

*West Virginia
Board of Education*

Innovation Zone Designation

**COMPETITIVE GRANT
APPLICATION**

***Mercer County Technical Education
Center***



**1397 Stafford Drive
Princeton, WV, 24740**

***Division of Educator Quality and
System Support
West Virginia Department of Education***

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ABSTRACT

The Association for Career and Technical Education (Meeder & Hebert-Giffen, 2009) reports that career and technical education (CTE) coursework has been overlooked in the national effort to prepare students for postsecondary education and workforce success. Central to the transition of career and technical centers of education to technical high schools and meeting the college and career readiness challenge is the recognition of academic credit for CTE coursework. As steps are being taken to require students to take more and higher levels of academic courses to improve their performance in the areas of college and work readiness, a balance must be achieved by ensuring that instruction is both relevant and real-world. Increasing graduation requirements without seeking new engaging forms of teaching and learning may have a negative effect in two ways. First, already struggling students may feel the need to drop out. Secondly, as graduation requirements increase, fewer and fewer slots are available for elective courses, often ones that students find more engaging, such as CTE programs of study.

The Mercer County Technical Education Center (MCTEC) has demonstrated outstanding success in the job placement of students who have successfully completed a CTE concentration program of study. Yet, MCTEC has struggled to increase CTE program retention and completion rates. In order to prepare students for postsecondary education, develop a skilled workforce, certify graduating students job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance, MCTEC proposes to transition from a career and technical education center to establish the first technical high school in West Virginia. Through Innovation Zone grant funding, MCTEC will develop coursework that will award students with CTE credits and partial or full academic content course credits.

C: NARRATIVES FOR THE INNOVATIVE ZONE APPLICATION

Project Design

Needs Assessment

The Mercer County Technical Education Center (MCTEC) serves high school students and adults in the Mercer County school attendance area. According to 2009-2010 WVDE School Profile data, Mercer County has a total school enrollment of 9,552. There are four high schools in Mercer County serving a total of 2,771 students (see Table 1). Princeton has the highest high school enrollment, with a total of 1,052 students, while Montcalm has the lowest enrollment with a total of 359 students.

Two Mercer County High Schools have a percentage of low income students higher than the State average of 51.9% (see Table 1). The percentage of low income students attending Montcalm High School is 55.71%, and the percentage of low income students at Bluefield High - the highest of the four schools – is 57.37%. The attendance rate at each high school during the 2008-2009 school year was lower than the State attendance rate of 96.6% (see Table 1). Montcalm High recorded the county's lowest high school attendance rate at 93.64%.

Pikeview was the only Mercer County high school with a graduation rate above the State rate of 83.8%. In 2008-2009, Bluefield, Montcalm and Princeton High Schools had graduation rates lower than the State graduation rate (see Table 1). In 2008, the State dropout rate was 3% (see Table 1) but Mercer County's rate was the 10th highest in WV. In 2009, PSHS reported a rate of 6.6%, and Bluefield High School, at 7.0%, had more than twice the State rate.

Table 1. Mercer County High School Profile

Mercer County High School Profile –2009 Data					
	Bluefield High School	Montcalm High School	PikeView High School	Princeton High School	State
Total Enrollment	685	359	675	1052	281,008
Percent Low Income	57.37%	55.71%	46.22%	39.54%	51.9%
Attendance Rate	94.26%	93.64%	95.93%	96.58%	96.6%
Graduate Rate	74.64%	79.69%	89.8%	81.61%	83.81%
Number of Graduates	103	51	132	213	17,676
Dropout Rate	7.0%	2.40%	2.5%	6.60%	NA
Average Class Size	22.5	20.1	21.6	24.9	NA

A review of high school reading and mathematics student performance trend data reveals that a majority of Mercer County high schools have consistently performed below the state average for West Virginia high schools. In 2009, three of four Mercer County high schools fell below the state WESTEST 2 proficiency rate of 62.5% in reading. For mathematics in 2009, both MHS and PVHS scored significantly below the State proficiency rate of 61.1%.

