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TRANSITION Highlights

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THE THEORY AND APPLICATION OF CONTEXTUALIZED TEACHING AND LEARNING IN RELATION TO PROGRAMS OF STUDY AND CAREER PATHWAYS

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WHAT IS CONTEXTUALIZED TEACHING AND LEARNING (CTL)?

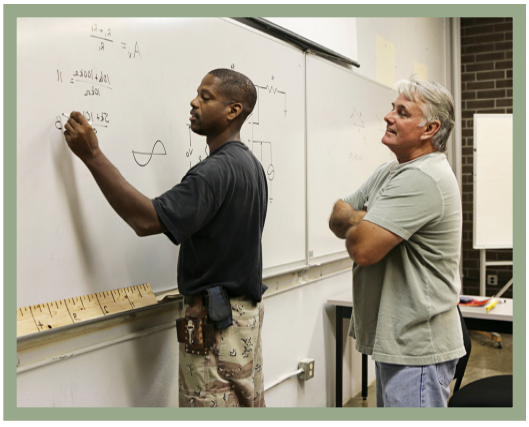
Contextualized Teaching and Learning (CTL), also known as **Contextualized Instruction**, is defined as a "diverse family of instructional strategies designed to more seamlessly link the learning of foundational skills and academic or occupational content by focusing teaching and learning squarely on concrete applications in a specific context that is of interest to the student" (Mazzeo, 2008, p. 3; see also Medrich, Calderon, & Hoachlander, 2003). In other words, CTL is a process built on the recognition that some students learn more effectively when they are taught in a hands-on, real-world context rather than in an abstract manner (Baker, Hope, & Karandjeff, 2009; Bond, 2004; Predmore, 2005). The primary goal of CTL is to utilize the "context supported by traditional academics to drive instruction" thus engaging students in active learning to assist them in making meaning (N. N. Badway, personal communication, August 1, 2010).

Bond (2004) outlines the characteristics of CTL, as opposed to traditional academic models:

- Focuses on concrete skills and knowledge needed in work and life
- Combines academic learning with workplace applications
- Personalizes instruction for each student
- Presents abstract ideas through the senses
- Indicates utility or usefulness of information
- Provides factual information during hands-on experiences so that it immediately makes sense
- Presents information in small increments instead of large chunks or thick books

Cross-curriculum integration is an important part of CTL that connects academic and career and technical education (CTE). An example of cross-curriculum integration is when academic teachers, CTE teachers, and representatives of business and industry form teams to create projects involving an intersection between academic content and career-technical or workforce competencies. The primary benefit of this strategy is that "students experience the subject matter as connected and reinforcing, rather than separate and unrelated" (Chernus & Fowler, 2009, p. 6).

THEORETICAL ROOTS AND IMPLICATIONS



Successful CTL engages teachers and students in active classroom activities, insuring that learning is student-centered and engaging. Thus, CTL is based on a constructivist educational theory, which is "a conceptual framework that asserts that learners are constantly updating their memory based on ongoing experience" (Baker et al., 2009, p. 8). Constructivism relies on the notion that students create their own meaning of concepts when they learn through experience, which furthers an innate motivation and desire to learn. Supporters of CTL assert that it can motivate many students more effectively than traditional classroom pedagogy (Baker et al., 2009; Perin & Hare, 2010).

Baker et al. (2009) outline several other psychological and educational theories and research that have implications for CTL:

- **Motivation Theory.** Motivation theory focuses on students' perceived value of the mode of instruction and development of self-efficacy, which is a key component of CTL. Students are encouraged to reflect on their own ideas and the experiences in which the instruction and materials are imbedded. Predmore (2005) shows that thinking about content within real-world experience is important in CTL because "once [students] can see the real-world relevance of what they're learning, they become interested and motivated" (Putting it Into Context, The Success, para. 6).
- **Problem-Centered Learning.** This style of learning activity requires students to work in teams to progress through a network of interconnected problems that lead to a relevant conclusion. This CTL approach helps students to see the usefulness of certain skills because they are connected to a real-life problem-solving situation.
- **Social Learning Theory.** Social learning theory emphasizes a shift away from solitary studying and passive listening and toward collaboration with peers. Students are encouraged to create and understand their own learning within a social situation associated with CTL. The social context of collaborative learning also often emulates what students can expect in a future work environment.
- **Learning Styles.** Students have different prior knowledge and experience, motivational factors, and personalities. These elements affect the ways in which students learn most effectively. CTL reaches a variety of learning styles in the classroom because the instructor can use different approaches within the experiential context, such as hands-on learning and collaborative learning.
- **Brain Research.** Emotion, practice, experience, and the environment can shape learning because "the human brain is highly responsive to association and sensory experience" (Baker et al., 2009, p. 15). Brain research is important to CTL because it demonstrates that the brain can develop through connections between experience, sensory information and learning new concepts.

