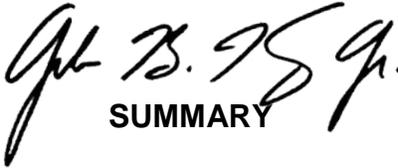




TO: P-12 Education Committee
FROM: Ken Slentz 
SUBJECT: CTE Pathway and Advisory Panel Update
DATE: November 29, 2012

AUTHORIZATION(S):


SUMMARY

Issue for Discussion

The CTE Content Advisory Panel has provided preliminary findings and recommendations around a pathway of instruction in CTE and integrated course work. Should the P-12 Education Committee consider these findings as part of their deliberations on multiple pathways to graduation and potential changes to the existing Commissioners Regulations pertaining to graduation requirements?

Reason(s) for Consideration

Review of Policy

Proposed Handling

This issue will come before the P-12 Education Committee for discussion at the December 2012 meeting.

Procedural History

At the June 2012 P-12 Education Committee of the Board of Regents the committee charged the Department with forming a CTE Content Advisory Panel made up of Career and Technical Education stakeholders including business/ industry representatives. Since June the Panel has met three times. This item includes an update on the proceedings of the Panel to date. See Attachment A for an inclusive list of Panel participants.

Background Information on Current CTE Policy

In 2000, the Board of Regents created a new policy intended to encourage and help students complete a quality career and technical education based on higher academic standards with the goal of creating quality career and technical education (CTE) programs in schools and BOCES as a first-choice option for students.

The policy addressed the question of time – allowing students to take integrated or specialized courses that combine academic and career/technical skills and content. In addition, the policy promoted and upgraded career and technical education programs in the State and stimulated continuous program improvement. Students with a wide range of interests, career goals and abilities have access to career and technical programs that meet their academic and technical education and future goals. The policy included the following elements:

- a program approval process;
- flexibility in the delivery of core academic courses;
- a work skills employability profile;
- technical assessments based on industry standards; and
- technical endorsement on the Regents diploma and Regents diploma with advanced designation.

Challenges to the Current CTE Learning Continuum

The statewide delivery of the CTE learning continuum is uneven; district capacity to offer meaningful CTE experiences is varied; and gaps in opportunity exist. The first formal introduction to CTE is through middle level family and consumer sciences (Home and Career Skills) and technology, but courses in these two CTE content areas do not encompass all that CTE has to offer. Requiring instruction in only two of six CTE content areas limits students' CTE experience. Further, schools may not offer foundational CTE courses to bridge middle school instruction with approved CTE programs.

For many, there is a gap in CTE courses available for grades 9 and 10. These are critical years for academic credit accumulation. Even in the most robust CTE programs, a gap exists in academic credit availability via CTE at these grade levels. Increasing the opportunities for earning graduation credits through CTE courses in grades 9 and 10 encourages student engagement and persistence to graduation.

Finally, approved CTE programs, those able to offer integrated academic credits for graduation, are concentrated at grades 11 and 12 and most frequently in CTE themed high schools or BOCES. Currently, not all students who could benefit from approved CTE programs have access.

Islands of Excellence

Despite the inconsistency there are examples of high performing CTE programs that deserve mention.

