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Comprehensive Examination for Cognition and Instruction

Philosophy of Teaching and Learning

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Statement of Philosophy

Is learning an individual activity? Is cognition an internal process or embedded and embodied in the environment? How do kids think and learn? How should educators teach kids to think and learn? What is learning and thinking? Do Chinese children learn differently from American children: or a better question might be, do Chinese and American cultures value and define learning and thinking in different ways¹? Some of these questions I have raised can be answered through one's philosophical beliefs, some have to be answered via research and a through understanding of both cultures. As I enter academia, I have a goal which is to formalize my own approach, grounded in theory and research, and reflecting both western and oriental cultures, in which my students will be free of boundaries, acting as reflective, creative, self-disciplined, goal-oriented learners and passionate about learning throughout life.

In order to realize my goal, I believe certain tenets of learning and thinking are optimal. In the following section, I will present the essential tenets of learning, thinking and teaching that are supported by ecological psychology and sociocultural constructivist perspectives. Furthermore, with the intention of bridging oriental and western cultures and philosophy, these tenets are also enhanced by Confucius teachings. As Confucius² said: "To study and not think is a waste. To think and not study is dangerous" (Analects, 2:15). Thinking and learning cannot be separated; they are in service with each other.

Thinking (Cognition) Is Embedded and Embodied

Actual thought is always embodied in action (Dewey, 1910). Thinking is in service to action, thinking is not just about action. Thinking is an effectivity that humans have to guide action. Clark (2001) depicts that "the flow of thoughts and the adaptive success of reason are now seen to depend on repeated and crucial interactions with external resources" (p. 69).

This belief reflects the ecological psychological fundamental of the interaction of agent and environment, which is whole-body embedded in lived-in world experiences (Young, 2004). Perception is always for some goal, which leads to some action providing a change in the information to be detected. Change is the essential element, the essence of a dynamic system. Change (variance) and stability (invariance) are critical information to be detected and acted on (Young, Barab, & Garrett, 2000). Action, particularly moving one's body in space, as well as more cognitive actions, is an essential part of an ecological psychological description of thinking (Young, 2004). Activity drives perception, which drives action, and from the ecological psychology perspective, activity is taken to be an inevitable part of thinking (Young, 2004).

Learning Is Defined as the Education of Intention and Attention

Once, when Confucius² was in Chen, he said, "I must return! I must return! My young disciples are wild and unbridled. Though they are developing well, they don't always know when to restrain themselves" (Analects, 5:22).

In Confucian philosophy, students can be taught to be restrained in order to fulfill their development. Expressed in ecological psychology vocabulary, novice learners can be can be "tuned" to detect information in the environment that they might not initially notice (Young, 2004). Such "attunement" can take place through direct instruction, as a more knowledgeable person acts together with a more novice perceiver. Young (2004) further asserts that new intentions can be induced through experiences with other people, as one student perceives another student operating within a shared environment. The actions of one student, then, can attune another to detect an affordance, enabling the perceiver to achieve a goal and also induce them to detect similar functional values in the environment in the future (Young et al., 2000). The resultant tuning of attention, along with the induction of new goals, represents the education

of attention and intention that define learning (Young, 2004).

Young (2004) precisely defines learning from the ecological psychology perspective as the tuning of attention and intention, a differentiation process rather than a building up of associations as is the definition of learning from an information processing perception. An attuned exploring agent can pick up affordances of an environment directly through exploration, discovery, and differentiation (Gibson & Spelk, 1983, as cited in Young, 2004). So teaching occurs in the learning environment in which associated tools, activities, and instructions should serve to highlight important distinctions and focus the students' attention on previously unnoticed uses for things in the world (Young, 2004).

Learners Are Distributed, Multidimensional Participants in Sociocultural Process

Tzu Hsia, one of Confucius² disciples, said: "If you can treat the worthy as worthy without strain, exert your utmost in serving your parents, devote your whole self in serving your prince, and be honest in speech when dealing with your friends, then even if someone says you are not learned, I would say that you are definitely learned"(Analects, 1:7).