Table 2. Mercer County High School Reading and Mathematics Profile

Mercer County High School Reading and Mathematics Profile												
	Reading*						Mathematics*					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
State	77.2%	78.9%	80.0%	80.0%	80.0%	62.5%	67.9%	73.2%	75.4%	75.6%	75.3%	61.1%
Bluefield	71.8%	70.3%	72.1%	79.8%	75.6%	50%	53.4%	70.5%	69.8%	76.9%	73.8%	65.4%
Montcalm	71.3%	74.2%	82.3%	75.5%	80.5%	50.3	54.3%	59.3%	70.3%	66.3%	66.5%	44.8%
Pikeview	77.4%	79.1%	75.6%	78.6%	74.8%	66%	58.1%	71.8%	65.2%	73.1%	61.8%	47.1%
Princeton	79.4%	73.0%	75.9%	79.4%	78.9%	60.1%	67.7%	79.8%	67.0%	69.9%	73.7%	69.4%

*All scores in bold print are below State average scores for reading or mathematics on WESTEST or, beginning in 2009, WESTEST 2.

MCTEC students who complete a CTE program of studies take the WorkKeys assessment, which consists of three basic components: reading, mathematics, and locating information. The State career and technical schools are expected to meet or exceed a 60% level of students meeting standards. The WorkKeys data for 2008 program completers shows that MCTEC students exceeded State standards (see Table 3).

Table 3. MCTEC 2008 WorkKeys Data Profile

MCTEC 2008 WorkKeys Data Profile									
	Reading			Mathematics			Locating Information		
	Tested	Met Standard	% Met Standard	Tested	Met Standard	% Met Standard	Tested	Met Standard	% Met Standard
Marketing Management	2	1	50	2	2	100	2	1	50
Dental Assisting	8	8	100	8	4	50	8	7	87.5
Health Occupations	24	21	87.5	23	21	91.3	22	17	77.3
Finance/Accounting	7	6	86.7	7	6	85.7	7	4	57.1
Automotive Technology	6	2	33.3	4	3	75	5	2	40
Collision Repair Technology	11	3	27.3	10	10	100	9	6	66.7
Computer System Maint.	7	2	28.6	8	6	75	8	5	62.5
Conventional CAD	1	1	100	1	1	100	1	1	100
Cosmetology	12	6	50	12	10	83.3	12	9	75
Graphic Design	2	2	100	3	1	33.3	2	2	100
Masonry	2	2	100	1	1	100	1	1	100
Welding Technology	14	12	85.7	15	11	73.3	13	11	84.6
Summary Total	96	66	68.75*	94	76	80.85*	90	66	73.33*

*State mastery score for each program area is 60%.

Unemployment rates, according to 2009 data from the Bureau of Labor Statistics for Mercer County, show that the district unemployment rate rose from September 2008 to September 2009 from 3.2% to 6.9%. The net increase of 3.7% was lower than the State net increase of 4.5 % for that same period, but was higher than the National net increase of 3.5%. Not since 1993 has the unemployment rate for Mercer County been at or above 6.9%.

According to the U.S. Census Bureau, Mercer County population has declined by 2.3% over the last 10 years. The Census Bureau also reports that the percent of high school graduates among persons over the age of 25 in Mercer County is 72.1%, which is lower than the State percent of 75.2% for the same age group. The percent of Mercer County residents over the age of 25 that have obtained a bachelor’s degree of higher (13.8%) is below the State average of 14.8%.

The median household income in 2007 was \$5,159 lower than the West Virginia median income of \$37,057. Statistics show that the median income gap for the Mercer County area has continued to increase over the last ten years with employees earning less than the State median average. Likewise, the percent of total persons in Mercer County living below the poverty rate in 2007 was 21.8%, while the West Virginia percent below poverty was 17.1%.

Program enrollment at MCTEC has increased over the last few years with an overall net increase of 28% from the fall of 2008 to the fall enrollment of 2009 (see Table 4). The greatest increases in program enrollment have been experienced in Machine Technology and Health Occupations. With the exception of Business, program enrollments have remained stable. The MCTEC schedule follows a 4-block schedule and enrollment is consistent across all four blocks of the schedule with a high enrollment of 233 for the first block to a low enrollment of 195 for the second block of instruction.

