Using the UGA CTL Framework in the Education of Teachers

At times the pressures of research, entrepreneurial grant seeking, and the generally competitive atmosphere at a research university makes collaboration among faculty very difficult. Waddock and Walsh apparently agree:

> *"For far too long academics have operated in what is denigratingly called the ivory tower. Separated from the very real problems of their communities, too many university faculty, even in professional disciplines, engage in arcane discipline-based research and publication that is mostly incomprehensible, or worse, irrelevant to the practitioner in the field."* (Waddock & Walsh, 1999, p. 244).

In spite of these and other pressure that represent daily life in a research university, many of the faculty at the University of Georgia, College of Education have collaborated well on this project. The result is many lessons learned about the nature and implementation of contextual teaching and learning. The community of teacher education practitioners is very large and diverse at UGA, one the largest in the United States. Of course, there are many informed opinions with regard to what contextual teaching and learning is and how CTL should be implemented. At some level, this is the realistic motivation to have such a wide-ranging theoretical framework. This section a few of those implications for teaching and learning that are related to the theoretical framework are discussed.

Thinking of context as a blend of social and psychological constructs enables many instructional practices to be contextualized. But, it is when

physical setting is blended with more traditional sociological and psychological views of context that learning for many students can become even more vibrant, usable, practical and relevant.

Many of the UGA CTL faculty have come to believe that effective teaching requires mastery of content, the psychology of learning and the sociology of learning environments. The UGA framework enables novice teachers to experience teaching and learning from a variety of perspectives, but also enhances the need for membership in a community of practicing professionals.

The use of the framework is discussed in light of nine postulates that have become known through the CTL practices at UGA. These so-called postulates relate only to the use of the UGA framework. They do not represent other important lessons that have been learned about contextual teaching and learning in other aspects of the UGA CTL project.

Postulate 1: All learning is contextualized.

Yes, even classroom-based, teacher-oriented teaching is contextualized. Context is a blend of social and psychological constructs, the intended goals of the learner, and the interactive roles played by the teacher and the learner.
In abstract classrooms, contexts and settings are often disassociated, but it would be incorrect to state that such approaches are decontextualized.
The point here is that all learning is contextualized – it is what the teacher does with the context and the settings that make a significant difference in learning.

The UGA CTL framework assumes that livelier learning and potentially more useful information requires teachers who skillfully blend psychological and

sociological constructs with increasingly authentic physical settings or tasks. It may even be true that the more authentic the setting the more likely that learning will be utilized in multiple settings (transferred or generalized). To be sure, more research is needed to finally confirm or deny this observation. Even so, there is some quantitative (*i.e*. survey) and plenty of qualitative (*e.g*., focus group interviews, journals) evidence from our project to suggest that authentic teaching and learning is more interesting and relevant to preservice teachers.

A goal of teacher education programs should be to enable novice teachers to contextualize learning by skillfully blending contexts and settings and then match instruction to the needs of students. At UGA, it is believed that better learning results are achieved when even more authentic environments (settings) and contexts are merged.

The UGA CTL faculty are not claiming that student performance on standardized tests will dramatically increase. The UGA CTL faculty believes that the main goal of contextualized teaching and learning is to encourage higher levels of student thinking, multiple uses of information, and seeking solutions to complex problems through mental synthesis of disparate knowledge. They are concerned for and about the learning of <u>all</u> students and the use of varying modalities to teach and motivate all of them better.

Many of us believe there is a time and a place for all types of teaching and learning. Our framework is purposefully designed to allow for contextualized learning in many contexts and settings.

Postulate 2: Future teachers should be exposed to each type of contextualized learning experience.

Each of the learning theories represented in the UGA framework make important contributions to learning. Beginning teachers should be exposed to each approach to contextual teaching and learning, enabling them to engage in a learning activity that is similar to their own learning preferences or their "types" of intelligences. In addition, as they gain expertise, teachers should be able to operationalize each of these perspectives in their own practice. At times, each learning perspective is appropriate. The skill is demonstrated as teachers know when to select the appropriate instructional method and apply it to the children who need it. Recent research indicates that teachers usually teach in the same way that they prefer to learn (Spoon & Schell, 1997). Moving out of the comfort zones that teachers create for themselves by teaching as they learn is often very difficult. Teachers think that their methods so obviously work for them and question why they would not work for anyone.

Effective teachers have command of many "tricks of the trade." This heuristic approach means that they can match the observed needs of their students, the expected learning outcomes, and then select an appropriate instructional approach situated at the right point on the continuum of context.