Sociocultural constructivism has its roots in Vygotsky's notion of the Zone of Proximal Development (ZPD). Achievement within the ZPD depends on social interaction, such as guidance and collaboration (Vygotsky, 1978). Cognition consists of dialectical relations among people acting, the contexts of their activity and the activity itself (Lave, 1988). The sociocultural approach emphasizes the socially and culturally situated context of cognition (Duffy & Cunningham, 1996). "Thinking is always dialogic, connected to another, either directly as in some communicative action or indirectly via some form of semiotic mediation: signs and/or tools appropriated from the sociocultural context" (Duffy & Cunningham, 1996). Learning then becomes a process of dialogue and negotiation with and within a local sociocultural context.

In the Confucian tradition, learning is more than intellectual, academic study, or the accumulation of facts. It is also the process of manifesting one's humaneness by developing oneself in self-reflection through the various types of human relationships.

Knowledge is a construction “by participants in a community that simultaneously transforms and is transformed by such participation” (Duffy and Cunningham 1996, p. 9). It is this mutual change that is crucial, not individual constructions of the activity. Instructions that are designed embracing this principle create learners who celebrate multiple perspectives, and expand their web of understanding. The students’ lifeworld varies; consequently they bring different life experiences. Human knowledge is initially developed as part of collaborative interactions with others of diverse skills, background and perspectives joining together in a community of learners engaged in common practices centered on the specific domain (Kalantzis & Cope, 2000b).

Even though I applied two theoretical approaches to support the three tenets of my belief of learning and thinking, they are not contradictory, they complement each other in that both learning and thinking are embedded in the environment at a individual level and at a social collective level. Both approaches view human knowledge as embedded in social, cultural and material contexts. Summarized in The New London Group’s view of mind, society and learning are based on the assumption that the human mind is embodied, situated and social (Kalantzis & Cope, 2000b).

A Cognitive View of Learning

Contrasted to the ecological psychology and sociocultural approaches, the cognitive approach believes knowledge exists in the head; knowledge is a process of active cognitive

reorganization of representations. There are a variety of perspectives and emphases within cognitive psychology that have impacted educators' thinking about how to improve teaching and learning. Gagne, Briggs, and Wagner (1992) developed nine events of instruction based on external and internal conditions. These internal conditions are brought into play by a set of transforming processes represented in information-processing theories of learning and memory (Gagné, 1977). Briefly, the information flows in the following sequential manner: body's receptors sense the information; the act of selective perception takes place within a sensory register; the information may then be stored temporarily in working memory; after existing in working memory for less than one second, the information is subject to rehearsal and may be moved to long term storage; semantic encoding takes place upon rehearsal of the information to be stored and the information is permanently stored in long term memory and is subject to search and retrieval; the processes of search and retrieval are performed by the response generator, which can initiate recall directly from long term memory or move the information into working memory; the response generator then tells the effectors or muscles what action to take and the response can be emitted back to the environment. In summary, this process characterizes the computational transformation of internal representations, which is argued by Clark (2001) as a throwback to the idea of brain as disembodied kind of intelligence.

Haugeland (1991, as cited in Clark, 2001) states that these mental representations of the environment are not always reliably present to the learner and so must have something else in place of directly detectable affordances, stand in and guide behavior. That "something else" is part of a more general representational scheme that allows the standing in to occur systematically and allows for a variety of related representations states. These representations are explained in Gibson's (1986) notion of invariance within an information field across situations which lead to

an ecological psychology description of cognitive psychology concepts of schemas and scripts, which is seen as the invariance detected across similar situations, not stored in memory but detected on the fly (Michael F Young et al., 2000). In a similar manner, Clark (2001) states “the kinds of solutions that do work often merge the processes of reasoning and acting in an expected ways, and cut back and force across the traditional boundaries of mind, body and the environment” (p. 68).

