Academic Integration

What have we learned, where do we need to go?
What is the definition of Integration?

Definition of **integration**

1. the act or process or an instance of **integrating**: such as
   a. incorporation as equals into society or an organization of individuals of different groups (such as races)
   b. coordination of mental processes into a normal effective personality or with the environment
The power of contextualization

- Increased interest by students with academic concepts
- Improvement in academic understandings related to the CTE content
- Enhanced self-confidence related to schoolwork in general
- Significant improvements in reading comprehension due to interest
- Deeper awareness of the importance of math and science concepts
- Increased completion rates for all populations (> 90%)
- Decrease in the amount of times that “why do I need to know this” is asked
The real power of academic integration

- Students realize, many for the first time, that they can develop academic understandings that they previously felt unattainable
- Students develop a deeper understanding of the CTE related skills as a result
- Students understand the “WHYS” as well as the “HOWS”
- Reading comprehension improves quickly due to interest in contents
- Math “Anxiety” is dramatically reduced or even eliminated
- Science concepts help students connect to their real world experiences
- The opportunity to create life-long learners
TAC Academic Integration Research Project

- Developed surveys and distributed to BOCES and School Districts that determined through previous site visits
- Reviewed completed surveys to identify various approaches to academic integration
- Made follow-up visits to each site to interview administrators and teachers for additional information and clarification
- Compiled all results identifying strengths and areas for improvement across the board
- Developed a summative report that highlighted key findings
- Created of a self-analysis rubric for use by BOCES and School Districts
Some Key Findings

- There is little offered procedures and practices by NYSED leaving organizations to identify their own strategies and approaches.

- Integration was often defined through the lens of credit acquisition and not as a delivery method.

- The dynamics of involving academic teachers within the district or component districts plays out differently in the various agencies.

- Continual planning and curriculum development improve the quality of programs and the re-approval process.

- Academic Integration Teachers have developed an understanding of the CTE curriculum elements over their years of service.

- Pockets of CTE teachers lack an understating of the rigor/commencement level academics.

- Co-planning tends to be the strongest element of the relationships between the CTE and academic integration teachers.
Strengths and Areas for Improvement

STRENGTHS

• Collaboration and constant revision of the curriculum are often voiced as the keys to a successful integration process.
• Both the academic and CTE teachers initiate ideas for the development of integrated learning activities
• Students are engaged in learning at a much deeper level and see the value of the academic understandings to deal with real-world problems and scenarios
• Post-Secondary articulation agreements supported academics through concurrent credit options for English and Math
• There are many variations on how districts award credit for students in approved CTE programs, however the consensus is that they are typically accepted and frequently used
• Programs are more effective where time is available daily for planning and development of lessons, curriculum, and assessment strategies
AREAS FOR IMPROVEMENT

- In many cases, a small number of academic integration teachers (sometimes only one in each content area) support 15-20 CTE programs and teachers.

- There is no systematic way to measure academic integration teacher effectiveness, evaluations are not based on actual work done over the year.

- In the LEAs, CTE teachers provide the academic teachers with content awareness, but the relationship between them and the academic teachers is very limited with little if any co-planning and/or co-teaching done regularly.

- Grading practices were not standardized nor integration focused, the various methods of assessment make it difficult to determine the degree to which students are gaining academic skills and knowledge.

- Differentiated assessment strategies for SWDs were not generally observed, however there were some differentiated learning strategies noted.

- Co-teaching is typically described as a push-in model where the academic integration teachers come into the CTE setting and deliver a lesson.

- Specific professional development for Academic Integration Teachers has not typically been available, there needs to be more focus in this area.
Standards of Practice

Curriculum Implementation Effectiveness

Developed Specifically for BOTH
The System Level (Organization) and
the Teacher Level (CTE and Academic Integration)
Curriculum at the Systems Level

Standardized curriculum templates are developed and/or adopted that articulate a CTE program’s industry, academic, CDOS, CFM, Career Readiness standards.

Curriculum documents describe what skills, knowledge, behaviors and competencies are to be learned, and explicitly outline learning activities and assessment strategies.

Curriculum documents include course descriptions, cross-walks, outlines, sequencing maps, unit plans, and assessment strategies.

System-wide standardized approaches are used to assess the comprehensive use of developed curriculum and implementation to ensure fidelity.

