

CTL Practice at UGA

Following the development of the intermediate theoretical framework, it was time to move on into a phase of design, implementation, practice and assessment. Following is a discussion of CTL practices that were initiated over the life of the contract. Results from these contextualized practices were later used to provide guidance for the development and documentation of a more advanced theoretical framework.

After nearly three years of work with the CTL project, it has become very clear that CTL practices vary across the College of Education and the UGA campus. Many new practices have emerged and innovations have occurred. In a few cases old practices were continued, or tinkered with under the guise of CTL, by perhaps using new terms to describe and legitimize them. Still, the practices of other faculty members have been transformed and rejuvenated by their participation in the project. Of course, a range of outcomes is to be expected at a research university where a premium is placed on individuality and entrepreneurial spirit and especially with this project at UGA that included such an extreme number of stakeholders.

1. The project faculty determined that there are many ways to think of contextual teaching and learning – and most of them are technically correct. The faculty identified categories into which CTL practices could be classified for purposes of the UGA project.
2. problem-based learning
3. project-based learning

4. inquiry-based learning
5. work-based learning
6. service learning
7. collaborative/cooperative learning (diversity)
8. authentic assessment

In a later section of this work, these and other selected practices will be shown to conform and support the emerging UGA CTL theoretical framework. For illustrative purposes, each of these categories is briefly described and illustrated they were used in the UGA CTL project.

Problem-Based Learning. Problem based learning is an instructional approach that uses real-world problems as a context for students to learn critical thinking and problem-solving skills (Berns & Erickson, BGSU, 2000). Theoretical underpinnings of problem-based learning include the use of prior knowledge to understand and structure new information, encoding specificity (Context) to make the transfer of learning more likely as it reflects real-life situations and those encountered in practice) and the elaboration of knowledge that occurs through discussion, answering questions, peer teaching, and critiquing.

An example of problem-based learning might include the following example:

Contextual Teaching & Learning Case Study: Middle School Preservice Teachers Investigate What Knowledge, Skills, and Disposition are Necessary to Prepare Student for the Work Force.

Professors in Middle School Education utilized principles of Problem-based CTL in the form of a case study conducted at Oliver Rubber Company (ORC) a Athens based manufacturer of reconditioned truck tires.

The purpose of the project was to demonstrate to learners who knowledge, skills, and dispositions are deemed important by local businesses. After a tour of the ORC plant, students were asked to question company employees about the skills required to be employed, what impact does ORC products have on the lives of citizens, and what are the implications of the answers to these questions on their own practice as beginning teachers.

Following an extensive tour of the ORC plant students prepared answers to many questions that caused them to reflect on the importance of preparing students to work in such an industrial setting.

Among the questions that novice middle school teachers were asked to address were:

- What connections (if any) do you see between what and how students are taught, what they learn, and how they might be required to perform at ORC?
- If you do not believe that the public schools are preparing students to work in this type of business environment, what do you believe is necessary, and/or missing from the curriculum? What needs to stay the same?
- Please describe in detail how mathematics, language education, social science and science knowledge was used at ORC.
- What is the ethnic make up of the workers? What is the gender make-up of the workers? What roles do you observe women and men playing at ORC? Describe the work relationships. What was the nature of their interactions?
- What type of evidence is provided to support your claims?

The most powerful part of the experience was the potential for students to use a context and setting to reflect on the meaning of how information is used in a real-world setting. This project also emphasized the importance of interdisciplinary learning, work expectations and work ethics that should influence the development of public school curriculum and inform teaching practices.

Project-Based Learning. Project-based learning is a comprehensive approach to classroom learning designed to engage student investigation of authentic problems. This might include an in depth study of a topic that is valued by the learner. Project based learning typically engages students in complex, real-world activities through which they develop and apply academic skills and

knowledge. Students are required to draw from many information sources and disciplines to solve problems and manage and allocate resources such as time and materials. The following is an example of project-based learning employed in the UGA/CTL project.

The Genomics and Society course taught by Dr. Jonathan Arnold includes assignments where students grow genomic substances in the laboratory and observe actual changes that occur in the substances. From the laboratory, students moved to experiences in humanities coordinated courses where they were afforded opportunities to reflect critically on their research.