Table 4. MCTEC Enrollment

MCTEC Enrollment			
Program	2008 Enrollment	2009 Enrollment	Net Change
Automotive Technology	52	52	0
Business	84	57	-27
C.A.D.D.	34	48	+14
Computer Engineering	40	54	+14
Collision Repair	67	60	-7
Cosmetology	58	74	+16
Graphic Design	59	54	-5
Health Occupations / A	63	88	+25
Health Occupations / B	47	82	+35
Lodging	34	41	+7
Machine Technology	0	54	+54
Marketing	54	63	+9
Masonry	31	44	+13
Welding Technology	50	60	+10
TOTALS	673	831	+158

At the same time that program enrollment is increasing, it is acknowledged that the number of program completers is low (see Table 5). In 2008 MCTEC enrolled a total of 474 students in CTE programs of study while the number of completers in 2009 was 76. Just comparing one year of sample enrollment with a one year sample number of program completers reveals that approximately 16% of students enrolling at MCTEC actually complete a CTE

program of study. Of the 76 program completers in 2009, 71 were placed in jobs, yielding a job placement rate of 93%

Table 5. MCTEC 2007 Cohort Enrollment, Completion and Placement

MCTEC 2007 Cohort Enrollment, Completion and Placement					
Program	2008 Enrollment	2009 Completers	Percent of Completion	Number Placed in Jobs	Percent of Completers Placed in Jobs
Automotive Technology	52	7	13.5%	5	71%
Computer Engineering	40	8	20.0%	8	100%
Collision Repair	67	8	11.9%	7	87%
Cosmetology	58	8	13.8%	8	100%
Graphic Design	59	3	5.3%	3	100%
Health Occupations	63	24	38.1%	22	91%
Marketing	54	3	5.6%	3	100%
Masonry	31	2	6.5%	2	100%
Welding Technology	50	13	26.0%	13	100%
Summary Total	474	76	16%	71	93%

In 2009, the program with the highest completion rate was Health Occupations with a completion rate of 38.1% and eight programs had a program completion rate of less than 20%. Placement data reveals that once students have completed a program, the chance they can be successful in being employed stands at greater than 95%. The difficulty in assisting students to complete a concentration remains a challenge for MCTEC.

This needs assessment demonstrates that high school conditions and programs of study must be improved to prepare students for postsecondary education, develop a skilled workforce, certify graduating students as job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.

Project Goals and Objectives

The Mercer County Technical Education Center is pursuing an Innovation Zone grant to develop a research-based plan for transitioning the existing educational facility known as MCTEC to that of a technical high school. In functioning as a technical high school, MCTEC would prepare students for vocational success by integrating core curriculum subjects into career and technical programs of study, resulting in a rigorous, specialized curriculum that is relevant to the chosen occupation of individual students. The transition to a technical high model will develop a skilled workforce, decrease the dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.

Goal: The goal of the MCTEC Innovation grant application is to prepare students for postsecondary education, develop a skilled workforce, certify graduating students as job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.

Objective: MCTEC will transition from a career and technical school to a technical high school.

Project Description

The goal of the MCTEC Innovation Grant application is to develop a skilled workforce, decrease the dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance through the transition of MCTEC from a career and technical education center to status as a technical high school. Students will request admission to a career and technical education program of

study at MCTEC during their ninth grade high school year of studies. CTE program requirements will determine the point at which students enroll in technical high school programs of study. During their 10th, 11th, and 12th grade studies, as determined by CTE program requirements, enrolled students will attend the MCTEC for all academic and CTE content and will receive both CTE and academic credit for approved programs of study.

Because programs of study are based on relevant, real-world application of content learned, student attendance and graduate rates will increase. As a result of the connection between school experiences and future work opportunities, dropout rates will decrease. Students will increase time for learning because they will not be transported between local high schools and the career and technical education center. Currently, student completion of CTE programs of study and certifications earned is low because students often must drop CTE programs of study as they attempt to also achieve completion of high school graduation requirements. As students have the opportunity to complete CTE and academic requirements in tandem, the number of CTE completers as well as the number of graduates prepared for additional study of the workplace will increase. Relevant programs of study will increase both academic and CTE program retention rates. Because CTE completers will spend more time relating academic content to CTE experiences, the depth of knowledge for both academic and CTE content will increase. As the number of CTE program completers graduating from MCTEC increases, the numbers of employable young adults in the Mercer County school district will increase, reducing area poverty rates for young adults entering the workforce.