Education in the Next Twenty-Five Years

“Employers now want people who will take *initiatives* to solve problems and who will bring *diversity* -- especially diverse perspectives -- to the workplace”(Reigeluth, 1999). Thus we owe children to educate them in the "new literacies" for the 21st century (Collins, 1996; Donald J. Leu & Kinzer, 2000; Reigeluth, 1999). Research has shown that wise integration of technology-assisted learning environments allows learners to solve problems effectively (Ge & Land, 2003; Schlager, Fusco, & Schank, 2002; Uribe, Klein, & Sullivan, 2003), shorten the gaps of communication among cultures (Schlager, Fusco, & Schank, 2002), enhance knowledge construction (Derry, Gance, Gance, & Schlager, 2000; Moallem, 2003) and engage and motivate children (Barab et al., 2003). Well designed learner-centered learning environments facilitate teachers action on pedagogical change (Pedersen & Liu, 2003; Zheng, 2003). I, therefore, advocate that future education practices focus on empowering children in the “new literacies” for the 21 century through teachers’ willingness and readiness to infuse technology in classrooms.

Teachers’ willingness and readiness should be realized through education of intention and attention. Teacher programs and professional development should be designed to induce teachers’ to the goals towards educating for the 21st century through seamless technology integration.

One bad thing I can see occurring in the next 25 years is using technology in instruction for the sole purpose of preparing students to pass standardized tests instead of wise use of technology for the “new literacies”. Cuban (2002) has pointed out the problem of oversold and underused computers in classrooms. Leu (2000) states that in order to be literate in the 21st century, one has to be able to function in collaborative teams, have strong problem solving skills and be effective in collaborating and communicating with the Information and Communication Technology.

To Karlantzis & Cope (2000a), productive diversity, compared to Fordism and Post-Fordism, is the only process in education to realize inclusion and equity. In my point of view, inclusion and equity are the essential social bases that will promote the “new literacies”. Instead of attempting to force cultural homogeneity upon people whose lifeworlds are diverse, we should design to ‘capitalize on the talents of diversity’. In education, “this requires an epistemology and a pedagogy of pluralism – a particular way of knowing and learning a world in which local diversity and global proximity have become factors of such critical importance” (p.129). The instructional designers’ job, such as mine, is to design learning environments that reflect the pedagogy of pluralism utilizing both ecological psychology and sociocultural constructivism approaches. Thereafter, my attempt of bridging oriental and western philosophy, and understanding how an individual learns within an information rich environment has promise to contribute to the epistemology of mind, culture and technology.

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Appendix A - Statement of Philosophy Requirement

During completion of your coursework, you have encountered many theorists and scholars who have espoused tenets of thinking, teaching and learning. In 8, double-spaced pages or fewer (APA guidelines, references, tables, figures not included in 8 pages), present a statement of philosophy that describes three of your tenets regarding best cognition and instruction practices. Of course, it may be obvious that teaching and learning positions complement one another. As you present these points of view, refer to at least one philosopher, psychologist, or educational psychologist who holds similar viewpoints. Additionally, introduce the ideas of at least one philosopher, psychologist, or educational psychologist who would express opposing views to yours. Emphasize at least one major difference between your views and those of the opposing ones. With respect to this difference, argue why you think your view is better for the enhancement of thinking, teaching and/or learning.

Then as you begin to close your statement, we ask that you think about the future given your philosophical views. Be visionary. List one good and one bad thing that you think likely to happen to education in the next 25 years. How might your philosophy or associated practices help us realize this "good thing" or avoid/overcome the "bad thing" that you envision for us? Your response will be evaluated for:

- a) your ability to state your philosophical views clearly
- b) your accurate reference to and description of the viewpoints/works of others
- c) the overall cohesion and semantic clarity of the full response including accurate use of APA style
- d) your ability to hypothesize about the impact of your philosophical views for the future.

Footnotes

1. I chose to use Chinese and American as instances of culture differences because I consider myself fluent in both languages and culture awareness to a certain degree. There is no attempt to neglect other cultures.
2. All Confucius teachings cited in this document were retrieved March 10, 2004, from <http://www.human.toyogakuen-u.ac.jp/~acmuller/contao/analects.htm>