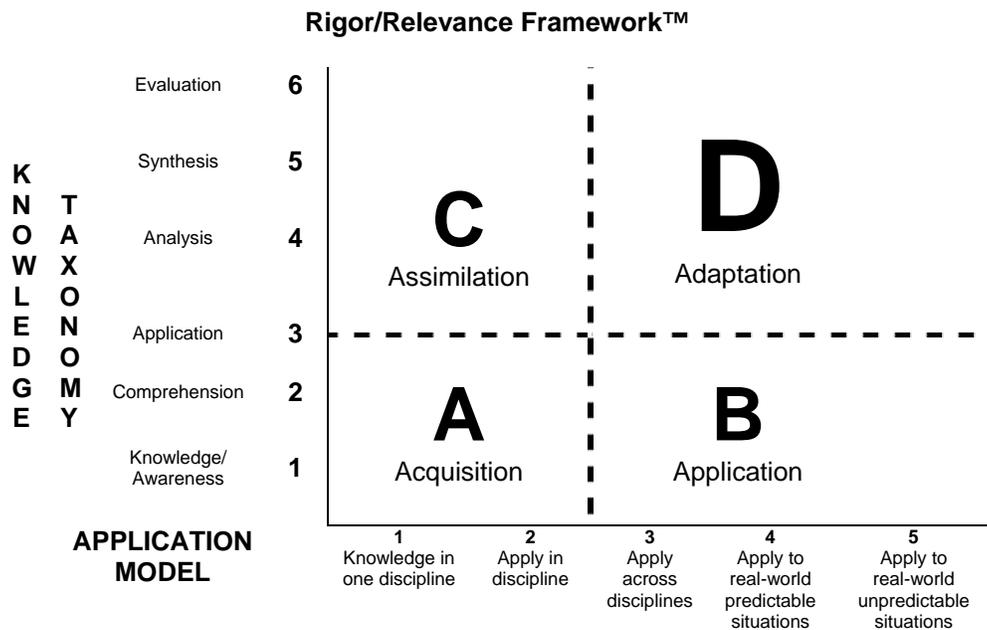


## Relevance Makes Academic Rigor Possible

The reauthorization of the Carl Perkins Legislation for Career and Technical Education (CTE) requires that rigorous and challenging academics be delivered within industry-based standards. Additionally, high school graduation requirements will require 3 credits of mathematics in 2012 and 4 credits of mathematics in 2013. Standards for many Arizona CTE programs include significant mathematics content. Therefore, the CTE Section at the Arizona Department of Education (ADE) has chosen to begin the process of identifying rigorous academic content with the first project focused on the math standards delivered in a selection of CTE programs. Local school district governing boards or charter schools may determine that 1 math credit can be awarded CTE students toward the State math requirement. Future projects will include analysis of CTE program standards common to other academic areas. Ultimately, districts may chose to award up to 3 ½ CTE credits in 2012 and 5 ½ CTE credits in 2013 for graduates to use to meet graduation requirements in a combination of the academic areas of Math, English, Science and Economics.

Research has validated that relevance makes rigor possible within academic content. Relevant learning whereby students apply core knowledge, concepts, or skills to solve real-world problems in the context of CTE coursework with authentic problems, tasks and simulations creates a rich environment to provide meaning to academic content. Dr. Willard Daggett has created the Application Model and Rigor/Relevance Framework as a practical planning and instructional tool for determining the relevance of curriculum and assessment to real-world situations. Dr. Daggett's Rigor/Relevance Framework has become a cornerstone of school reform efforts. It demonstrates that rigor cannot occur without relevance.