Curriculum development occurs using external partnerships (i.e. post-secondary, TAC, SREB, Industry and Zone/Statewide educators).

Differentiation strategies for Students with Disabilities are identified in the curriculum.

Employability Profiles include statements of competency related to academic proficiency in addition to industry, CDOS, and career readiness standards.
Curriculum at the Teacher Level

Standardized curriculum templates are used to frame co-planning efforts and guide day to day planning for instruction.

Integrated learning activities are co-planned and align with the industry-based knowledge and skills identified in the curriculum.

Co-planning time is productive, purposeful and drives instructional strategies.

Student assessment strategies are co-planned to routinely evaluate the acquisition of academic knowledge, skills, and proficiency.
Implementation at the Systems Level

An adequate number of Academic Integration Teachers are used to ensure commencement level standards are met.

The formal teacher evaluation process includes assessment of the implementation of the developed integrated curriculum.

The organization establishes and utilizes outcome measures to determine integration effectiveness at the course/program level.

Ongoing professional learning on integration of academics and CTE at local, regional and state level keeps staff current in best practices.

Instructional support staff are in place to assist SWDs to meet expectations of established curriculum.

A process is in place to routinely evaluate the implementation of the system-wide curriculum to ensure all curricular elements are included during the co-planning process.
Implementation at the Teacher Level

- Evaluation measures are established for implementation of co-planned activities to show the connection of technical and academic skills and knowledge.

- The co-planning process identifies and defines the co-teaching roles to ensure equitable and active involvement by both Academic and CTE teachers.

- The primary model used to focus on integration support is a push-in/co-teaching model that ensures quality of instruction is based on the expertise for the integrated subject.

- Visual representations are evident in the learning environment that show a commitment to the integration process.

- Both CTE and Academic Integration teachers are involved in, and responsible for, co-assessment strategies designed to measure student performance.

- Students perceive both academic and CTE teachers as equally important in the integrated learning environment.
Effectiveness at the Systems Level

Metrics are defined and developed that measure overall academic integration effectiveness at the organizational level.

External partners/stakeholders are enlisted to provide input on strategies to measure program effectiveness.

A system-wide approach exists that measures program effectiveness using qualitative and quantitative evidence with emphasis on quantitative evidence.

Program effectiveness data is established and used with faculty and staff to drive goals and improvement targets.

Grading system parameters are established for co-teaching strategies to ensure performance standards for students are universally implemented by teaching staff.
Effectiveness at the Teacher Level

Student formative and summative assessments are co-developed and align with identified system metrics.

Collaborative evaluation strategies for measuring student outcomes is evident for integrated academic learning activities.

Project-based learning assessment strategies include the development and use of rubrics that are developed and implemented collaboratively.

Co-assessment strategies include measuring additional outcomes such as career readiness, CDOS and CFM elements.

Assessment strategies explicitly measure specific academic skills, knowledge, and content.

Academic Integration Teachers participate in the evaluation of associated technical and academic skills, knowledge, and content within an assessment strategy.
# Self-Analysis Rubric Developed