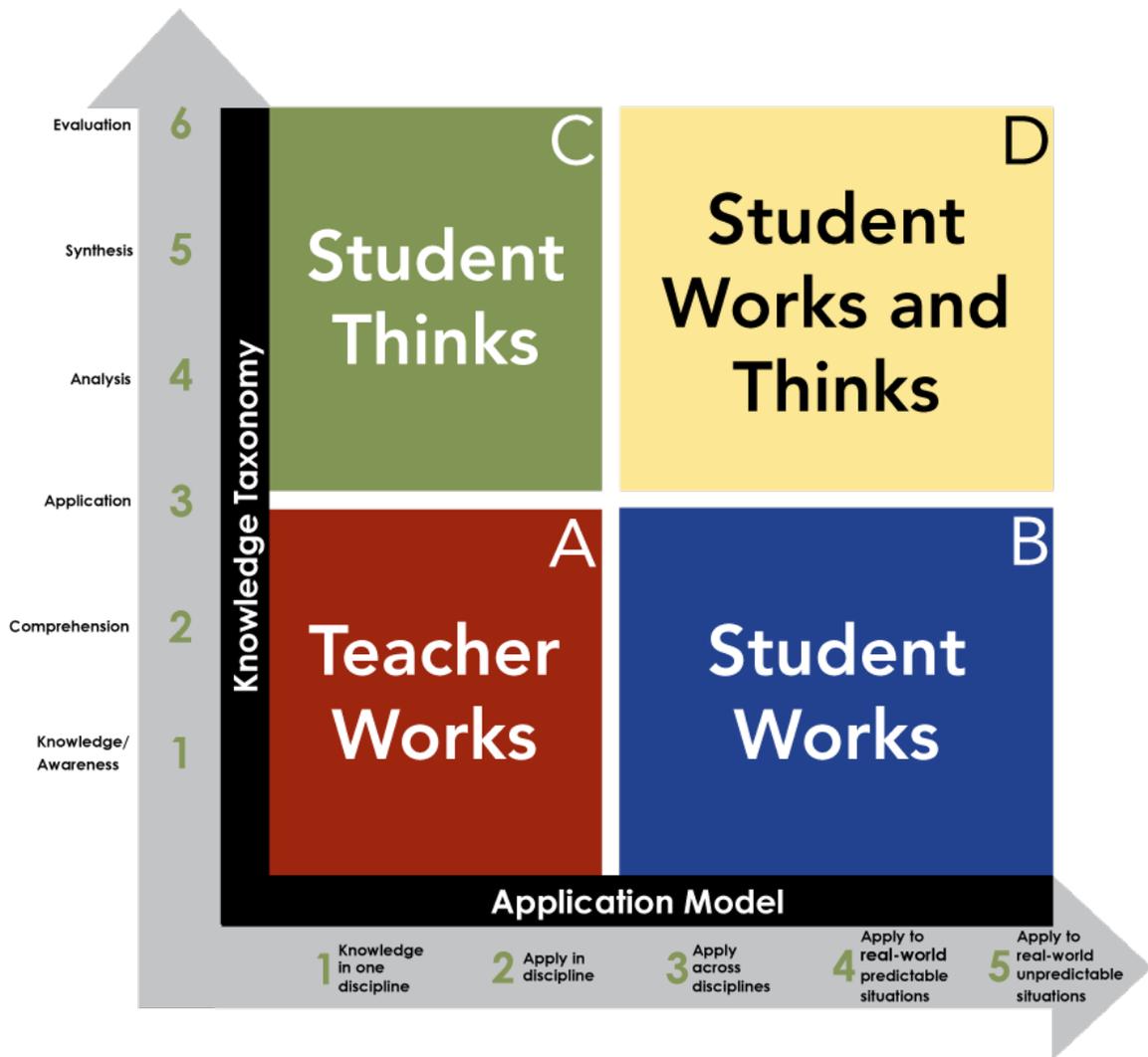
Ulster BOCES: Under its Technology Centers That Work program, the Ulster BOCES Career & Technical Center has an integrated academic English language arts (ELA) program with three elements: Technical Communications Instruction (TCI), English 11, and English 12. TCI is the integrated part of the ELA program, which is a push-in team taught course utilizing a trade instructor and English teacher. English teachers “push” into trade classes for two hours each week and plan and deliver instruction and lessons designed to support and enhance trade and technical knowledge while building language arts skills.

Emerson School of Hospitality: Emerson School of Hospitality serves more than 450 students, drawn from across Buffalo Public Schools. Ninety percent of the students graduate, with 82% of these graduates attending college. Over six years, Emerson has seen a steady progression of more students passing both ELA and math Regents tests. Of graduating seniors in 2011, 73% received a technical endorsement on their diploma. Minority students make up 80% of the student body. The attendance rate has been more than 90% over the last five years. All CTE students are expected to complete a technical assessment; in 2011, 87% passed.

Walton Central School’s Agricultural Science Program: The school’s Agricultural Science Program (ASP) provides strong introductory instruction in welding, small animals, and plant science. Of the students in the program, 67% are identified as students with disabilities and 63% receive free or reduced-priced lunch. Program attendance rate is 93%. In 2011, 100% program concentrators graduated.

Framing the Content Advisory Panel Discussion

The Advisory panel discussions and presentations emphasized the elements of college and career readiness in preparing students for after high school. The following graphic illustrates the synergy of combining academic and technical knowledge and skills.



