Theories of Intelligence and Epistemology and the Challenge for Educators

Lisa M. Beardsley

Loma Linda University

Loma Linda, CA 92350 USA

lbeardsley@llu.edu

June 21, 2002

Presented at the 30th Faith and Learning Seminar, Sahmyook University, Seoul, Korea.

Theories of Intelligence, Epistemology and the Challenge for Educators

Lisa M. Beardsley

τῇ τε γυναικὶ ἔλεγον ὅτι Οὐκέτι διὰ τὴν σὴν λαλιὰν πιστεύομεν, αὐτοὶ γὰρ ἀκηκόαμεν καὶ οἴδαμεν ὅτι οὗτός ἐστιν ἀληθῶς ὁ σωτὴρ τοῦ κόσμου.
ΚΑΤΑ ΙΩΑΝΝΗΝ (John) 4:42

Introduction

Current theories of intelligence and the epistemological tension between empiricism and post-modernism raise a challenge for the professor of higher education. How does the educator teach students to "know how" and not only "know that?" What type of relationship should exist among subject, professor, and students that will lead students to the transcendent and ontological level, to the level of finding personal meaning in life? Empiricism versus epistemic relativism— "post-modernism" is the subject of much current academic debate. This paper expands that dialogue with scriptural references that critique the strengths and limitations of empiricism on the far right, and post-modernism at the left end of the epistemological continuum. It will be argued that casting a broad epistemological net enables students to "know how," and develops their ability to perceive and come to know spiritual truths. Regardless of discipline, the Adventist educator, I will show, must be proficient in this epistemological dialogue so that he or she can lead students to evaluate and use empiricism or post-modernism when appropriate, without losing their capacity to be touched by the transcendent in a safe way.

Inquiry, Intelligence and Core Operations

Inquiry and epistemology—the study of the nature and grounds of knowledge, and the theory of the limits and validity of what we can know is core to higher education. Subject-specific inquiry methods have their place in the respective disciplines. An appeal to authority or the

testimony of others through the study of the writings of great thinkers and theologians is part of the

epistemological tradition in religious education. But God does not demand blind trust or baffle

seekers with either sophistry or nonsense. Neither should we as teachers. In John, "Come and

see," is used twice as a response to the possibility of Jesus being the Messiah (John 1:39, 46). In

the interview-by-night, Jesus appealed to Nicodemus' reason by illustration. There are "earthly"

and visible truths (call it empiricism) and "heavenly," invisible ones that nonetheless manifest

themselves by visible indicators (John 3:5-8). Furthermore, such things can only be truly known at

a personal level (i.e., subjectively; John 3:11). The epistemological progression from knowing

because another knows, to knowing through personal experience was described by the Samaritans

to the "woman at the well." "They said to the woman, 'We no longer believe just because of what

you said; now we have heard for ourselves, and we know that this man really is the Savior of the

world.'" (John 4:42). Likewise, "teachers should lead students to think and clearly to understand

the truth for themselves. It is not enough for the teacher to explain or for the student to believe;

inquiry must be awakened, and the student must be drawn out to state the truth in his own

language, thus making it evident that he sees its force and makes the application (White, 1948, p.

154).

The goal of education and redemption are the same: to restore in humans the image of God.

"Every human being, created in the image of God, is endowed with a power akin to that of the

Creator—individuality, power to think and to do. The men in whom this power is developed are

the men who bear responsibilities, who are leaders in enterprise, and who influence character. It is

the work of true education to develop this power, to train the youth to be thinkers, and not mere

reflectors of other men's thought." (White, 1952, p. 17).