THE RELATIONSHIP OF CTL TO PROGRAMS OF STUDY (POS) AND CAREER PATHWAYS

Programs of Study (POS) are sequences of courses that begin in secondary education and continue through postsecondary education. POS incorporate academic and CTE courses and are based on Career Clusters and Career Pathways (Jankowski, Kirby, Bragg, Taylor, & Oertle, 2009; State's Career Clusters Initiative, 2010; Taylor et al., 2009). Career Clusters allow students to gain fundamental academic knowledge while exploring a variety of career interests. Career Pathways provide students with the opportunity to develop specialized skills while learning how to apply those same skills to career options within each Career Cluster. Career Pathways are also flexible in that they help students connect current learning with future opportunities in continuing education and career development. For students who seek education primarily to gain access to more advanced jobs, "career pathways are only effective if they seamlessly link students to courses, programs, and good jobs" (National Council for Workforce Education [NCWE], 2010, p. 1.12). One significant way of addressing this job-focused motivation is to implement CTL strategies through POS and Career Pathways to make learning relevant to specific occupations. Furthermore, "contextualization provides an immediate application of learning to [students'] career and education goals, which can help students remain motivated to continue their studies" (NCWE, 2010, p. 2.13).

The intersection of academic and CTE instruction through POS provides a framework for CTL. Baker et al. (2009) emphasize the importance of the development of transferrable skills in programs that utilize CTL, reflecting the notion that "the student has developed into a better learner by becoming more aware and self-directed as well as increasingly capable of constructing more effective inquiry transferring that knowledge to other fields" (p. 16, see also Chernus & Fowler, 2009). Promoting students' ability to generalize knowledge is essential in connecting CTL to POS because one central goal of the POS Career Pathway structure is to provide students with skills they need to move between different career and educational options.

CHALLENGES OF CTL

Although CTL has strong advocates and a growing foundation of theoretical and practical applications, its proponents may encounter challenges when implementing this strategy, especially implementing from the instructor perspective. Some possible challenges include:

- Difficulties obtaining additional funding for hands-on courses (Baker et al., 2009).
- Developing on a continual basis creative and effective teaching and learning strategies and finding ways to apply abstract material to concrete experiences (Predmore, 2005).
- Working with state curricula that emphasize high-stakes testing, leaving little time for active learning applications in the classroom (Predmore, 2005).
- Helping students adjust to a type of instruction that differs from traditional instruction to which they are accustomed (Predmore, 2005).
- Adjusting to the high energy levels required for managing a louder and more active classroom (Predmore, 2005).

IMPLEMENTATION OF CTL

Despite the potential challenges, many instructors have implemented CTL in their courses. CTL is a flexible process for both instructors and students, so there is no single way to implement such instruction. Developing an effective CTL classroom requires patience, open-mindedness, and flexibility because CTL is very different from traditional instruction. Instructors may need to adjust to the learner-centered approach that is integral to CTL if they are accustomed to teaching in a traditional classroom. Various authors provide insight as to how instructors and their colleagues can successfully implement CTL in their classrooms.

- Collaborate with other instructors and colleagues. Many effective CTL courses are interdisciplinary, so forming teams with other instructors, workplace representatives, and experts on specific subjects can create a well-rounded instructional base from which students can apply what they are learning to concrete experience (Baker et al., 2009; Chernus & Fowler, 2009; Predmore, 2005).
- Obtain or develop relevant materials. Instructors and their collaborators can create their own instructional materials based on resources from industry partners or student experience with such partners (Baker et al., 2009). Or, instructors can locate commercial materials since publishing companies are increasingly providing CTL materials (Predmore, 2005).
- Seek professional development. Many instructors need training in order to learn how to teach effectively under a CTL model (Finkelstein, Hanson, Huang, Hirschman, & Huang, 2010; Predmore, 2005). To improve and maintain the quality of instruction and student outcomes in CTL classrooms, professional development can help instructors to "clarify the learning outcomes afforded by an integrated curriculum," reach greater understanding of how to develop CTL content, and "teach in a contextualized manner" (Baker et al., 2009, p. 20).