Graphic courtesy of International Center for Leadership in Education

Traditional CTE has offered training for employment and job-readiness (horizontal connection with jobs). The traditional academic pathway has offered students a vertical route to college-readiness and then college graduation. Career readiness falls somewhere between. Contemporary CTE programs are preparing for this shift by aligning with the Common Core State Standards and analyzing what colleges and the work place require for success.

If integrated instruction is the vehicle for preparing students for a career pathway a distinction needs to be made between integrated courses and integrated programs. Courses represent discrete blocks of time (45 minute periods) devoted to a subject. An integrated course intentionally focuses on specific academic content (i.e. math, ELA) in a contextualized manner. In contrast, an integrated program (CTE Approved Program leading to a technical assessment) has demonstrated that the particular technical content area, for example, Building Trades program, utilizes a sufficient amount of

commencement level academic content, such as, mathematics, to justify awarding academic credit. Generally these are programs of from one to two years in length.

The goal associated with permitting more integrated courses is to provide an opportunity for more students to gain academic proficiency in a real world context within a career focus. Current research has indicated this approach increases student persistence to stay in school and contributes to reduced drop out rates¹.

Since the last update to the P-12 Education Committee in October 2012, the CTE Advisory Panel met two more times and discussed a number of CTE-related issues that currently exist in school districts. The following belief statements summarize some of the Panel's thinking:

- All students can benefit from a CTE experience and it must be made available as early in their education as practicable (no later than 5th or 6th grade).
- CTE should not be viewed as separate from academic instruction (a hybrid model must evolve)
- Career-focused integrated instruction in the broadest sense can be a strategy to engage more students and increase performance (especially in 9th and 10th grade).
- Integrated course work should be foundational, intentional, and contextualized that leads and connects the student to an area of interest
- STEM/Arts is an opportunity to integrate non-academic subject content into career-focused instruction
- Existing CDOS standards must be fully implemented and assessed with the Common Core and aligned with Career Clusters to make a meaningful change to the P-12 culture
- "Career Readiness" needs to be clearly and unambiguously defined
- To be viewed as a credible option for students, CTE needs to be held accountable to aspects of the Common Core State Standards (with its ties to career readiness) and subsequent assessments
- Business/Industry is willing to (and must) be engaged in more than an advisory capacity
- Business views CTE as a vehicle for innovation and experimentation
- Business/industry can advocate for educational change if given the direction with stated goals
- As in business, teachers must continuously reinvent themselves through professional development to stay current in their field

The discussions of the CTE Advisory Panel while far ranging, worked to identify how aspects of the charge to the Panel could be operationalized in our educational system. A sample list of potential integrated courses was developed and is attached (Attachment B).

¹ ACTE Issue Brief: Dropout Prevention and Recovery, Association for Career and Technical Education, 2007

CTE Technical Skills Assessment Study Overview

At the October 2012 P-12 Education Committee meeting a study was commissioned with Stephen Hamilton at Cornell and William Symonds at Harvard to identify 10-25 assessment instruments designed to determine high school Career and Technical Education students' achievement that are of sufficient quality and rigor to serve in place of a NYS Regents examination. An expert advisory board will convene with 12 members (Attachment C) who are knowledgeable about CTE assessment and or about the assessment of academic achievement and employment-related competencies. The board members will:

- Nominate occupational assessment instruments;
- Discuss nominations and rate their appropriateness;
- Recommend criteria and procedures for determining the suitability of nominated instruments;
- Review and reach consensus on a list of approved instruments and the explanations for the choices.
- Provide a working definition of "career ready."

This work is scheduled to commence in December.

Integrated Instruction Challenges

Implementation of many of the strategies mentioned above will require changes to the existing CTE system:

- The current CTE policy design has proved most favorable to the BOCES extended time model for integrated credit by allowing students to receive integrated instruction at the BOCES. School district CTE programs have not been able to fully take advantage of integrated instruction benefits and program approval due to limited resources and facilities.
- There are few examples of integrated courses that could serve as models.
- There are few incentives for school districts to change to an integrated approach (most take a course by course ("specialty course") approach).

Recommendation

It is recommended that the Board direct the CTE Content Advisory Panel to finalize recommendations for supporting multiple pathways towards college and career readiness including career-focused integrated courses and programs.

Timetable for Implementation

The CTE Content Advisory Panel will meet on December 14, 2012 to finalize recommendations. The P-12 Education Committee discussion on proposed regulatory language to support a CTE instructional continuum will take place at their January 2013 meeting.