The purpose of this paper is to discuss current theories of intelligence as they relate to

epistemology and the educator's task. It does not provide a comprehensive examination of theories

of intelligence. These theories fall into three main models: developmental (e.g., Jean Piaget's

assimilation and accommodation processes); psychometric based on measurement concepts (e.g.,

Raymond Cattell's fluid vs. crystallized abilities); and information processing (e.g., Robert

Sternberg). The most complex model is that of J. P. Guilford, in which operations by context, by

products yields a Rubric's Cube of 120 discrete aspects of intelligence. The theory of multiple

intelligences proposed by Gardener (1983) comes closest to Guilford's model. Gardner

persuasively theorizes that these multiple intelligences are "relatively autonomous human

intellectual competences" and that they are formed, adapted and expressed by individuals and

cultures. While independent, they typically work in harmony, supporting Charles Spearman's

theory that intelligence is based on one common intellectual factor known as "g" for general

intelligence. While he recognized specific abilities or "s," each required a certain amount of g

factor. Gardner, in contrast, notes that multiple intelligences can be highly developed in

individuals (J. S. Bach, A. Einstein). Or, they may be isolated altogether (e.g., the mathematical

ability of autistic savants)--a confirmation by negation of their autonomy. Gardner defines human

intelligence as a "set of skills of problem solving—enabling the individual *to resolve genuine

problems or difficulties* that he or she encounters and when appropriate, to create an effective

product—it must also entail the potential for *finding or creating problems*—thereby laying the

groundwork for the acquisition of new knowledge." (pp. 60-61, italics in original). Because

multiple intelligences are a "reasonably complex gamut of the kinds of abilities valued by human

culture" (p. 62) they are more fluid and possibly culture-specific, compared to what are measured

by traditional IQ tests (i.e., verbal and quantitative reasoning).

The core operations by which knowledge is acquired, however, are more culture-general in that they are based in human neurology and cognitive capacity. For linguistic intelligence, these core operations include semantics, phonology, syntax, and pragmatics. In musical intelligence, the operations are not logical, empirical, or objective. The principal constituent elements are pitch, rhythm, and timbre (pp. 104-105), with which neurology and emotions have a critical modifying role. Gardner describes the core operations and developmental trajectory for the other "intelligences;" such as logical-mathematical, spatial, bodily-kinesthetic, and personal (inner- and interpersonal "intelligence").

Robert and Michele Root-Bernstein (1999) take the theory of multiple intelligences a step further. They argue that multiple intelligences are the media through which intelligence is expressed. According to them, thinking and creativity precede logical and verbal expression, and is experienced by the individual in pre-verbal ways. Thus, "knowing something" is experienced through the emotions, intuitions, visual images, and bodily feelings. The individual must then "translate" this knowledge into one or more of the different intelligences such as words, quantitative formuli, paintings, or gymnastics.

Herein lies part of the epistemological dilemma. Gardner himself freely concedes that there may be more or fewer "intelligences" than he describes, perhaps even "spiritual intelligence." He also describes different core operations that are involved in coming to know in any given domain. Each subject (e.g., music, math, or politics) differs in the core operations that relate those disciplines to the student. In all, perception of the otherness is based part in neurology (e.g., visual or aural acuity and sensitivity to pitch relations), part information processing and pattern recognition (grammar, rhythm), and part nurture (educational intervention). For it to be functional, epistemology must be context-appropriate. The wrong method yields blank looks and a shrug.

Furthermore, knowledge can be expressed in different ways. An abstraction such as "love" for example, can be expressed in verbal ways (poetry), graphically (sculpture of the Madonna and child), or interpersonally (experiencing the kindness of another).

Empiricism

We return now to routes to knowing. Empiricism as a method of inquiry has been the scientific standard as the method to discover knowledge and to describe truth. Empiricism relies on observation, experiment, and experience—on what can be observed, measured, and verified. Post-modernism is a reactionary epistemological stance and has been described by Sokal and Brickmont (1998) as epistemological agnosticism. The post-modernists can never know what is "real" because "reality" is a social construction. Post-modernism was promoted by the French in the 60s, and assumes that human understanding and science in particular are relative, culturally constructed, and contextualized. In answer to Pilate's question of, "What is truth?" the post-modernist asserts that there is no absolute truth—that truth is relative. I recommend to the reader, *Fashionable Nonsense: Postmodern Intellectual' Abuse of Science* by Sokal and Brickmont for a detailed discussion of specific abuses of postmodernist philosophers such as Jacque Lacan ("psychoanalytic topology"), Julia Kristeva (linguistics and semiotics), and Paul Virilio ("dromocracy," technology, communication, and speed).

