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

by Stephanie Kalchik and Kathleen Marie Oertle

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


• 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**  
Videos illustrating students’ experiences with and perspectives of CTL courses.

**Contextualized Teaching and Learning Project**  
[http://www.rpgroup.org/css/CTL.html](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/](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](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](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.
References


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About the Authors

*Stephanie Kalchik is a graduate research assistant for the Office of Community College Research and Leadership and can be reached at kalchik1@illinois.edu*

*Kathleen Oertle is a post-doctoral researcher for the Office of Community College Research and Leadership and can be reached at oertle@illinois.edu*
根据职业教育材料实验室（VIML, 1999），CTL课程旨在设计中预期学生将发展雇主所寻求的特定技能，例如“自主采取行动，评估问题和情况，预测可能发生的事情，并持续寻找创造性解决方案”（VIML, 1999, p. 10）。

一个来自VIML的CTL示例课程由一个场景和指导问题组成，供学生阅读和遵循：

你是一队受雇的建筑师，被委派规划你所在社区凋蔽的历史区域的复兴。尽管有丰富的民族历史和致力于社区繁荣的居民，该社区却饱受住房不足、废弃建筑、交通不足、犯罪和企业衰落之苦。市规划委员会准备提供资源来促进经济发展、娱乐活动区域以及更好的住房。创建一个设计，向委员会展示你的计划，获得他们的批准。

引导问题：

1. 考虑土地的替代用途，以最好地满足社区和其公民的需要。
2. 考虑到历史和当前的经济、社会和环境因素，应考虑在制定该计划时。
3. 关于社区居民和企业的需求和担忧的数据，将如何指导该地区的设计？这部分数据应如何收集、分析和呈现？

上述VIML示例CTL课程的目标是帮助学生发展以下技能，这些技能将学术与工作相结合：

1. 在工作相关的环境中解决问题和做出决策
2. 阅读获取信息和理解
3. 使用观察技能分析工作相关的环境
4. 使用数学过程
5. 应用测量和空间技能
6. 应用统计分析技能
7. 分析关键数据以指导工作活动
8. 利用调度技术确保在规定日期完成工作
9. 完全理解经济并了解如何作为整体运行
10. 作为个人和群体决策的基础框架，展示对经济的理解


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