Rigor/Relevance Framework™  
 Willard R. Daggett, Ed.D  
 The International Center for Leadership in Education

The Rigor/Relevance Framework enables educators to examine curriculum and plan instruction and assessment. The Framework consists of four quadrants that reflect these two dimensions of higher standards and student achievement. The Knowledge Taxonomy describes the increasingly complex ways in which we think and it is based on the six levels of Bloom's Taxonomy. The second dimension of the framework is the Application Model that describes five levels of relevant learning: Knowledge in one discipline, apply knowledge in one discipline, apply across disciplines, apply to real-world predictable situations, and apply to real-world unpredictable situation. Relevant learning is interdisciplinary and contextual. It requires students to apply core knowledge, concepts, or skills to solve real-world problem.

In Quadrant A (Acquisition), students learn and store bits of knowledge and information. Quadrant B (Application) requires students to use their acquired knowledge to solve practical problems. In Quadrant C (Assimilation), students extend their acquired knowledge to use it automatically and routinely to analyze problems and create unique solutions. When working in Quadrant D (Adaptation), students have the competence to think in complex ways and apply their knowledge and skills when confronting perplexing unknowns and creating solutions.

One way to think about this framework in day-to-day instruction is in terms of the roles that teachers and students play. When instruction and expected student learning is in Quadrant A, the focus is on "teacher work". Teachers expend energy to transmit content through learning activities, worksheets, and other assignments. The student is often a passive learner.

When student expectation moves to Quadrant B, the emphasis is on the student doing real-world tasks. This student work is often more complicated than Quadrant A work and requires more time. Learning in Quadrant B is best described as "student work" because students are doing extensive real-world tasks.

Learning in Quadrant C is best described as "student think". In this quadrant, students are expected to think in complex ways – to analyze, compare, create and evaluate.

Quadrant D activity can be characterized as "student think and work". Learning in Quadrant D is demanding and requires students to apply their thinking and knowledge in complex ways to solve difficult problems. Roles shift from teacher-centered instruction in quadrants A and C to student-centered instruction in quadrants B and D. In these quadrants, teachers still work hard, but their role is more as a coach or facilitator of learning. Learning for usage of knowledge occurs within the delivery of CTE program content in laboratory settings that replicate real work settings or through internships at work sites supervised by industry employers and teachers. CTE is where and how students learn the relevance of their acquired knowledge from academic coursework. Students require Quadrant B and D skills if they are to develop successful careers and become lifelong learners, problem solvers and decision makers.

Understanding that relevance is the anchor through which students acquire rigorous academic content is paramount to the success of the delivery of school curricula. Recent accountability measures from governments have mandated raising student acquisition of academic content in reading, writing, math and science through performance on standardized tests. In trying to

provide more instructional time to increase test scores, many schools have eliminated physical education and reduced instruction in the arts and technical courses to the detriment of students' health and their understanding of the relevance of learning. Education effectiveness is suffering.

Stretch Learning is the demonstration of rigorous and relevant learning beyond minimum requirements. Indicators include interdisciplinary work and projects such as a senior exhibition, internships, and college credits earned by graduation through dual enrollment. Stretch Learning is an integral part of all curricula for CTE programs. All students participate in Stretch Learning when they are involved in CTE courses. Additionally, students need to be engaged before they can apply higher order, creative thinking skills. They learn most effectively when the teacher makes sense and meaning of the curriculum material being taught. This can only happen if the teacher has created a safe learning environment that encourages students to meet challenges and apply high rigor skills to real-world, unpredictable situations inside and outside of school.

Recognizing that **relevance makes rigor possible**, successful schools should view state standards and assessments as baseline and understand that students need additional skills and knowledge for success after graduation. Educators must ensure that all students graduate from high school as college-career-and life-ready young adults. A quality education prepares students to enter the global economy with the ability to apply what they learned in school to situations that they cannot foresee before graduating.

The process of identifying and analyzing academic content embedded in CTE programs has been a complex and time consuming process that provides a valid basis for policy decisions relative to potential academic credit for CTE programs. In addition, the basis for contextual instruction is valuable for improvement of learning across disciplines as outlined above in the overview of Dr. Willard Daggett's work regarding rigor and relevance through The Center for International Leadership in Education.

Additional Information:  
The International Center for Leadership in Education  
**www. LeaderEd.com**