This is not to suggest that instructors should abandon their philosophic beliefs that now inform their professional practice. It does imply that matching instruction to student learning needs is more important than utilizing a limited number of learning strategies, contexts, and settings.

Postulate 3: Facilitative teaching is fundamentally different than "stand & deliver" direct instruction.

Facilitative teaching is called for when expectations are for students capable of thinking, problem solving, and achieving insightful learning outcomes. The UGA framework characterizes facilitation as an act of guiding students along the path of their own learning. At the same time facilitating teachers are also learners – never afraid to say *'I don't know -- Let's look it up together.'* Such teaching is a good match with exterior and blended constructivism or cognitive apprenticeships that are often associated with situated cognition or communities of practice theories.

When students ask their favorite question: *"When will I ever use this stuff?"*, the facilitating teacher has a teaching moment that will assist the learner in making mental and physical links that can answer the question. It is believed that these associations between what is being examined and the learner's engagement in the real world are critical to how the learner will eventually use the information that they are learning. When the teacher assists in making multiple connections in specific contexts and settings with the material at hand, the learner may also be likely to independently apply the information in multiple ways at a later time. Also, many students experience a natural motivation to learn information that is perceived to have importance in their present and future lives.

Facilitating teachers take advantage of this natural motivation in the design and delivery of learning experiences. The facilitating teacher arranges for contextualized experiences in the most authentic, practical contexts and settings as possible. Of course this means often leaving the classroom in favor of learning on a job site, in an office, in a factory, in a laboratory, or in the forests. While this is sometimes difficult to do, the resulting real world connections and excitement for learning by the teacher and students is often worth the effort.

But even a trip into the world of practice is not sufficient to maximize learning. The facilitating teacher makes very valuable contributions towards learning. The teacher maximizes the contexts and settings by allowing students to do more than observe the work of others. Students have to get their hands dirty experiencing real tasks and jobs while the teacher assist them in making connections between this experience and other academic and practical content.

The other important aspect of facilitating instruction is to arrange for multiple opportunities to practice these new skills in differing contexts and settings. When accompanied by appropriate guidance, subsequent use of knowledge and skills in other settings can clearly illustrate a variety of other uses for that information. An important factor here is multiple opportunities to master the information or the skill. The development of mental frameworks considered important in constructivist learning theories will be enhanced through repetition.

This approach leans heavily on blended constructivist and communities of practice theories. Each of these learning approaches are informed by what the learner has learned prior to a particular learning event. Many constructivists

believe that prior knowledge is organized as mental frameworks arrayed across neurological nodes. A facilitating teacher surfaces and then utilizes this prior knowledge as a foundation for beginning new instruction. Individuals within a community can proclaim their knowledge and the teacher can then use that as a springboard for probing the level and accuracy of the prior perceptions held by learners. At times learners will state inaccurate information and understandings. This is also valuable information for the entire learning community. Now the facilitating teacher has an opportunity to "check it out" with the learning community and then provide clarification. It is important to check on learners' perceptions more than once during a learning activity as it is thought that prior knowledge can be literally "wired in." This will mean that new perceptions must be internalized and learned at sufficient depth to overcome the old wiring. The old wiring can lead to new mental frameworks that are inaccurate and misleading.

Skilled facilitating teachers use the naturally forming communities of students as a foundation for the delivery of instruction. Collaborative or cooperative learning are certainly an important part of how the modern workplace accomplishes its work, but it is also how learning can be made more efficient and effective. Learning can be more efficient because members of the community are teaching and learning together. Learning can be more effective because the pursuit of knowledge is a community goal. Additionally, the learning community has chosen its own learning directions and pursued knowledge of importance to its members.

Facilitating teachers can make students aware that they are learning within a community and then use those social relationships to identify and illustrate significant parts of the content to be learned. For example, teaming students with common interests might be a strategy for exploring new content. Other teachers might want to use the community to establish and maintain common practices of scholarship. To do so, the level of scholarship, the format, and the rubric for assessment might be socially determined by the entire community prior to the beginning of any new activity.

Reflection is probably the most important part of facilitating learning. Even after all of their previous work, a facilitating teacher must go at least one more step in maximizing contextualized learning opportunities. Reflective instructional strategies assist learners (and teachers) in making sense of what has been learned. It is important to surface metacognition of the learners and other experts so that mental processes can be compared. This is accomplished by requiring learners to articulate what they have learned and then to reflect on its meaning. There are many ways to promote and use reflection. Because this is such an important part of facilitative teaching, it is more fully discussed as a separate principle of CTL.