The basic tenets of empiricism and post-modernism are also evaluated in the Bible. An interesting case of empiricism is described in Joshua 9:11b-14, 16, 18 (NIV). Israel had destroyed Jericho and the king and city of Ai as they advanced into Canaan. The Gibeonites knew they would meet the same fate and so in fear for their lives, they devised a ruse:

> They went as a delegation whose donkeys were loaded with worn-out sacks and old wineskins, cracked and mended. The men put worn and patched sandals on their feet and

wore old clothes. All the bread of their food supply was dry and moldy. Then they went to Joshua in the camp at Gilgal and said to him and the men of Israel, 'We have come from a distant country; make a treaty with us." The men of Israel said to the Hivites, 'But perhaps you live near us. How then can we make a treaty with you?' 'We are your servants; they said to Joshua. But Joshua asked, 'Who are you and where do you come from?' They answered: 'Your servants have come from a very distant country because of the fame of the LORD your God. For we have heard reports of him: all that he did in Egypt, and all that he did to the two kings of the Amorites east of the Jordan—Sihon king of Heshbon, and Og king of Bashan, who reigned in Ashtaroth. And our elders and all those living in our country said to us, 'Take provisions for your journey; go and meet them and say to them, 'We are your servants; make a treaty with us. This bread of ours was warm when we packed it at home on the day we left to come to you. But now see how dry and moldy it is. And these wineskins that we filled were new, but see how cracked they are. And our clothes and sandals are worn out by the very long journey." The men of Israel sampled their provisions but did not inquire of the LORD... "

According to the laws of nature, dry, moldy bread, cracked wineskins, and worn out clothes and sandals constitute empirical evidence that what the Gibeonites asserted was true. It was true that these objects were old. The data were carefully sampled. Peers validated the findings. But "three days after they made the treaty with the Gibeonites, the Israelites heard that they were neighbors, living near them." The empirical evidence was accurate but their conclusions were wrong because the Israelites did not ask the clinching question, "What Would God Say?" They were duped. The empirical evidence fooled them. The conclusion here is that central to all inquiry is listening for What Would God Say (WWGS, a corollary to the currently popular WWJD—What Would Jesus Do). This type of listening is not passive. It is interactive and relational.

The Genesis 3 passage of the Fall, provides another example of the limitation of empiricism as a way of knowing truth. It records that, "When the woman saw that the fruit of the tree was good for food and pleasing to the eye, and also desirable for gaining wisdom, she took some and ate it. She also gave some to her husband, who was with her, and he ate it. Then the eyes of both of them were opened, and they realized they were naked..." (Gen. 3:6-7) What

seemed so attractive was not what it appeared to be: observation and tangible data is only part of

the truth. Fooled again by the evidence!

Turning to a contemporary example, Sorajjokool (2002) examines the dark side of

empiricism in a study of child prostitution and the sex industry in Thailand. In the *Divine*

Conspiracy, Dallas Willard (1998) explores the paradox of which life is "the good life." In his

study, Sorajjakool skillfully shows how "the good life" has been socially constructed by media and

consumer forces that in turn, feed the sex industry even as it depletes the humanity of those who

are seduced by it. The seducer is seduced—like Eve was seduced by the serpent. In this case,

symbols of status and wealth, not knowledge is "the good life. But the outcome is the same:

suffering, untimely death. The "seed of greed lies within," Sorajjokool notes in the discussion of

Buddhism and the role of "tanha" (desire) to suffering (p. 101). The sex industry is a symptom of

the problem of "wants that have been intensified through social construction." (p. 106) He then

shows how the solution to ultimate meaning can be seen in Buddhist, Hindu, and Christian

theology and why materialism (as an expression of empiricism) has failed with such tragic

consequences.