For Further Reading

Baker, E. D., Hope, L., & Karandieff, K. (2009, October). *Contextualized teaching and learning: A promising approach to basic skills instruction.* Center for Student Success, The Research and Planning Group for California Community Colleges. Retrieved from http://rpgroup.org/sites/default/files/CTL%20Brief.pdf

Berns, R. G., & Erickson, P. M. (2001). Contextual teaching and learning: preparing students for the new economy. *The Highlight Zone: Research @ Work*, 5, 1–8. Retrieved from http://www.cord.org/uploadedfiles/NCCTE_Highlight05-ContextualTeachingLearning.pdf

Gillespie, M. K. (2002). *EFF research principle: A contextualized approach to curriculum and instruction.* EFF Research to Practice Note 3. Retrieved from http://eff.cls.utk.edu/PDF/03research-practice.pdf

Jenkins, D. (2003). *The potential of community colleges as bridges to opportunity for the disadvantaged: Can it be achieved on a large scale?* Paper presented at the Seminar on Access and Equity, Community College Research Center, Teachers College, Columbia University.

National Council for Workforce Education (2010). *Breaking through: Contextualization toolkit* (Spring). Jobs for the Future.

- Ask questions of students. Instructors should try to anticipate the students' view of which instructional approaches work best. Instructors and their collaborators can participate in students' classroom conversations in order to better understand their problem-solving thought processes and to guide discussion as students create their own questions and understandings (The Cognition and Technology Group at Vanderbilt, 1990; Predmore, 2005).

With the above recommendations in mind, instructors and their collaborators can create an environment in which students can explore academic and CTE material through a contextualized approach.

CTL Resources

Career Ladders Project
http://www.careerladdersproject.org/videoa/mainpages/ctl.html
Videos illustrating students' experiences with and perspectives of CTL courses.

Contextualized Teaching and Learning Project
http://www.rpgroup.org/css/CTL.html
Instructional strategies for teaching basic skills in a context that is meaningful and relevant to students' lives, including career preparation, community service and social justice.

CORD Contextualized Teaching and Learning Resources
http://www.cord.org/contextual-classroom-resources/
Links and descriptions of CTL publications through the Center for Occupational Research and Development; publications emphasize strategies that instructors can employ in CTL classrooms.

Math-in-CTE
http://136.165.122.102/mambo/content/view/66/1/
Downloadable sample curriculum maps embedding math into the following CTE courses: Agriculture, Automotive, Business and Marketing, Health, and Information Technology. From the National Research Center for Career and Technical Education.

TeachNET
http://www.cew.wisc.edu/teachnet/ctl/
Descriptions of CTL strategies and links to information about the relationship of CTL to workplace and community learning.

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Mazzeo, C. (2008). *Supporting student success at California community colleges: A white paper.* Prepared for the Bay Area Workforce Funding Collaborative Career by the Career Ladders Project for California Community Colleges.

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CTL In Action

According to the Vocational Instructional Materials Laboratory (VIML, 1999), CTL lessons are designed with the expectation that students will develop specific skills that employers seek, such as the ability to "initiate action on their own…assess problems and situations, anticipate what might happen next, and continuously search for creative solutions" (VIML, 1999, p. 10).

A sample CTL lesson from the VIML consists of a scenario and guiding questions for students to read and follow:

You are among a team of architects hired to plan the revitalization of a deteriorating historic area in your community. In spite of a rich ethnic history and residents who are committed to seeing the area thrive, the neighborhood is plagued by inadequate housing, abandoned buildings, lack of transportation, crime, and declining businesses. The City Planning Commission is prepared to provide resources to encourage economic development, recreation areas, and better housing. Create a design for the neighborhood and present your plans to the commission for their approval.

Guiding Questions:

What alternative uses should be considered for the land to best meet the needs of the community and its citizens?

What historic and current economic, social, and environmental factors should be considered in the creation of the plan?

What data regarding the needs and concerns of citizens and businesses in the community would inform the design of the neighborhood? How should this data [sic] be collected, analyzed, and presented?

The goal of the above VIML sample CTL lesson is to help students develop the following competencies, which combine academic and work-related skills:

1. Solve problems and make decisions in work-related situations
2. Read for information and understanding
3. Use observation skills to analyze work-related situations
4. Apply mathematical processes
5. Apply measurement and spatial skills
6. Apply statistical analysis skills
7. Analyze critical data to guide work activities
8. Utilize scheduling techniques to ensure that jobs are completed by the stated due date
9. Demonstrate knowledge of the economy and how it functions as a whole
10. Demonstrate knowledge of the economy as a framework within which decisions are made by individuals and groups

Source: Core ITAC for Career-focused Education, The Center on Education and Training for Employment, The Ohio State University. Copyright 1999. Used with permission. *http://www.eric.ed.gov/PDFS/ED444000.pdf*

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