Across all of the courses, students are challenged to think about larger societal implications of science and living in today's world. "An obvious goal of the course cluster, the teachers say, is rising the consciousness about scientific ethics during an ages of rapidly accelerating biomedical research. More subtly, the students hone critical-thinking skills while bridging the gulf between humanities and science. Like real scientists, they work in teams. In their case groups consist of students interested in math, biology, chemistry, and bioethics."¹

http://www.onlineathens.com/stories/090301/uga_0903010006.shtml

Inquiry-Based Learning. Used concomitantly with "reflective teaching," inquiry based learning engages students in "what if" scenarios and investigations to construct mental frameworks that adequately explain their experiences. It is based on the theory of the inquiring mind that seeks an answer, solution, explanation, or decision. Teachers and students from this perspective read about, share, observe, critically analyze, and reflect upon that which is being studied. The objective is to improve it, change it, and/or to predict results.

¹ Article published in the Athens Banner-Herald, Monday, September 3, 2001.

EFND 2030, Foundations of American Education, Contextual Teaching and Learning was offered during the CTL project at UGA. In this course CTL practices enabled preservice teachers to 1) examine the relevance of school-based learning to student's everyday lives, 2) develop an understanding of everyday life experiences in the learning process, 3) explore the role of the teacher in providing experiential and real world experiences in classroom teaching, and 4) examine the role of teachers in helping to facilitate democracy in the education and lives of students.

To reach these goals project-learning strategies were employed that immersed learners in ill-structured social topics. One such inquiry by a novice teacher was to explore the nature and sociological impacts of teenaged pregnancy. This exploration resulted in a well-crafted and thoughtful paper.

By exploring the impacts of unanticipated pregnancies, the students were able to appreciate the many ways that lifestyles much change when babies are born to young and often immature men and women.

Among the other revelations were:

- The many long-term impacts of teenaged pregnancy on society.
- Programs that encourage fathers to participate in the raising of the child.
- The economic impacts on both the mother and the father and their extended families.
- The impact of changed educational plans on anticipated vocational and academic preparation programs.

This inquiry-based project, while not always contextualized in authentic contexts and settings, does promote reflection and a search for meaning when learners are confronted with very difficult social problems.

Work-Based Learning. Work-based learning is an educational approach that uses work places to structure learning experiences that contribute to the intellectual, social, academic, and career development of students. It also supplements these activities with school experiences that apply, reinforce, refine, or extend the learning that occurs at a work site. By so doing, students develop attitudes, knowledge, skills, insights, habits, and associations from both work and

school experiences and are able to connect learning with real life work activities.

The following is an example of this CTL approach.

EPSY 6800- Foundations of Cognition in Education. During this course, students do a CTL module where they are to go out and research a local business. They are to shadow employees and determine skills needed for the position. Students then reflect upon how as teachers they might facilitate the development of those skills required for the positions in the workplace. In addition, students are required to demonstrate how they would evaluate student performance of those work-based skills in the classroom context.

The goal of the class was to foster connections between classroom experiences and the “real” working world. The assumption here was that CTL makes experiences relevant and meaningful to students by building knowledge that is situated.

The Work-based project required student to prepare and teach a CTL mini-lesson in science, mathematics, language education, or social studies. Preservice teachers were asked to:

- Describe an Athens business or industry.
- Describe the work done by fictitious typical employees of that business.
- Help their fellow students to envision themselves in the roles of the described employees.
- Use photographs, slides, videos, or work samples to assist learners in imagining the work done by employees.
- Create scenarios in which students think critically and solve problems as the employees of that business might.
- Show how student’s work would be evaluated using both tradition as well as “performance based” methods such as student interviews and oral reports.

This classroom-based approach is contextualized in the sense that all learning is contextualized. Another approach might employ this same activity, but require the learners to be more immersed in authentic settings.

Service Learning. Service learning is a method of instruction that combines community service with a structured school-based opportunity for reflection about that service emphasizing the connections between service

experiences and academic learning (Berns & Erickson, 2000). Service learning is integrated into the students' academic curriculum or provides a structured time for students to think, talk and write about the learning that takes place. Service learning enhances what is learned in school by extending students' learning beyond the classroom and into the community while helping to foster a sense of caring for others.