According to Meeder & Hebert-Giffen (2009), a total of 36 states currently have a state policy or local allowance for the awarding of academic credit for completion of courses designed to teach both CTE and academic content. This Innovation Zone grant will permit relief from

State and Local Board policies that require completion of specific academic courses for graduation as well as completion of specific courses of study for CTE program completion and allow MCTEC to develop courses of study that meet both academic content and CTE content requirements.

Following a 2008-2009 review of state and local policies and efforts to recognize academic credit for completion of CTE coursework, Meeder & Hebert-Giffen (2009) recommend a systemic process for course approval:

1. a detailed review of academic standards and course curriculum to ensure there is a fit between academic and CTE content,
2. curriculum mapping of each course conducted through the collaboration of the academic and CTE teachers,
3. review of all proposed courses by the district academic specialist,
4. review and approval of all proposed courses by key stakeholders such as local and state boards of education, and
5. ongoing monitoring of course content and student outcomes.

MCTEC will first identify a transition leadership team of CTE teachers, content teachers and district academic content specialists that will guide completion of the following activities leading to achievement of the project goals and objectives.

Plan of Work				
Goal: The goal of the MCTEC Innovation grant application is to prepare students for postsecondary education, develop a skilled workforce, certify graduating students as job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.				
Overall Objective: MCTEC will transition from a career and technical school to a technical high school.				
Phase One Objective: Provide two CTE programs of study during which students can also earn partial or complete academic credit for approved courses.				
PHASE ONE: 2010-2011				
Action Steps	Timeline	Person(s) Responsible*	Resources	Progress
1. A detailed review of academic standards and CTE course curriculum will be conducted to ensure there is a fit between academic and CTE content.	January/ February 2010	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed review of academic standards and CTE course curriculum
2. Curriculum mapping of each course for two selected program of study will be completed through the collaboration of the academic and CTE teachers	May/June 2010	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed maps of academic standards integrated with CTE course curriculum
3. Two proposed concentration programs of study will be reviewed and approved by district academic specialists for implementation during the 2010-2011 academic year. Initial programs of study for implementation will be determined by the greatest percent of academic and CTE content alignment as determined by Action Step 1	June 2010	Mercer County academic content specialists	Selection of two CTE concentration courses of study	Approval of two proposed CTE concentration courses of study by district academic specialists
4. Two proposed concentration courses of study will be reviewed and approved by the Mercer County Board of Education for implementation during the 2010-2011 academic year	July 2010	Mercer County Board of Education	Approval of two CTE courses of study	Approval of two CTE concentration courses of study by Mercer County Board of Education
5. Additional concentration programs of study will be approved and implemented for the 2011-2012 academic year	2010 – 2011 Academic year	MCTEC school administration, Mercer County content academic specialists and Mercer County Board of Education	Completed approval of additional CTE concentration programs of study	Approval of additional CTE concentration courses of study by Mercer County Board of Education
6. Monitoring of course content and student outcomes will be ongoing	August 2010 and ongoing	MCTEC school administration, Mercer County content academic specialists	Defined monitoring plan for course content and student outcomes	Completed monitoring student outcome reports

*All activities will be coordinated by MCTEC administration and transition leadership team