Consumerism and materialism are a dark side of empiricism. The underlying assumption is

that what is worthwhile, "the good life" can be seen in relationships of cause and effect

(prostitution is a ready source of money), it is reproducible (prostitution works for others and can

work for me to get money), and it is measured by money, clothes, status, food. This empiricism

does not assign value to the intangible, e.g., dignity, hope, a healthy, happy mind and spirit. The

data is in about the side effects of this construal of "the good life" in Thailand: high rates of

prostitution and HIV/AIDS, increased mortality and morbidity, increased mental illness, and a

decrease in farmland and meaningful work and agriculture in rural areas.

About empiricism, Parker Palmer (1998, p. 52) notes that, "Objectivism set out to put truth on firmer ground than the whims of princes and priests, and for that we can be grateful. But history is full of ironies, and one of them is the way objectivism has bred new versions of the same evils it tried to correct." One version is the distrust that people have of their own knowledge (because it is "contaminated" by subjectivity) that renders them vulnerable to "'authorities' with a political agenda to seize power at moments of social vulnerability" (p. 53). "The cruelties of modern warfare are another outcome of objectivity run amok, just as the cruelties of the witch-hunt were the consequence of subjectivity gone mad." (p. 53). The application and testing of knowledge through engineering is as important as is inquiry. When such application of knowledge if for exploitive and cruel purposes, it is a misuse of truth. This calls for the need to cultivate "emotional intelligence" along with cultivating other types of intelligence. It calls for education of the whole person.

Post-modernism

We turn now to post-modernism as a way of knowing. Cultural relativity and the importance of cultural context has been substantiated in a range of issues. From the subjective (e.g., food preferences) to objective indicators (e.g., international morbidity and mortality rates), to language and consciousness (Whorf, 1956), a case is made against "objectivity" in favor of cultural relativity. Increasing globalization and cultural diversity has forced issues of cultural relativity into legal and commercial arenas. Differences in customs, values, aesthetics and illness determine the way in which people are born, live, and die. The documentation of culture-bound syndromes in mental diseases, such as the anthropophobia, *taijin-kyofusho* in Japan, illustrate how subjective perceptions create illness states that seem peculiar and odd to those outside of that culture (Beardsley, 1994). Cultural relativity cannot be ignored.

Post-modernist epistemology has garnered much praise but like empiricism, subjectivity is also inadequate as a way to truth. It has limits as an epistemology. The Bible also illustrates the limitations and danger, even, in exchanging absolute truth for culturally-defined, contextualized, personal perceptions. In 1 Samuel 28:8-25, Saul disguised himself and visits the Witch of Endor in a cave by night. Earlier in his reign, King Saul accepted as truth God's judgment that spiritists and mediums should be eliminated because they were evil. But now he rationalized why it was acceptable for him to reject God's direction, and the spiritist spun a web of deceit in which he got caught. He believed the apparition that he saw, not considering that it could be a lie. He relied upon his own perception and experience rather than upon what God had said it to be. When he did not get killed as the spirit had predicted, he made it a self-fulfilling prophecy by first falling on his own sword, and then begging a passerby to finish him off. In consulting a medium, Saul exchanged absolute truth for his own perceptions. Faulty perceptions lead him to taking his own life. He would not have been deceived had he accepted as absolute truth that mediums and sorcerers do not speak for God and must never be consulted. The truth would have saved him: the rejection of absolute truth killed him.

I had my own post-modernist struggle with God. I attended public schools and did not have personal religious knowledge until I was 17-years-old. My greatest struggle has been the temptation to intellectualize religious experience. For many years, I had difficulty believing that God really existed. The possibility of verifying God's existence was impossible because God is neither visible nor predictable in the empirical way of a mountain or even gravity. I had seen enough of mental illness and substance abuse to know that personal perception and experience is also unreliable, subject to manipulation and not subject to external validation by others. Like Tolstoy (1988) in his early life, I therefore concluded that forgiveness is a cultural and social