## Curriculum at the Teacher Level

<table>
<thead>
<tr>
<th>STANDARDS OF PRACTICE</th>
<th>INEFFECTIVE 1</th>
<th>DEVELOPING 2</th>
<th>ACCOMPLISHED 3</th>
<th>EXEMPLARY 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized curriculum templates are used to frame co-planning efforts and guide day-to-day planning for instruction.</td>
<td>Curriculum is NOT based on the standardized template and does not effectively guide planning efforts.</td>
<td>The curriculum IS developed using the standardized template but DOES NOT effectively guide co-planning and/or daily plans.</td>
<td>The curriculum is WELL DEVELOPED using the standardized template and IS used to plan daily lessons but NOT co-planning efforts.</td>
<td>The curriculum is WELL DEVELOPED using the standardized templates and is used for planning lessons AND co-planning efforts with academic teachers.</td>
</tr>
<tr>
<td>Co-planning time is productive and purposeful and drives instructional strategies.</td>
<td>Co-planning time is NOT scheduled or used to support the planning of instructional strategies.</td>
<td>Co-planning time is RANDOM, not fully productive or purposeful, and NOT used to drive instructional strategies.</td>
<td>Co-planning time is MOSTLY scheduled, productive, and purposeful and IS USED to drive instructional strategies.</td>
<td>Co-planning time is explicitly scheduled, HIGHLY productive and purposeful, and USED to develop new instructional strategies.</td>
</tr>
<tr>
<td>Integrated learning activities are co-planned and align with the industry-based knowledge and skills identified in the curriculum.</td>
<td>There is NO evidence that co-planning takes place or, if it does, it may not align with industry standards.</td>
<td>Integrated learning activities are generally NOT co-planned but SOMETIMES align with the industry-based knowledge and skills identified in the curriculum.</td>
<td>Integrated learning activities are NOT ALWAYS co-planned and MOSTLY align with the industry-based standards in the curriculum.</td>
<td>Integrated learning activities ARE co-planned, documented, and FULLY aligned with the industry-based knowledge and skills identified in the curriculum.</td>
</tr>
<tr>
<td>Assessment strategies are co-planned to routinely evaluate the acquisition of academic knowledge, skills, and proficiency.</td>
<td>There is LITTLE or NO co-planning or use of assessment strategies to determine academic proficiency.</td>
<td>Assessment strategies are OCCASIONALLY co-planned, randomly documented, and NOT ALWAYS USED to evaluate academic knowledge and skills.</td>
<td>Assessment strategies are GENERALLY co-planned, documented, and USED to evaluate academic knowledge, skills, and proficiency.</td>
<td>Assessment strategies are ALWAYS co-planned and explicitly documented to evaluate academic knowledge, skills, and proficiency.</td>
</tr>
</tbody>
</table>
# Implementation at the Teacher Level

<table>
<thead>
<tr>
<th>STANDARDS OF PRACTICE</th>
<th>INEFFECTIVE 1</th>
<th>DEVELOPING 2</th>
<th>ACCOMPLISHED 3</th>
<th>EXEMPLARY 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The primary model used to support academic integration is a consistent push-in/co-teaching model, which ensures quality instruction based on the expertise of the academic and CTE teachers.</td>
<td>The model for academic integration support does NOT ensure the quality of instruction due to lack of expertise or capacity.</td>
<td>Integration support relies heavily on RANDOMLY co-planned or co-taught lessons that are NOT connected to the industry standards within the CTE curriculum.</td>
<td>Integration support is provided through a co-planning and co-teaching approach that is MOSTLY scheduled and directly connected to the industry standards being taught.</td>
<td>Academic integration support is achieved through a CONSISTENTLY implemented and scheduled push-in/co-teaching model that ensures quality of instruction is based on teacher expertise.</td>
</tr>
<tr>
<td>The co-planning process identifies and defines the co-teaching roles to ensure equitable and active involvement by both academic and CTE teachers</td>
<td>The co-planning process FAILS to define the roles of both academic and CTE teachers to ensure active involvement.</td>
<td>The co-planning process identifies the co-teaching roles but does NOT define them well enough to ensure equitable and/or active involvement by both academic and CTE teachers.</td>
<td>The co-planning process IDENTIFIES and DEFINES the co-teaching roles to ensure equitable and active involvement by both academic and CTE teachers.</td>
<td>The co-planning process is used to IMPROVE co-teaching and ensure the equitable and active involvement by both academic and CTE teachers.</td>
</tr>
<tr>
<td>Visual representations are evident in the learning environment that show a commitment to the integration process.</td>
<td>Visual representations that show the importance of academic content in the CTE program area are FEW or ABSENT entirely in the learning environment.</td>
<td>Visual representations are present in the learning environment but DO NOT effectively demonstrate the importance of academic knowledge in CTE.</td>
<td>Visual representations in the learning environment CLEARLY demonstrate the importance of academic knowledge in CTE.</td>
<td>Visual representations in the learning environment demonstrate the COMMITMENT to academic knowledge in CTE.</td>
</tr>
<tr>
<td>Student evaluation measures are established for implementation of co-planned activities to show the connection of technical and academic skills and knowledge.</td>
<td>Student evaluation measures are NOT established that show the connection between technical and academic skills and knowledge.</td>
<td>Student evaluation measures are developed but DO NOT ALWAYS show the connection between technical and academic skills and knowledge.</td>
<td>Student evaluation measures are developed and IMPLEMENTED that show the connection between technical and academic skills and knowledge.</td>
<td>Student evaluation measures are developed through the CO-PLANNING process that show the connection between technical and academic skills and knowledge.</td>
</tr>
<tr>
<td>Students perceive both academic and CTE teachers as equally important in the integrated learning environment.</td>
<td>Students DO NOT perceive both academic and CTE teachers as equally important in the integrated learning environment.</td>
<td>Students typically perceive CTE teachers as MORE important in the integrated learning environment.</td>
<td>Students generally perceive both academic and CTE teachers as EQUALLY important in the integrated learning environment.</td>
<td>Students in ALL programs perceive both academic and CTE teachers as equally important in the integrated learning environment.</td>
</tr>
<tr>
<td>Both CTE and academic integration teachers are involved in, and responsible for, co-assessment strategies designed to measure student performance.</td>
<td>CTE teachers are SOLELY responsible for assessment strategies.</td>
<td>Both CTE and academic integration teachers are involved in assessment, but strategies are NOT typically co-planned.</td>
<td>Both CTE and academic integration teachers are involved in CO-ASSESSMENT of students in relation to integrated academics.</td>
<td>Both CTE and academic integration teachers are involved in co-planning and co-assessment strategies in ALL programs.</td>
</tr>
</tbody>
</table>
## Effectiveness at the Teacher Level