Plan of Work				
Goal: The goal of the MCTEC Innovation grant application is to prepare students for postsecondary education, develop a skilled workforce, certify graduating students as job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.				
Objective: MCTEC will transition from a career and technical school to a technical high school.				
Phase Two Objective: Provide CTE programs of study during which all students can also earn partial or complete academic credit for approved courses.				
PHASE TWO: 2011-2012				
Action Steps	Timeline	Person(s) Responsible*	Resources	Progress
1. A detailed review of academic standards and CTE course curriculum will be conducted for additional programs of study to ensure there is a fit between academic and CTE content.	January/ February 2011	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed review of academic standards and CTE course curriculum
2. Curriculum mapping of each course for selected program of study will be completed through the collaboration of the academic and CTE teachers	May/June 2011	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed maps of academic standards integrated with CTE course curriculum
3. All proposed concentration programs of study will be reviewed and approved by district academic specialists for implementation during the 2011-2012 academic year.	June 2011	Mercer County academic content specialists	CTE concentration programs of study	Approval of CTE concentration programs of study by district academic specialists
4. Proposed concentration courses of study will be reviewed and approved by the Mercer County Board of Education for implementation during the 2011-2012 academic year	July 2011	Mercer County Board of Education	Approval of CTE programs of study	Approval of CTE concentration programs of study by Mercer County Board of Education
5. Monitoring of course content and student outcomes will be ongoing	August 2010 and ongoing	MCTEC school administration, Mercer County content academic specialists	Defined monitoring plan for course content and student outcomes	Completed monitoring student outcome reports

*All activities will be coordinated by MCTEC administration and transition leadership team

Plan of Work				
Goal: The goal of the MCTEC Innovation grant application is to prepare students for postsecondary education, develop a skilled workforce, certify graduating students as job ready, decrease the district dropout rate, increase career and technical program retention rates, increase program completion rates of technical concentrations, and increase student performance.				
Objective: MCTEC will transition from a career and technical school to a technical high school. Phase Three Objective: CTE students will attend a technical high school for two or three complete years while they complete both CTE and academic requirements. Attendance length will be determined by the length of the CTE program of study. Academic requirements will be met through a combination of courses that award CTE and academic credit and additional academic courses as needed, including the use of virtual education as appropriate.				
PHASE THREE: 2012-2013				
Action Steps	Timeline	Person(s) Responsible*	Resources	Progress
1. Complete CTE and academic programs of study will be developed for all CTE programs of study.	January/ May 2012	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed review of academic standards and CTE course curriculum
2. Curriculum mapping of all programs of study will be completed through the collaboration of the academic and CTE teachers	May/June 2012	MCTEC and Mercer County high school content teachers	WV CSOs and CTE course curriculum	Completed maps of academic standards integrated with CTE course curriculum
3. All academic and CTE concentration programs of study will be reviewed and approved by district academic specialists for implementation during the 2011-2012 academic year.	June 2012	Mercer County academic content specialists	Academic and CTE concentration programs of study	Approval of academic and CTE concentration programs of study by district academic specialists
4. All academic and CTE concentration programs of study will be reviewed and approved by the Mercer County Board of Education for implementation during the 2012-2013 academic year	July 2012	Mercer County Board of Education	Approval of academic and CTE programs of study	Approval of academic and CTE concentration programs of study by Mercer County Board of Education
5. Development and approval of enrollment procedures and transportation of students to the technical high school	May/June 2012	MCTEC school administration, Mercer County Central Office	Enrollment and transportation plan	Approved enrollment and transportation plan
6. Monitoring of academic and CTE course content and student outcomes will be ongoing	August 2010 and ongoing	MCTEC school administration, Mercer County content academic specialists	Defined monitoring plan for course content and student outcomes	Completed monitoring student outcome reports

*All activities will be coordinated by MCTEC administration and transition leadership team

The transition of MCTEC from a career and technical center to designation as a technical high school as well as the development of courses that will allow students to receive academic credit and CTE credit will affect approximately 100 students the first year and will affect additional numbers of students as other CTE programs of study are developed and approved. The total number of affected students will reach 850 by 2012. The transition to a technical high school will affect the administration and teaching staff of MCTEC totaling 28 employees.

A variety and combination of options will be considered in order to ensure that CTE students complete and receive credit for academic course work. Developing CTE courses where students can also receive partial or full academic credit for completion of academic standards is one option. The development and the monitoring of these courses would have to be in concert with highly qualified teachers in the academic content area. A second option to be considered is employing a few content teachers at the technical high school so that enrolled students can complete academic requirements in the same building where they are completing CTE program requirements. A third option would be to use virtual education options to link CTE students at the technical high school to academic content classes being presented at another site.