construction that Christians invented to deal with the problem of guilt. And heaven or salvation, I reasoned, is just a concept created to alleviate the fear of death and the unknown. None of those things really exist, they're just grown-up bedtime stories that people have made up to sleep better at night: to deal with fear, anxiety, and the need for life to be meaningful. The struggle of doubting God's existence persisted throughout the time I earned a Bachelor of Theology degree from the SDA Theological Seminary, Far East, in the Philippines. The paternal side of my family is Japanese and Buddhist. My father converted from Buddhism and was the only Christian in his family. Would half of my family tree be axed off and cast into the fires of hell because they happened to have been born in the "wrong" culture and religion? With so many religions and faiths, how was I so lucky as to have been born into "The Truth"? Faith or belief in God and the existence of absolute truth seemed ethnocentric and irrational to me.

But I have changed my mind. Allow me to tell you why and to propose to you that faith is "beyond reason". To say that faith is beyond reason does not mean it is irrational. Rather, it means that it is bigger than the box of empiricism. God and faith in God is simply beyond our ability to measure in empirical ways, although faith does and can manifest itself in a tangible manner. Wong (2002) comments, "Science being confined to a closed system and not admitting to other than the time-space-matter energy reality will find it difficult to understand the supra-dimension reality, where the transphysical mind and thoughts dwell."

Matters of faith are not limited by what can be empirically measured, but neither are they so relative as to rule out the existence of absolute truth. Sokal and Brickmont (1998) underscore that facts do matter, and some facts matter very much. You were born and are alive. These are facts and they matter. Some tenets of faith are likewise non-negotiable: God is love. God is forgiving. Jesus died to save sinners. It DOES matter what you believe.

The proposition that faith is beyond reason is to say that God is bigger than any of our epistemological paradigms to inquiry and knowledge. Paul summarizes the reason why faith is beyond reason this way in 2 Cor. 4:18, "So we fix our eyes not on what is seen, but on what is unseen. For what is seen is temporary, but what is unseen is eternal." The life of the mind and the life of the spirit reach beyond the confines of the material world to eternity.

What can be known about God can also be shared and validated in the community of faith. But impoverished is the person who has not also experienced the swell of ecstasy when the Spirit of God touches the heart in a most personal way: perhaps enveloped in the music of a thundering pipe organ and congregational hymn of praise, or perhaps in the grief of quiet moonlight, pleading for and receiving help and comfort from God. Yes, there is a place for the post-modernist in the life of the spirit.

Nevertheless, intellectual slothfulness can masquerade behind the mask of post-modernism. Subjectivity can be intellectual anarchy. It can make it impossible to learn from whatever is studied or to apply its lessons to improve education, a technical or surgical procedure, or anything at all. It can avoid the hard work of thinking by pointing to reams of narrative text without saying how it relates to the body of literature and what is already known. It can be used to evade engagement with others—an epistemological shield to justify haphazard scholarship and disengagement from others.

More importantly, it can challenge the possibility of a knowledge of God being shared beyond the mystical dyad of "God and me." Is it possible to know something or someone? The more fundamental epistemological question is, "Is it possible to know God?" The theological follow-up to this is, "Can God be trusted? "Is God who He claims to be?" Graham Maxwell (1977) proposes that the way to know God and the answer to the question of whether God is true

and trustworthy is an empirical one. "Only by the demonstration of trustworthiness over a long period of time and under a variety of circumstances can trustworthiness be convincingly established." (Maxwell, 1977, p. 8)

As a child, I can remember staring into the aquarium, waiting to see the tail drop off the pollywogs we caught in our pond. After days of nothing happening except for the pollywogs' bellies growing bigger, I suddenly noticed those almost-not-there tiny legs lamely dangling from the white bellies. My gaze shifted to the tiny legs as they seemed to move. They grew larger over the following days until it was clear that they had moved. Soon hopping frogs, bulging eyes on top their heads, leapt from bank to pond on summer days. I never did see what happened to those pollywog tails but there was no question in my young mind about where those frogs came from.

