth of the MANAGEMENT TEAM (most management teams break down under pressure - Argyris, p. 25). (Skilled incompetence.)

Senge, P. (1990). The Fifth Discipline. New York: Doubleday, 18-25.

Table 4
DISCIPLINES OF THE LEARNING ORGANIZATION

- Systems Thinking (The Fifth Discipline!)
- Personal Mastery (e.g., Master Craftsman)
- Mental Models (pictures/images that influence how we understand the world and take action)
- Building Shared Vision (set of principles and guiding practices)
- Team Learning

*Senge, P. (1990). The Fifth Discipline. New York: Doubleday, 5-11.

Table 5

SYSTEMS THINKING: Seeing wholes, recognizing patterns and interrelationships, and learning how to structure them in more effective and efficient ways.

BUILDING SHARED VISION: Not an "end" -- a continual process. The source of all activities that flow from the vision. A Process and not a Product.

PERSONAL MASTERY: Discipline of personal growth and learning, the spiritual foundation of the learning organization -- creating what we want in our lives.

WORKING WITH MENTAL MODELS (Templates): Assumptions and interval pictures used to interpret and make sense of the world. These influence how we perceive problems, opportunities, courses of action, choices. Requires distinguishing actual observation from assumptions and biases. Dictates, in a team setting, new ways of interacting --

TEAM LEARNING SKILLS: Balancing inquiry and advocacy to achieve collaborative learning and decision-making.

Senge, P., & Lannon Kim, C. (1991, Nov.). Recapturing the spirit of learning through a systems approach. The School Administrator, 48(9), 1-12. From Senge's The fifth discipline.

Table 6
THREE STATES: FROM MASS OPINION TO PUBLIC JUDGMENT

I AWARENESS & CONSCICUSNESS RAISING
Learn About. Become Aware Of. Understand.
Passive & Receptive.
Cognitive Resolution.

II WORKING THROUGH (Evaluation, Trial)
Confront the Need to Change.
Active Engagement & Involvement.
Emotional Resolution.

III RESOLUTION (Use. Adopt/Adapt)
Bring Together Cognitive and Emotional.
Resolution and Add Moral Resolution.

Yankelovich, D. (1991). Coming to Public Judgment.

Table 7
CONSCIOUSNESS RAISING VS AWARENESS

- Time Variability
- Cogency of Events
- Perceived Applicability to Self
- Concreteness and Clarity
- Publicity

Yankelovich, D. (1991). Coming to Public Judgment.

Table 8
TEN RULES OR GUIDES FOR RESOLUTION ARE. . .

1. Assume public and experts are out of phase.
2. Do not depend on the experts to present the issues.
3. Learn the public's preoccupation and address it before discussing any other facet of the issue.
4. Give the public the incentive of knowing that someone is listening and cares.
5. Limit the number of issues to which people must attend at any one time to two or three at most.
6. "Working through" is best accomplished when people have choices to consider.
7. Leaders must take the initiative in highlighting the value components of choices.
8. Move beyond the "say 'yes' to everything" form of procrastination.
9. When two conflicting values are both important to the public, seek resolution by tinkering to preserve some element of each.
10. Allow sufficient time.

Yankelovich, 1991, 160-179.

Appendix A
A Seminal Modal for Innovative Expansion of Education Modalities

Characteristics of Hemispheric Functioning

Hemisphere Reliance	LEARNING STYLES	COGNITIVE Left SEQUENTIAL	COGNITIVE Left LOGICAL	AFFECTIVE Right INTUITIVE	AFFECTIVE Right SPONTANEOUS	?	PSYCHOMOTOR OR CONATIVE
Cognitive Basically Left	I Print-Oriented	XX[a]	XX				
	II Aural	XX	X				
	III Oral (Interactive)	X	X	X(?)			
Both	IV Visual			X(?)			
	V Tactile (Haptic)						
Affective Basically Right	VI Gustatory/ Olfactory						
	VIII Motor (Others?)						X[b]

a. XX indicates frequent use; X indicates some use
b. Such things as open house, booster club
NOTE: Learning styles and basic table from work and discussions with R.L. French, Unviersity of Tennessee.

Appendix B
Excerpt from The Varieties of Religious Experience

I cannot but think that the most important step forward that has occurred in psychology since I have been a student of that science is the discovery, first made in 1886, that, in certain subjects at least, there is not only the consciousness of the ordinary field. with its usual centre and margin, but an addition thereto in the shape of a set of memories, thoughts, and feelings with are extra-marginal and outside of the primary consciousness altogether, but yet must be classed as conscious facts of some sort, able to reveal their presence by unmistakable signs. I call this the most important step forward because, unlike the other advances which psychology has made, this discovery has revealed to us an entirely unsuspected peculiarity in the constitution of human nature. No other step forward which psychology has made can proffer any such claim as this.

The most important consequence of having a strongly developed ultra-marginal life of this sort of that one's ordinary fields of consciousness are liable to incursions from it of which the subject does not guess the source, and which, therefore, take for him the form of unaccountable impulses to act, or inhibitions of action, of obsessive ideas, or even of hallucinations of sight or hearing. . . . These clinical record [of Binet, Freud, and others] sound like fairy-tales when one first reads them yet it is impossible to doubt their accuracy. . . . They throw. . .a wholly new light upon our natural constitution.

And it seems to me that they make a farther step inevitable. Interpreting the unknown after the analogy of the known, it seems to me that hereafter, wherever we meet with a phenomenon of automatism, be it motor impulses, or obsessive idea, or unaccountable caprice, or delusion, or hallucination, we are bound first of all to make search whether it be not an explosion, into the fields of ordinary consciousness, of ideas elabo-rated outside of those fields in subliminal regions of the mind. We should look, therefore, for its source in the Subject's subconscious life. . . . There lies the mechanism logically to be assumed, -- but the assumption involves a vast program of work to be done in the way of verification, in which the religious experiences of man must play their part.

Quoted from James (1902).