**CTE Content Advisory Panel Invited for September 18, October 15, November 9, 2012 Meetings
(With alternates and additions for December 14 meeting)**

Participants	
Name	Affiliation
Dr. Willard R. Daggett Founder and Chairman of the Board International Center for Leadership in Education	Panel Facilitator
Hans K. Meeder , President, Meeder Consulting Group, LLC, Former Assistant Secretary USDOE	Business/Industry Partnership Consultant
Jay A. DeTraglia , HFM BOCES CTE Director	BOCES CTE Director
Steven Mazzola , Principal Saunders Trade and Technical High School	HS Principal – Large City
Rachel Anderson Greenville CSD	HS CTE (Ag)Teacher
Margaret E. Ashida , Director Empire State STEM Learning Network The State University of New York	"SUNY Education Pipeline - Empire STEM"
Christine Bunn Liverpool CSD	Middle School Home and Career Skills Teacher
Sterling Roberson Vice President of Career and Technical High Schools United Federation of Teachers	Teacher Union Representative
Jack Powers , Director International Informatics Institute	NYC CTE Advisory Council Chair
David Fischer Senior Director for Career and Technical Education NYC Department of Education	NYC DOE
Mike Mandina , President Optimax Systems, Inc.	Finger Lakes Advanced Manufacturing Enterprise FAME
George Zion , Affiliate Director Project Lead The Way	RIT (PLTW)
Matthew Spindler , Ph.D., SUNY Oswego	SUNY Oswego CTE Teacher preparation program
Mark Fish So. Glens Falls SD	Middle School Principal
Mario Musolino Executive Deputy Commissioner Department of Labor, State of New York	NYS Department of Labor
Dr. Richard Jones Successful Practices Network Consultant	Co-Facilitator

Ed Shafer Director CTE TAC	Technical Support
Merrill F. Pond , Senior Vice President Partnership for New York City	Business Organization
Jeffrey A. Lawrence Executive Vice President for Technology Center for Economic Growth	Business Organization
James N. Baldwin , J.D. Ed.D. District Superintendent Questar III BOCES	District Superintendent
Dr. Andrew E. DeFeo Assistant Superintendent Questar III BOCES	Assistant Superintendent
Frank S. Falatyn President FALA Technologies	Business/Industry
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Brendan Manning Education and Environmental Director Association of General Contractors	Business Organization

Course Requirements	Traditional Pathway Credits	Proposed CTE Pathway Integrated Credits	Proposed STEM Pathway Credits	Integrated Course Examples (course titles are illustrative)
English*	4	3 integrated course options	3 (including at least one integrated course)	Technical Journal Writing Ethics in Emerging Technologies Business Communications
Social Studies*	4	2 or 3 integrated course options	2 or 3 (including at least one integrated course)	Global Economic Systems Industrial Revolution and Modern Innovation Social Media and Society
Mathematics*	3	2 integrated course options	2 (including at least one integrated course)	Precision Measurement Differential Calculus for Electronics HyperMath ²
Science*	3	2 integrated course options	2 (including at least one integrated course)	Material Science HyperPhysics ³ Biometrics
Physical Education (PE)	2	N/A		
Art / Music ⁴	1	1 integrated course options	1 (including at least one integrated course)	Industrial Design Prototyping
Health	0.5	0.5 (in a Health Occupations Program)		
LOTE	1	N/A		
Additional Units of Credit:(Sequence / Electives)	3.5	3.5 credits in CTE technical content courses	Additional math and science courses	
Integrated Credits	0	Up to 11.5		
Total Units of Credit	22	-		

*Courses with required Regents exams would maintain the recommended preparation course(s) in that subject.

² <http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html>

³ <http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html>

⁴ This requirement may currently be met through a CTE Design, Drawing and Production (DDP) course or through a sequence in Family and Consumer Science i.e., Clothing and Textile Core)

**CTE Assessment Review Panel
Tentative**

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NASDCTEc/NCTEF

Paul Weeks
Vice President, College and Career Readiness
ACT

Dane Linn
Vice President of Education, Workforce and Innovation
Business Roundtable

Jim Stone
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Dr. Gene Bottoms
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John Bishop
Professor, School of Industrial and Labor Relations
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John F. Ebersole
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Excelsior College

Ronald D. McCage
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Gretchen Koch
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Don Whyte
President
The National Center for Construction Education and Research

Andrew Rothstein
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IBM:
Representative to be determined