Project Evaluation

As MCTEC transitions from a career and technical education center to a technical high school, four measures of evaluation will be utilized to measure program effectiveness.

1. The Mercer County 2009 dropout rate will decrease by 10% as measured by the 2011 Mercer County NCLB Report Card.
2. The 2009 CTE program retention rate for students will increase by 50% as measured by the 2011 CTE program retention rate.

3. The 2009 CTE program completion rate will increase by 50% as measured by the 2011 CTE program completion rate.
4. High school reading and mathematics scores will equal or exceed average State academic performance as measured by the 2011 WESTEST2 scores for reading and mathematics.

Leadership/Potential for Success

The leadership team of the Mercer County Technical Education Innovation Zone project has extensive experience in career and technical education. The school administration demonstrates the ability to plan and execute improvement plans as well as the ability to organize and meet deadlines for the action steps of the MCTEC Innovation Zone plan. Members of the leadership team have demonstrated abilities to manage major initiatives, including the supervision of previous education and career and technical education grants (see Appendix D for additional leadership team biographical information). The leadership team will both observe and learn from schools that have made the successful transition to technical high schools. Research in the field, as documented by Meeder & Hebert-Giffen (2009), has identified best practices in the development of CTE coursework that can receive academic content credit. In addition, CTE programs from across the nation will be reviewed to identify exemplary CTE/academic coursework to serve as models of the development of the MCTEC technical high school curriculum.

Scalability

Several states, including Washington, Kentucky, and New York have, with the support of local and state boards of education, have demonstrated success in developing coursework that receives both CTE and academic credit. These three states have been able to scale CTE

coursework statewide; having a dramatic effect on the number of students who have completed CTE programs of study while successfully completing high school content requirements. It is the hope of this project that developed coursework, based on West Virginia CTE programs and State content standards and objectives can be scaled statewide. Initial funding will facilitate the development of CTE coursework that can be implemented statewide without additional or continuing funding. This Innovation Zone grant has the potential to revolutionize teaching and learning for thousands of high school students across the state, while decreasing State dropout rates and preparing West Virginia students to be successful in the workplace of further study.

Sustainability

The transition of MCTEC from a technical education center to a technical high school will provide both an increased level of service to students and to the community. More enrolled students will have the opportunity to complete technical education programs and certifications by increasing attendance time at the school and less time traveling to and from the center. The innovation zone plan will benefit the community by increasing the number of certified and job ready students. Presently barriers exist between schools competing for student time and effort to complete graduation requirements at one school and technical programs completion at another. While the actual content standards required for graduation and program completion will be the same, students can achieve mastery of some academic requirements while also completing CTE courses. The increased cooperation and communication between present high schools and the technical education center will benefit student graduation and job readiness. It is recognized that communication with students, parents and the community will be necessary for program transition and improvement.

The MCTEC staff is dedicated to improving learning outcomes for students academically and professionally. Program data will be reviewed and analyzed each semester to ensure not only a culture of learning for the students, but also a culture of learning for the MCTEC staff as they seek to improve programs of study for the students. Annual results and data analysis will be used to drive program improvement to increase outcomes for students. While the MCTEC Director will serve as team leader for program change, a leadership team made up of students, teachers, administration and the community will accept and provide leadership to create a continuous climate of improved student learning and school performance.

Research Base

Research has shown that students who complete a CTE concentration have better employment opportunities and earning outcomes. Boesel, Hudson, Deich & Masten (1994) reported that high school students who complete a concentration in a career and technical field of study have better employment and earnings outcomes than students who complete fewer than two credits in a single career and technical field. They also found that career and technical graduates who obtain jobs in their area of study outperform their peers who are employed in areas out of their field of study.

CTE programs of study have been shown to reduce dropout rates and increase graduation rates. Kulik (1998) found that high-risk students were as much as 10 times less likely to drop out in the 11th or 12th grade if they enrolled in a career and technical education program. Quality CTE programs can reduce a school's dropout rate by as much as six percent. In addition, CTE students are less likely than regular program students to fail a course or be absent from school.