Assessment of contextualized learning is often embedded in the performance of work accomplished at various parts of the journey. Many teachers utilize portfolios, journals, written reflection papers, and forms of work products as the media for assessing student accomplishments. Others teachers may still feel the need for paper and pencil tests or a combination of assessment

strategies. Certainly there are appropriate places for "measurement" types of assessment. For example, learners often have to use terms and definitions. These might be assessed through direct measurement strategies. But, the critical point here is to be consistent across the learning expectations (objectives), instructional and learning activities, and the assessment strategy. When material is learned in a specific context, it should be assessed in a way similar to how it was learned.

The facilitating instructor's role is obviously quite different from those who use more traditional practices. One significant difference is how the instructor uses the legitimate power that is associated with being the teacher.

Postulate 4: Using instructional authority effectively

To be effective, teachers need to have control over legitimate power that is generally associated with their position. However, power that comes with a position is insufficient when it is not associated with influence. One must make a distinction between power and influence. A leader can have a type of power because it is embedded in the position. Influence is a person's ability to persuade others to act in a desired way. Educators can be powerful, but not be influential. But to be influential is to be powerful (Schell & Black, 1997).

Effective CTL teachers should be powerful in their ability to positively influence learners to act on their role as a peer member of a community and their own curiosity and creativity. One way to gain

influence with power is to share curricular and instructional decisions including assessment strategies. The act of sharing positional power between the teacher and his or her learners is an act of constructivist belief that learners will actively pursue their interests. When facilitating teachers demonstrate willingness and then consistently act as learning guides, students will respond by affording influence – and that is power. Ironically, the act of giving away legitimate power can result in even more influential teacher-learner associations.

Postulate 5: Reflection is required.

The impact of a contextualized lesson can vary depending on how skillfully the experience is examined by the learner and the teacher. As stated previously, articulation of what has been learned and reflection on it's meaning are critical elements in maximizing contextual teaching and learning.

To examine contextualized learning experiences requires a high degree of skill on the part of the facilitating teacher. Of course not all learners require the same level of guidance or direction from the teacher. More independent learners rely on the "context of the mind" and are able to make many associations and connections with external environmental settings. Other learners depend on the teacher to provide the expertise and interpretation of the learned content.

Generally speaking, however, the UGA framework assumes that more learners can be better served through blended social and

psychological contexts and physical settings. This may be especially true for the students who are not consistently performing well in today's curriculum that increasingly seems to be emphasizing facts and recall. A variety of instructional approaches are thought to be required when teaching heterogeneous learners. An important instructional strategy that promotes understanding and meaningfulness is that of articulation and reflection.

Need for metacognition, articulation, and reflection.

Demonstrating how individuals learn can prove to be a very effective strategy in assisting students to understand how they process and utilize information. This instructional action is also important to novices as they hear experts and more advanced students talk about their knowledge and how it was used to solve a problem.

The facilitating teacher can use the tool of reflection to surface how individuals think about their own thinking. Schőn's (1990) work on reflection *in* action and *on* action is particularly informative with regards to helping learners assign meaning to new insights. When accomplished in public in full view of the community, individuals most proclaim and own their learning. This also gives other members of a community an opportunity to compare their metacognitive processes. Discussion about these different ways of thinking can be particularly useful as learners are validated or given examples of alternative ways of thinking about a problem. These types of "reflective seminars" additionally give

communities opportunities to negotiate common understandings of ideas and practices that might be adopted by the entire group. Individual learners are given a chance to socially validate their learning and to make even further meaning of it within a social/psychological context and physical setting.

Postulate 6: We believe that authentic contexts and settings can make a significant learning difference.

At this point, there is limited evidence to support this position. For now it is probably best to assume that the degree of contextualization and the relationship to learning effectiveness is an individual concern, and teachers should strive for a balance between field based and classroom learning opportunities. Some learners may prove to be quite dependent on context to apply information. Others may be better at "seeing" applications of information when it is taught/learned in abstract settings.

