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Comprehensive Examination for Cognition and Instruction

Philosophy of Teaching and Learning

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Statement of Philosophy and Pedagogy

Learning goals for schools have undergone significant changes in the last century (Bransford, Brown, & Cocking, 2000) and will continue to change more rapidly as new technologies emerge to redefine what it means to be educated and literate in today's society (U.S. Department of Education, 2004). Consequently, these changes demand that we think in new ways about how people learn and the implications for designing learning environments. Bransford et al's (2000) synthesis of scientific studies of cognition and learning suggest effective instruction provides opportunities for learners to actively build on pre-existing knowledge through inquiry and metacognitive reasoning. During this process, "a deep understanding of subject matter transforms factual information into usable knowledge" (p. 16). These ideas embody the tenets presented below in my statement of philosophy and pedagogy.

I define learning as a process of real-life practice experiences that generates engagement and an understanding of how to think deeply, work collaboratively, and communicate effectively. I believe the primary goal of teaching is to foster "active learners who seek to understand complex subject matter and are better prepared to transfer what they have learned to new problems and settings" (Bransford et al., 2000, p. 13). More specifically, I believe: (1) learning involves an interaction between social, behavioral, and personal factors; (2) learning goes beyond knowledge acquisition to knowledge construction and transformation; and (3) learning, particularly in the context of new literacies, is authentic and distributed among a community. After describing how these central tenets ground my beliefs about effective cognition and instruction, I envision the most important learning principle for the future and briefly discuss its implications for instruction, assessment, and research.

Learning involves an interaction between social, behavioral, and personal factors

After working closely with learners of all ages for almost 20 years, I believe that learning and development represent an interaction between social, behavioral, and personal factors. This belief is grounded in social cognitive perspectives that contend people learn best when they watch and interact with others (e.g., Bandura, 1986; Rosenthal & Zimmerman, 1978). Bandura (1986) described learning as a combination of actions and observations that both inform and motivate individuals. In a social

environment, models of effective and ineffective behavior constantly surround learners. Like Albert Bandura, I believe individuals learn first, by attending to behaviors they believe will result in social acceptance, and, second, by internalizing their observations as standards for future ways of thinking and behaving. Furthermore, I assume that what is learned through observation is not always demonstrated in performance unless those behaviors are somehow reinforced by others in the environment.

Interestingly, in my early experience teaching students with behavioral difficulties, much of my work centered around attempts to shape learning through operant conditioning processes (Skinner, 1953) such as reinforcement, punishment and successive approximations of more appropriate actions. Although these behavioral methods were effective for temporarily changing behavior, I soon came to realize that learning and transfer is much more complex. In contrast to John Watson's (1924) behaviorist notions that environmental factors are the primary determinant of learning, I now believe that personal factors (e.g., motivation, self-concept and cognitive schemata) interact with behavioral and social factors (e.g., Bandura, 1986) to impact learning.

In terms of affective personal factors, students are more motivated to attain their goals and internalize what they have learned over time when they are given opportunities to set their own learning goals, assess their performance, and reflect on their progress. "Goals motivate people to exert effort necessary to meet task demands and to persist at the task over time" (Locke & Latham, 1990, as cited in Schunk, 2000, p. 101). Moreover, allowing individuals to set their *own* goals reinforces self-concept and sustains motivation for setting future goals (e.g., Schunk, 1985; 1989).

Similarly, a student's cognitive schemata of how, why, and when certain strategies are useful play a role in how well he/she applies learning to new situations. With regards to my interests in reading development, the assumption that reading requires declarative (knowing what), procedural (knowing how) and conditional (knowing when) knowledge (Paris, Cross & Lipson, 1984) greatly influences my beliefs about effective cognition and instruction practices in the classroom. Studies show that explicit models of strategic thinking can foster general learning and performance (e.g., Rosenthal & Zimmerman, 1978; Schunk, 1982) as well as specific awareness of comprehension strategy use, reading achievement,

and self-efficacy for effectively applying strategies in new reading situations (e.g., Palinscar & Brown, 1984; Paris, et al., 1984; Paris & Oka, 1986). Over time, students develop the cognitive ability to attend to important cues about procedures and context and then self-regulate their strategy use accordingly.