<table>
<thead>
<tr>
<th>STANDARDS OF PRACTICE</th>
<th>INEFFECTIVE 1</th>
<th>DEVELOPING 2</th>
<th>ACCOMPLISHED 3</th>
<th>EXEMPLARY 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative and summative assessments are co-developed and align with identified system metrics</td>
<td>There is NO evidence that assessments are co-developed or are matched to system metrics.</td>
<td>Assessments have been co-developed in SOME programs but are NOT consistent with identified system metrics in all cases.</td>
<td>Assessments have been co-developed in ALL programs and MOSTLY align with identified system metrics.</td>
<td>Assessments have been co-developed in ALL programs that STRONGLY align and support identified system metrics.</td>
</tr>
<tr>
<td>Collaborative evaluation strategies for measuring student academic learning outcomes are evident for integrated activities.</td>
<td>There is NO collaboration between teachers for measuring student academic outcomes.</td>
<td>INCONSISTENT collaboration for the assessment of integrated academic outcomes is evident in most units or lesson plans.</td>
<td>There is a CONSISTENT commitment to collaboration for student assessment of academic proficiency in integrated learning activities.</td>
<td>Collaborative evaluation strategies for measuring student outcomes is CONSISTENTLY evident and demonstrably IMPROVES integrated academic learning activities.</td>
</tr>
<tr>
<td>Project-based learning (PBL) assessment strategies include the use of rubrics that are developed and implemented collaboratively.</td>
<td>NO rubrics are developed through collaborative efforts between academic and CTE teachers.</td>
<td>PBL assessment strategies frequently DO NOT include the use of rubrics developed through collaborative efforts.</td>
<td>PBL assessment strategies include the collaborative DEVELOPMENT of rubrics used separately by academic and CTE teachers.</td>
<td>PBL assessment strategies include the collaborative DEVELOPMENT and USE of rubrics by BOTH academic and CTE teachers.</td>
</tr>
<tr>
<td>Co-assessment strategies include measuring additional outcomes, such as career readiness, CDOS, and CFM elements.</td>
<td>Additional outcomes such as career readiness, CDOS, and CFM elements are NOT typically assessed.</td>
<td>CDOS, career readiness, and CFM elements MAY BE measured but NOT through collaborative efforts.</td>
<td>CDOS, career readiness, and CFM elements ARE measured through collaborative efforts between CTE and academic teachers.</td>
<td>ALL co-assessment strategies include measuring additional outcomes, such as career readiness, CDOS, and CFM elements and are consistent with grading parameters.</td>
</tr>
<tr>
<td>Assessment strategies explicitly measure specific academic skills, knowledge, and content.</td>
<td>There are NO assessment strategies that measure specific academic skills.</td>
<td>Assessment strategies INCONSISTENTLY measure academic skills and/or knowledge documented in the formal curriculum.</td>
<td>Assessment strategies GENERALLY measure academic skills, knowledge, and content documented in the formal curriculum.</td>
<td>Assessment strategies EXPLICITLY measure specific academic skills, knowledge, and content documented in the formal curriculum.</td>
</tr>
<tr>
<td>Academic integration teachers participate in the evaluation of associated technical and academic skills, knowledge, and content within an assessment strategy.</td>
<td>Academic integration teachers DO NOT participate in the evaluation of technical and academic skills/knowledge.</td>
<td>Academic integration teachers participate in the evaluation of academic content ONLY.</td>
<td>Academic integration teachers MOSTLY participate in the evaluation of associated technical and academic content.</td>
<td>Academic integration teachers ALWAYS participate in the evaluation of associated technical and academic skills, knowledge, and content.</td>
</tr>
</tbody>
</table>
Next Steps
Moving forward to improve the quality of Academic Integration