According to a 2000 Southern Regional Education Board (SREB) report, High School That Work Assessment Report, students who study rigorous integrated academic and CTE

content in their CTE concentration courses achieve at a higher level than students who do not have these academic experiences (Educational Testing Service, 2000). The report emphasized the importance of completing assignments that require students to read, write and do mathematics. Higher achieving students use mathematics, read technical manuals and books and use computers daily or weekly in completing CTE course requirements.

The Association for Career and Technical Education (Meeder & Hebert-Giffen, 2009) reports that career and technical education (CTE) coursework has been overlooked in the national effort to prepare students for postsecondary education and workforce success. Central to the transition of career and technical centers of education to technical high schools and meeting the college and career readiness challenge is the recognition of academic credit for CTE coursework. According to Achieve, Inc. (2008), 20 states (Alabama, Arizona, Arkansas, Delaware, Georgia, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, New Mexico, New York, North Carolina, Ohio, Oklahoma, South Dakota, Tennessee, Texas and Washington) and the District of Columbia have raised their course requirements to the level of college and career awareness defined by Achieve. In addition, a total of 34 states are participating in the American Diploma Project.

As steps are being taken to require students to take more and higher levels of academic courses to improve their performance in the areas of college and work readiness, a balance must be achieved by ensuring that instruction is both relevant and real-world (Meeder & Hebert-Giffen, 2009). Increasing graduation requirements without seeking new engaging forms of teaching and learning may have a negative effect in two ways. First, already struggling students may feel the need to drop out. Secondly, as graduation requirements increase, fewer and fewer slots are available for elective courses, often ones that students find more engaging, such as CTE

programs of study.

While there are many factors that cause students to disengage, a 2005 report by Bill and Melinda Gates found that the decision to drop out was not a sudden act, but was a gradual process of disengagement. The study found that 47 percent of students reported that classes were not interesting and that this was a factor driving their reason to drop out of school. An overwhelming 81 percent of dropouts in the study reported that opportunities for relevant learning and being able to see the connection between attending school and getting a job may have encouraged them to stay in school.

Many California high school students are enrolling in New Tech High Schools. According to an Austin Independent School District (AISD) Report (2009), New Tech High Schools are graduating students that are both college and career ready. These students master an integrated academic and CTE curriculum, anchored in problem-based learning experiences. New Tech High Schools also boast a 1:1 student to computer ratio. These students achieved some of the highest gains among California districts and improved truancy rates.

Meeder & Hebert-Giffen (2009) report that “when academic and CTE content is presented in an integrated model, students are able to identify the real-world applicability of academic concepts” (p.2). While the Carl D. Perkins Vocational and Technical Act of 1998 and the Carl D. Perkins Career and Technical Act of 2006 placed an emphasis on the integration of academic and CTE content, the statutes themselves were not prescriptive on how this should be accomplished. The 2006 Perkins Act stated called for the development of plans and services that “integrate rigorous and challenging academic and career and technical instruction.” Plans for Perkins funding must show how they will “improve the academic and technical skills of students...through the integration of coherent and rigorous content aligned with challenging

academic standards and relevant career and technical education programs...”

Research studies report positive results for the integration of academic and CTE content. The Lane ESD is currently in its third year of a nationwide Math-In-CTE Technical Assistance Program, developed by the National Research Center for Career and Technical Education (NRCCTE) at the University of Minnesota, in consultation with the US Department of Education Office of Vocational and Adult Education (Math-IN-CTE, 2009). The Math-In-CTE program pairs a career and technical teacher with a high school math teacher to explicitly teach and reinforce mathematics concepts. The national initiative involved over 200 teacher and 4,000 students in 12 states. Results showed that students raised achievement /by 14% on two national standardized tests of mathematics.

Another approach, selected for use through this grant application, is to intentionally build additional content and applications of academic learning (literacy, mathematics, science, communication, and technology) into CTE coursework by auditing current CTE coursework and supplementing state standards in the CTE setting. Other approaches to integration focus on the use of problem –based learning experiences that link and align subject matter across content areas and CTE coursework.