Information processing theories also help to explain some of my assumptions about how learners attend to their environment. For instance, instruction organized in meaningful ways that link to students' prior experiences and personal interests draws in learners and provides a framework for later recall and transfer to new experiences (Ausabel, 1968). In addition, opportunities to actively elaborate how new knowledge fits in with old knowledge strengthen schematic connections (Anderson, 1990) and make learning more personally meaningful.

This tenet, then, combines behavioral, cognitive, and social cognitive perspectives to frame my belief that effective teachers invite students to be active participants in the learning process and provide explicit models of strategic thinking in diverse situations. Good teachers share their thinking about how to seek out important cues from others to better understand certain mindsets and behaviors most appropriate for each learning context. Effective instruction is personally relevant and connected to each student's prior knowledge and experiences. Furthermore, it provides opportunities for students to set their own learning goals; to seek out and interact with expert models; to solve important problems; and to reflect with others about what they have learned and how it fits in with other ideas learned previously. Likewise, assessment practices should provide outlets for students to actively demonstrate what they have learned before an authentic audience. As others reinforce their abilities, students feel more capable and motivated to seek out new learning opportunities. Thus, the best instructional practices combine opportunities for students to observe experts, think strategically in diverse learning situations, and perform before a receptive audience.

Learning goes beyond knowledge acquisition to knowledge construction and transformation

In contrast to transmission models of learning where learners passively acquire knowledge by memorizing long lists of facts, I believe *meaningful* learning (Jonassen, Howland, Moore, & Marra, 2003) is represented only when individuals construct, convert and transform knowledge into an original form.

Furthermore, I believe that “knowledge derives from interactions between persons and their environments” (Schunk, 2000, p. 231). This second tenet is grounded in constructivist notions influenced by theorists such as Jean Piaget, Jerome Bruner, Lev Vygotsky, and David Jonassen.

Piaget (1970) contends that as learners interact with their environment, their development progresses through four distinct and sequential stages that reflect changes in their cognitive structures. He argued these developing cognitive structures determine at what point learners are able to think logically, reason abstractly, and grasp new ideas. However, while I recognize these stages as guideposts for learning, I believe that Piaget’s stages oversimplify the learning process. Like others (e.g., Byrnes, 1996), I would argue that individuals differ in how they move through these stages, dependent upon personal characteristics and factors in their environment.

Bruner (1964), for example, highlights learning as represented by three developmental levels of cognitive processing (e.g., enactive, iconic, and symbolic) that suggest learners can represent knowledge in different ways. Thus, while Piaget would argue learners should not be presented certain information until they are developmentally ready, Bruner contends that developing learners understand similar concepts in progressively more complex ways. In accordance with these ideas, I believe learners should not be sheltered from information seemingly too complex, but rather, that they should have repeated opportunities to construct their understanding of a particular concept at *each* level of development. To me, instructional practices that revisit content spaced over time (e.g., Dempster & Farris, 1990; Saxon Publishers, 2002-2003) or that challenge students within a spiral curriculum (e.g., Reigeluth & Stein, 1983) exemplify theoretical perspectives that acknowledge how learners construct meaning over time in personally relevant ways.

Similarly, Vygotsky’s (1978) and Jonassen’s (1996) ideas about how best to design learning environments have profoundly influenced my perspective. Vygotsky’s (1978) theory of a zone of proximal development that represents the distance between what learners can accomplish independently and “the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86) affirms the constructivist notion that social activity and

interaction produce learning. Thus, effective teachers are those who challenge students to take risks while remaining available to support and model alternative strategies if students falter. Moreover, I believe, the best teachers communicate to students the ultimate goal of self-regulation and independence, and gradually release their support until that goal is accomplished (see, for example, work by Campione, Brown, Ferrara, & Bryant, 1984 or Pearson & Gallagher, 1983).