So when a doctoral student, defending his qualitative study of charter schools said, "You'll just have to trust me," I balked. I had asked how his pollywogs got to be frogs, and whether or not anyone else had seen it too. He pointed to the stacked transcripts of his interviews with the principals of charter schools, "It's all in there. I'm a good person. You'll just have to trust me"

Another doctoral candidate answered, "I don't know" to how the qualitative research she had done of role models of successful women was any different from a novel in its generalizability to the social-behavioral sciences. Certainly fiction can powerfully illustrate profound values and concepts (e.g., Tolstoy's *Anna Karenina*), but what is the burden of the qualitative researcher to relate his or her study (the "data") to what is already known (typically, the "literature review") or to what else needs to be known (the "discussion")? And to what degree should peer review validate the findings of qualitative/post-modernist research? Can such truth be known only at the individual level or can it also be known by a community? Is it always particularistic and contextualized beyond any hope of relationship to any other context?

Relationship is a key concept here. Even God, who has the power to do so, does not use authority to command trust. Trust in God grows out of a relationship with him. Teachers can also provide students with an experience of a relational type of epistemology. Such epistemology uses core operations so that the unknown is perceived, analyzed, and interpreted. Next, a relationship to the subject is created through manipulation of core operations. This is validated in community, and substantiated by evidence. Relationship thus becomes both a vehicle to and a context for knowledge.

Epistemology and Relationships

What do theories of intelligence and epistemology have to do with the work of the educator? Disciplines have specific ways of determining what can be known. It is the job of the educator to teach students how to use those methods. Theology and the study of religion rely on bibliographic methods and appeals to authority, while the clinical sciences turn to observation, examination, radiologic imaging, and a whole laboratory of diagnostic testing. In the basic and natural sciences, quantitative methodologies are mainstream. In the social-behavioral sciences (anthropology, education, social sciences) a drift from empiricism towards subjective methods such as ethnography and case studies better reflect the cultural context at the expense of generalizability. But in literature or art there is little use for measurement, replicability, numbers and "facts." Qualities of beauty, culture, and aesthetic are personal and there is limited value in quantifying or manipulating such "data," if they even can be called such. What can be known about these areas is personal, specific and may not generalize beyond an individual context.

It is certainly right and indeed, students are expected to learn to use intellect, senses, knowledge, and skills in both the professional and personal life. The faculty have failed in their task if students are unable to do this. There is a place for empiricism, logic, critical analysis, and

knowledge of the laws of science. Students master examination skills, and draw on personal

experience, imagination, cultural sensitivity, and consultation with others. All these are valid

methods by which we come to understand the world around us. But in all of this, it is imperative to

maintain an attitude of inquiry that reflects a relationship to God. Otherwise, the Gibeonite mistake

is repeated again. Even if peers carefully validate and analyze the empirical evidence such as in the

case of the sex industry in Thailand, the conclusion might be wrong. We should encourage

students to use their intellect and keenest powers of observation. They should consult

bibliographic sources and analyze data using whatever data analytic technique is appropriate to the

data. But epistemology is incomplete when inquiry is made independent of God and all God

represents.

According to Vygotsky (1978), experiencing a relationship in which knowledge is mutually

constructed is fundamental to the development of human cognition. The social construction of

knowledge also occurs in the classroom. Palmer (1998, p. 51) proposes that our assumptions about

what truth is directly affects our approach to teaching: "If we regard truth as something handed

down from authorities on high, the classroom will look like a dictatorship. If we regard truth as a

fiction determined by personal whim, the classroom will look like anarchy. If we regard truth as

emerging from a complex process of mutual inquiry, the classroom will look like a resourceful and

interdependent community. Our assumptions about knowing can open up, or shut down, the

capacity for connectedness on which good teaching depends."

Palmer contends that "knowing of any sort is relational, animated by a desire to come into

deeper community with what we know." He elaborates: "Knowing is how we make community

with the unavailable other, with realities that would elude us without the connective tissue of

knowledge. Knowing is a human way to seek relationship and, in the process, to have encounters

and exchanges that will inevitably alter us. At its deepest reaches, knowing is always communal."