EDMS 5/7060: Academic Community Learning course taught by Dr. Elizabeth Pate, where students created and implemented a service learning experience in their community. An example of service learning can be drawn from the work of CTL students Rebecca Parker, Melanie Sauer, & Emily Pittman. Their project contributed to the development of a website known as interMath. Dr. Jim Wilson, Professor in the Math Education department at UGA, initiated this project. The purpose of the website is provide online support for middle school math teachers in the form of real-world math problems using computer technology and graphing calculators. The site provides teachers with resources including real-life math problems, a glossary of mathematical terms, sample lessons, and a question & answer site for bulletin-board type electronic communications.

CTL students participated in this project by assisting in the creation of workshops designed to elicit feedback from practicing middle school math teachers. The students assisted with the equipment, teaching of concepts, while emphasizing the use of TI 73 calculators. Their work included facilitation type teaching in both small and large groups.

The results of the contributions of the CTL students were included in a reflective paper and portfolio. The students also publicly presented their work at a Service Learning workshop provided for the entire UGA College of Education community.

The interMath website can be viewed at: <http://www.intermath-uga.gatech.edu/>

Collaborative/Cooperative Learning. Although often viewed as separate entities with considerable overlapping qualities, cooperative and collaborative learning uses small groups in which students work together to maximize their own and each others learning (Berns & Erickson, 2000). Collaborative learning suggests a way of dealing with people that respects and highlights individual

group member's abilities and contributions. There is a sharing of authority and acceptance of responsibility among group members for the group's actions. The underlying premise of collaborative learning is based upon consensus building through cooperation among group members. Collaborative learning is student-centered and often takes a more qualitative approach. An example of collaborative learning might be:

Mandatory School Uniforms? UGA's Social Science Education department has a strong focus within their department on all of the courses using collaborative learning. The reality-based case study for Middle Level Learners is an example of a case study that utilizes principles of collaborative and cooperative learning. The activity was designed, implemented, and evaluated by Drs. Stuart J. Foster, and John D. Hoge. Drs. Pat Nickell and Sherry L. Field joined in writing a professional paper on the CTL activity.

In collaborative teams, middle school students explore the 1999 Polk county, Florida school uniform controversy. The activity begins with a presentation of the facts of the class action lawsuit filed on behalf of 500 public school parents who wanted to overturn the mandatory policy.

Students are then divided into issues-focused research groups that encounter a variety of case-related facts and prepared statements from individuals involved in the controversy. Using reflective questioning, students are challenged to conduct further collaborative research. Based on their findings, each group is expected to take a pro or con position on the acceptability of the uniform policy.

The activity concludes with a mock school board where students take on the roles of citizens who speak on behalf of their research-based opinions. After a vote of the board, the activity concludes with students collectively recommend a new policy for school dress code or uniform policy.

Cooperative learning is defined by a set of processes which help people interact together in order to accomplish a specific goal or develop an end

product. While more teacher centered, **cooperative learning** tends to use quantitative methods such as levels of achievement as the product of learning.

Authentic Assessment. Assessment is authentic when we directly examine student performance on worthy intellectual tasks. Authentic assessments tend to measure whether the student can craft polished, thorough and justifiable answers, performances, or projects.


The Contextual Teaching and Learning Case Study activity conducted by the Language Education department featured at case study that was described earlier at the Oliver Rubber Company (ORC). The work of the students was assessed using a rubric that was extracted from the authentic experiences of the learners. The rubric provided a list of required performances for participating students, but also listed the number of points allowed for each performance along with criteria for obtaining those points.

Participating middle school education majors were required to analyze their contextual experience at ORC in light of language use. Included were 1) the organization of their case study, 2) writing style, 3) conventions (usage & mechanics), 4) Description of the ORC company, 5) connection to content, 6) description of workers, 7) identification of missing components, and 8) impact of the activity.

Each of these areas were accompanied with criteria required to obtain full credit. For example student were provided with a rubric that described:

Connection to Content

The student earned 15 points for describing the content used by workers at ORC. The student provided examples and details to illustrate this point. The student inferred whether or not the factory workers understood the theory involved in their work. Examples of inferences were included. The student described ways in which middle school teachers can change curriculums and instructions so the students will clearly understand how theories are applied in real world contexts.



Assessments should represent a history of learning, an organized progression of accomplishment, a direct and valid outgrowth of the standards and objectives set for the curriculum or learning event, and input from multiple human resources. Learners should have input into the assessment processes and some selection of assessment instrument.

These approaches are embedded into the fabric of the theoretical framework that has emerged at UGA. The following is a more detailed discussion of the framework that informs our research and practice.