Finally, Jonassen (1996; Jonassen et al., 2003) has proposed that technologies, if used appropriately, effectively support problem solving and facilitate a learner's authentic and meaningful construction of knowledge. Jonassen's work, and the New London Group's perspective that characterizes multi-literate learners as social designers who use technology to redesign and transform information (Cope & Kalantzis, 2000), has caused me to broaden my constructivist notions to consider ways in which global diversity, multimodal texts, and new technologies influence personal meaning construction and literacy learning. Most recently, this thinking has influenced my work with colleagues as we conceptualize a theory of new literacies (Coiro, 2003; Coiro, Knobel, Lankshear & Leu, in progress; Leu, Kinzer, Coiro & Cammack, 2004). This evolving theoretical perspective suggests that new sets of reading and writing strategies are required to identify important problems and then effectively use rapidly changing technologies to locate, evaluate, synthesize, and communicate information that prompts solutions to these problems. We believe that we must provide students with authentic opportunities to construct meaning as they make sense of the world using new information and communication technologies (ICT) if we are to effectively prepare them for their literacy futures.

Consequently, this second tenet suggests effective teachers challenge learners to take risks, be creative, and use the range of ICT resources available to construct developmentally appropriate responses for diverse audiences and purposes. Effective instruction selectively supports learners as they revisit tasks at spiraling levels of difficulty. Learning situations are designed to prompt active involvement through manipulation and social interaction. Similarly, assessment provides time for reflection and space for students to apply foundational and new literacies to transform their knowledge into something they can call their own. In this regard, while I would agree *some* aspects of factual knowledge are most

efficiently learned through a transmission model (e.g., Schwartz & Branford, 1998), the most effective learning environments expect learners to be active, constructive and critical, which in turn, fosters deeper levels of understanding and personal meaning-making.

*Learning, particularly in the context of new literacies, is authentic and distributed among
a community*

This tenet first asserts that effective teachers employ authentic instructional practices (Newman & Wehlage, 1993) that integrate collaborative knowledge construction and disciplined inquiry while engaging students in solving real problems that occur in the broader scientific or social community. According to this perspective, authentic learning tasks connect students to real world experiences beyond the classroom; create a social support system; induce deep, higher-order thinking; and produce substantive conversation. Our new literacies research team has been exploring instructional practices that employ these authentic dimensions of learning using new technologies across the K-12 curriculum. These practices include Internet Workshop, Internet Project, Internet Inquiry (Leu, Leu, & Coiro, 2004), and most recently Internet Reciprocal Teaching (Leu & Hartman, 2004), which adapts Palinscar & Brown's (1984) model of comprehension strategy instruction to Internet learning contexts.

This tenet is also grounded in work that suggests communities of learners effectively foster student knowledge and expertise while challenging traditional models of student-teacher relationships (e.g., Brown, Ash, Rutherford, Nakagawa, Gordon & Campione, 1994). Such communities are built upon principles of distributed expertise and the mutual exchange of ideas. In these contexts, teachers recognize and value the important contributions diverse students bring to their classroom community. Effective teachers willingly invite students into a collaborative partnership of knowledge construction through negotiation and consensus building (e.g., Jacobson & Levin, 1995; Roth, 1998).

This tenet synthesizes important aspects of our new literacies perspective that suggest (a) learning is often socially constructed and (b) teachers become more important, though their role changes, within new literacy classrooms (Coiro et al., in progress; Leu et al., 2004). Today, many young students possess higher levels of knowledge about some new literacies created by new technologies (e.g., weblogs, instant

messenger, multimedia presentations). Consequently, effective learning experiences will be increasingly dependent on social learning strategies and the ability of a teacher to distribute knowledge about foundational and new literacy strategies among all members of the classroom community.