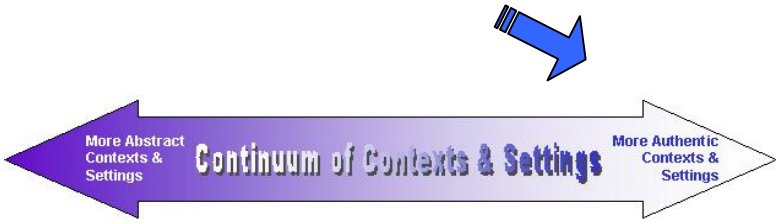
There does however seem to be something gained when postulates of CTL are implemented. Research indicates there is often a greater spirit of community, greater self-advocacy, and greater desire to learn more when CTL practices are used. Conversely, learners voice more discontent when exposed to traditional teaching methods (Lindsay, 2001). Clearly experiences with CTL undergraduates at UGA indicated educational benefits resulted when students were challenged with CTL practices in field-based settings, educational benefits result. For example, social studies education majors repeatedly could not make connections

with aspects of epidemiological studies until they visited the Center for Disease Control and Prevention (CDC). In the company of other undergraduate majors in science, math, and occupational studies, they were shown a chart of victims of an HIV outbreak in rural Southern Mississippi at the CDC that illustrated sexual partners and their demographic characteristics. It immediately became quite apparent that many social factors were at work in the HIV outbreak that were at least as important as the science of disease prevention. Although these social phenomena had been repeatedly discussed in the classroom, it took a visit to the CDC and a conversation with the researchers to grasp their importance. Immediately these novice social studies teachers could see ways to collaborate on a multi and interdisciplinary epidemiological lesson that would be highly contextualized.

Similar outcomes were observed among the CTL faculty who have experienced internships and those who made visits to businesses and industrial settings. While it is possible that all learning is contextualized, not all contexts are equally potent. After more than three years of trial and experimentation, the UGA CTL faculty remains convinced of the importance of physical setting and matching contexts.

Postulate 7: On the right end of the continuum, more authentic contexts and physical settings enable relevant real-life connections.

The UGA CTL framework has generated a continuum of context that may prove useful in understanding how a range of learning theories



and instructional approaches might be applied when contextualizing teaching and learning. A basic assumption is that efforts to embed teaching and learning in authentic settings can yield benefits that result in higher order learning. By designing teaching and learning strategies that take advantage of blended social and psychological learning constructs with authentic learning opportunities, learners will make more connections that have true meaning in their lives. When learners are socially aroused, there seems to be greater affordances for promoting critical thinking, analysis of data, and synthesis. This principle seems to be true of both blended constructivist and situated cognition or communities of practice theories. Under these approaches, the learner's mental models can be surfaced and utilized for instructional purposes. This promotes greater opportunities for reflection and meaning making.

Postulate 8: On the left end of the continuum, more abstract contexts and physical settings enable imaginary connections.

Educational activities located on the left end of the continuum are more oriented to one  teacher. While all learning might still be considered contextualized, the context and settings

on the left end of the continuum are more often situated in a traditional classroom. It is up to the student to make imaginary connections between subject matter and real world applications. Learning and teaching on this

end is rarely seen as applied to authentic activities. This arrangement may prove to be beneficial to learners who traditionally perform well on standardized tests of recall. It is the expectation is that learning outcomes should be measured and standardized, this may be the desired approach.

Principle 9: The skill and enthusiasm of the facilitator makes CTL effective.

A skilled facilitating teacher can make a significant educational difference even when situated in traditional classroom settings, although all learning may be considered contextualized. The converse, however, can be said about teaching and learning located on the right end of the continuum without a skilled facilitator. Constructivist and cognitive apprenticeship teachers, not yet expert facilitators, are likely to miss important opportunities to maximize the potential impacts of context and setting. The important aspect of CTL Postulate 9 is that the teacher and his or her practices are critical to the success or failure of attempts to contextualize learning. When communities of practice theories are in use, the facilitator must be aware of subtle changes among members of the community. Communities of practice are much like families. In some contexts and settings, they are very functional, and, at other times they are very dysfunctional. At times community members choose to participate at different levels or in different ways depending on the situation or social conditions within the group. It is the level of skill utilized by the facilitator that often determines the effectiveness of community approaches.

The teacher's enthusiasm for the topic and for the enterprise of education is also a very important, but often intangible, component of CTL. Teachers who are willing to let their genuine enthusiasm show are often able to communicate on a higher level while keeping the interests of their students. At some level, teaching might be considered a type of persuasion or even selling. When teaching adolescents in middle school or high school, the teacher's eagerness can be very helpful in making associations between the topic and real life. An enthusiastic and contextualized algebra teacher has a better chance of selling a student on how Boolean logic can be an important part of decision-making in everyday life than one who might say, *'just trust me, you will need it.'*

These postulates potentially have huge implications for educating novice teachers as successful facilitators. It may, in fact, take years to develop the more refined and sophisticated skills of an expert facilitating CTL teacher.