(p. 54). The New Testament refers to such "knowing" as a level of intimacy in which the other's

voice is known (the shepherd and his flock of John 10). Jesus later said, "If you really knew me,

you would know my Father as well. " This describes a relational knowledge that is generalizable

rather than specific (John 14:7). A few chapters later this relational knowledge is reemphasized in

the prayer of Christ: "Righteous Father, though the world does not know you, I know you, and

they know that you have sent me. I have made you known to them, and will continue to make you

known in order that the love you have for me may be in them and that I myself may be in them."

(John 17:25-26). A relational epistemology can be threatening to relationship-phobic individuals

who have been hurt by someone to whom they were vulnerable.

As with other subjects, this knowledge has its own "core operations." I would like to

propose that the key core operations through which such knowledge is gained is by study of nature

(Rom. 1:19-20) and through the mediation of the Spirit of God (1 Cor. 2:10-14). It is the Holy

Spirit that interprets and enables receptive minds to perceive and understand spiritual truths (John

14:16-17, 26; 15:26; 16:13-15). Indeed, Pinnock (1999) writes that relationality is an essential

quality of the Trinity, and that the Holy Spirit is that which creates and enables communality.

An epistemology this relational can only be personally experienced. Social scientist would

describe this to be the building of social capital. Empiricist or post-modernist, whatever inquiry

method is right for the question, the ultimate epistemology is this: WWGS. By developing

epistemological fluency and experiencing a safe relationship in the classroom in which to explore,

students can begin to think and come to know truth for themselves. To enter into that environment

with students and develop their proficiency with the core operations that facilitate engagement with

the subject is the challenge for the educator.

Questions:

What are the core operations that facilitate engagement with the subject in what you teach?

What would it mean to build social capital in the classes you teach?

How might you foster epistemological fluency in your students?

How might you foster engagement and relationship with God, content, and students and in your classes?

References

Beardsley, L. M. (1994). *Medical diagnosis across cultures.* In W. J. Lonner & R. S. Malpass

(Eds.), Psychology and Culture (pp. 279-284). Boston: Allyn & Bacon.

Gardener, Howard. (1983). *Frames of mind: The theory of multiple intelligences.* New York:

Basic Books.

Maxwell, A. G. (1977). *Can God be trusted?* Nashville: Southern Publishing Association.

Palmer, P. J. (1998). *The courage to teach: exploring the inner landscape of a teacher's life.*

San Francisco: Jossey-Bass.

Pinnock , C. H. (1999). *Flame of love: a theology of the Holy Spirit.* Downers Grove, IL:

Intervarsity Press.

Root-Bernstein, R. and Root-Bernstein, M. (1999). *Sparks of genius.* Boston: Houghton Mifflin.

Sokal, A. & Brickmont, J. (1998). *Fashionable nonsense: postmodern intellectuals' abuse of*

science. New York: Picador.

Sorajjokool, S. (2002). *Child prostitution in Thailand: listening to Rahab.* NY: The

Haworth Press.

Tolstoy, L. (1988). *A Confession and other religious writings.* (Penguin Classics). Penguin USA

Vygotsky, L. S. , edited by M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, E. (1978).

Mind in society: The development of higher psychological processes. Cambridge, MA:

Harvard University Press.

White, E. G. (1952). *Education.* Mountain View: CA. Pacific Press Publishing Association.

White, E G. (1948). *Testimonies for the church* (Vol. 6). Mountain View: Pacific Press.

Whorf, B. L. (1956). *Language, thought, and reality: selected writing by Benjamin Lee Whorf.*

Cambridge, MA: MIT Press.

Willard, D.   (1998). *The divine conspiracy: rediscovering our hidden life in God.*

HarperSanFrancisco.

Wong, John B. (2002). *Christian Wholism: Theological and Ethical Implications in the*

Postmodern World. Lanham, MD: University Press of America.

C:\MyFiles\Speeches\Epistemology-Korea.doc 1/9/03 9:05 AM