Vision for the future

While realizing that several others have devoted years of their work to exploring these same issues (e.g., Bruce, 2003; Lankshear & Knobel, 2003; Leu & Kinzer, 2000; McKenna, Reinking, Labbo, & Kieffer 1998), I thought I would focus here on the ways I have been personally struggling with how best to envision the future. Over the past four years, my writing has caused me to carefully consider how diverse perspectives of language learning, technology use, and literacy practices influence future conceptions of learning (e.g., Coiro et al., in progress; Coiro, Karchmer & Walpole, in press; Leu, Castek, Coiro, Gort, Henry & Lima, 2004; Henry, Coiro & Castek, 2004). Moreover, my personal experiences and observations of others who use the Internet (e.g., Coiro & Dobler, 2003; 2004) are constant reminders that rapid changes in technology will continue to transform our understanding of literacy and its implications for instruction, assessment and research.

If I were to envision the most important learning principle for the future, it would be that **we must not only accept, but also embrace change and diversity as central dimensions of teaching and learning**. Rapid transformations in technology suggest we can no longer expect learning theory, research methodologies and curriculum standards to remain steady while we investigate their plausibility in our work. Similarly, the increasing diversity in our student population suggests we can no longer assume the English language and American culture are the dominant social practices represented in our classrooms.

In this context, then, a “*good thing*” likely to happen in the next 25 years would be that theorists, researchers, educators, and policy makers embrace the rapid changes in literacy, learning, and technology in ways that take advantage of diversity in culture, language, ability, and performance. In this case, (a) instruction would provide authentic interactions and collaborative networking opportunities that encourage multiple lenses in problem solving and multiple languages for idea exchange both inside and outside school classrooms (e.g., KIDLINK, 2004; UNICEF, 2004); (b) assessment would integrate open-

ended and performance-based online strategy use (e.g., Educational Testing Service, 2004; Quellmalz & Kozma, 2003) with more traditional measures of declarative domain knowledge; and (c) research would integrate new tools and methodologies for exploring online learning processes (e.g., Kinzer, 2004; Wyatt-Smith, 2004) with new Internet models of peer review (e.g., Bingham & Coleman, 1996) and more efficient dissemination paradigms to ensure that research-generated knowledge leads, and does not follow, the changing landscape of new technologies that generate even newer literacies.

Likewise, if we are not careful, a “*bad thing*” that may occur in the next 25 years would be that we ignore, or worse yet, directly oppose practices that recognize new technologies, rapid change, and diversity as critical dimensions of teaching and learning. In this case, a) instruction would continue on its current trend toward scripted skills-based practice that fosters superficial understanding of concepts within decontextualized tasks; (b) assessment measures would become increasingly invalid due to the continual emergence of new and more complex strategies required to learn and communicate with the Internet in our daily lives; and (c) research paradigms would continue to reflect more traditional randomized field trials with “dependable inferences” (see Chatterji, 2005, p. 3) rather than “more complete and effectual research designs” (p. 3) that contextualize research variables and adequately reflect the inherent complexity of contemporary theories of learning with technology (see also Johnson & Onwuegbuzie, 2004).

With both of these paths clearly in mind, I believe each of us, from learning theorist to researcher to classroom teacher, has a responsibility to insure successful futures for students learning in a digital world. As an aspiring professor, if I am able to motivate others to adapt their practices in ways that embrace change and diversity while considering the role of new technologies in literacy-learning and development, I will have felt as if I have made beginning strides toward empowering students to think deeply, work collaboratively and communicate effectively.

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Appendix A – Statement of Philosophy and Pedagogy

During completion of your coursework, you have encountered many theorists and scholars who have espoused tenets of thinking, teaching and learning. In 8, double-pages or fewer (Compliant with APA guidelines; references, tables, figures are not included in 8 pages), present a statement of philosophy and pedagogy 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 give 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 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