- Continue to collaborate with other Academic Integration Teachers
- Work with CTE Teachers to identify additional learning activities
- Develop an Academic Advisory Committee
- Seek out and engage in Professional Development
- Identify and use all available resources
- Identify best practice in your own schools and replicate them
- Learn more about the CTE Programs that are resistant, find out why
- Consider the Rigor and Relevance Framework as a model to adopt
- Develop assessment strategies that are co-planned and implemented
- Attend workshops and conferences that focus on integration
- Engage in webinars that are offered online (often available on demand)
- Meet with post-secondary representatives to identify common concerns
Rigor and Relevance Framework
International Center for Leadership in Education
http://www.leadered.com
The Knowledge Taxonomy (y-axis) is a continuum based on the six levels of Bloom’s Taxonomy, which describes the increasingly complex ways in which we think. The low end involves acquiring knowledge and being able to recall or locate that knowledge. The high end labels the more complex ways in which individuals use knowledge, such as taking several pieces of knowledge and combining them in both logical and creative ways.
The second continuum (x-axis)—created by Bill Daggett—is known as the Application Model. A continuum of action, its five levels describe putting knowledge to use. While the low end of the continuum is knowledge acquired for its own sake, the high end signifies action—use of that knowledge to solve complex, real-world problems and create projects, designs, and other works for use in real-world situations.
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this knowledge.</td>
<td>Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply knowledge to new and unpredictable situations.</td>
<td>Students extend and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create solutions.</td>
<td>Students have the competence to think in complex ways.</td>
</tr>
</tbody>
</table>

For more information about the Rigor/Relevance Framework, please read our white paper The Rigor/Relevance Framework: A Guide to Focusing Resources to Increase Student Performance.
Resources

NY State CTE Technical Assistance Center
http://nyctecenter.org

ACTE (Association for Career and Technical Education)
http://acteonline.org

NYSACTE (NY State Association for Career and Technical Education)
http://nysacte.org
NYSACTE Joint CTE Conference

Thank you for your interest in attending the NYSACTE Joint CTE Conference. This engaging two-day conference will be held at the Holiday Inn in Liverpool, NY, just outside of Syracuse.

Over 300 CTE administrators and teachers in the areas of Ag, Business, FACS, Technology, Trade and Technical, Health Occupations and Work Experience Coordinators, as well as school superintendents, principal, school counselors and other FACS professionals will gather to gain knowledge of the most current issues, policies and practices in career and technical education (CTE); hear about best practices in CTE programs and classrooms; identify strategies for CTE advocacy; share classroom strategies and tools; increase skills as a teacher or administrator; and earn professional development hours.

Keynote speaker Josh Davies, CEO at the Center for Work Ethic Development Company, is a published author and frequently cited in national publications, including the New York Times. He currently serves on the Board of Directors for the National Association of Workforce Development Professionals, where he gets to share his passion with professionals from across the country.

Our exhibit show provides unique networking opportunities with vendors in our field. Learn about new services and tools during dedicated exhibit time or between sessions.

Register today for New York State's premiere conference on career and technical education.

Please invite your CTE colleagues to learn about the NYSACTE Joint CTE Conference by visiting our website www.ctejointconference.com or by downloading and sharing our conference flyer.

NYSACTE's Conference Community Service Project

NYSACTE would like to invite you to join us by participating in our community service project, and to make a difference in the lives of those who are hungry!

Please bring a nonperishable food item for the CENTRAL FOOD BANK when you register, or if you prefer, a cash donation box will also be available.

www.ctejointconference.com
Thank you!