One area that must be addressed in the development of the MCTEC program curriculum is the recognition of academic credit for CTE coursework. According to Meeder & Hebert-Giffen (2009), 82% of states currently have either a state policy or local allowance for the awarding of academic credit for CTE coursework. It is noted that West Virginia did not respond to the ACTE survey. In 36 percent of the states responding to the survey, academic credit is a state-driven recognition process. In another 39% of states, state policy allows for local control in the awarding of academic credit. In a remaining 25 percent of states, there is no state

involvement in the awarding of credit and policies are locally driven.

Warren Tech high School in Jefferson County, Colorado, developed integrated courses that count for academic and CTE credit (Meeder & Hebert-Giffen, 2009). Every CTE course must follow a course outline that reflects the specific units of instruction in order to meet academic content standards. Assessments measure both core academic learning as well as CTE content. District academic specialists review course and validate academic content alignment. Course materials are approved by the district content curriculum coordinator in each affected content area. The curriculum is then reviewed by the chief academic officer. One challenge for the Warren Tech program was to ensure that other high schools were willing to accept the academic credit awarded by Warren Tech. Table 5 reflects the 2008 programs that counted for either partial or full academic credit on the student’s high school transcript, not just for elective credit (see Table 5).

Table 5. Warren Tech Courses Recognized for Academic Credit

Warren Tech Courses Recognized for Academic Credit	
CTE Course	Full or Partial Academic Credit Awarded
Auto Body	Principles of Chemistry & Physics
Auto Technology	Algebra
Biotechnology	Molecular Biology, Genetics, Microbiology
CAD/Drafting	Geometry Principles
Computer Technology/Video Game Design	Computer Science Mathematics
Cosmetology (Esthetics, Hairstyling & Nail Tech)	Anatomy (with lab)
Dental Assisting	Anatomy (with lab)
Fire Science	PE and Science (pending)
Graphics Design	Language Arts
Health Sciences Technology	Anatomy, Physiology, English/Language Arts
Horticulture/Floral Design	Plant and Soil Science
Hospitality/Event Planning	Language Arts
Landscape Operations	Science
Multimedia	Language Arts
Power Equipment & Motorcycle Technology	Physics
Precision Machining Technology	Mathematics

A second challenge faced by the Warren Tech program was the highly qualified teacher requirements of the NCLB federal law. In order to address the issue, instructional coaches who are qualified in the specific content areas monitor delivery and are the academic teacher of record for the CTE courses that award academic credit. In 2009, 23 programs of CTE study have been approved for academic credits and it is currently possible for students to earn up to three academic credits in one or more content areas through the completion of CTE coursework.

In 2007, the Washington state legislature required high schools or local school districts to develop procedures for approving CTE coursework that would award academic credit. The legislature established a CTE advisory committee to assist local entities in implementation. Seven hundred CTE courses throughout the state have been approved for the awarding of academic credit upon completion. In the state of New York, it is estimated that of the 900 approved CTE programs, two-thirds offer at least one integrated course that awards both CTE and academic credit upon completion.

Kentucky follows a systematic process for developing interdisciplinary courses that award both CTE and academic credit (Meeder & Hebert-Giffen, 2009).

- Program consultants review course content and assessments to ensure a solid fit exists between the CTE and academic content.
- Academic and CTE teachers partner in curriculum mapping and both discipline teacher must agree that the proposed course meets high quality standards.
- All proposed course are sent to the State Board of Education for approval.
- Once approved by the State Board, the course is entered into the programs of study.
- Local schools then have the option to use the course after approval by the site-based

decision-making council.

- The local school board must submit a letter to the State Department of Education verifying that the course will be offered for both CTE and academic credit.

Kentucky addresses the highly qualified issue in one of three ways. CTE teachers may pursue dual certification. Academic teachers and CTE teachers may collaborate in the teaching of the course. The academic teacher may also serve as an advisor to the CTE teacher. A third option is using virtual teaching from a master teacher via a DVD.

After extensive study of CTE and academic course development, Meeder & Hebert-Giffen (2009) recommend a systemic process for course approval:

1. a detailed review of academic standards and course curriculum to ensure there is a fit between academic and CTE content,
2. curriculum mapping of each course conducted through the collaboration of the academic and CTE teachers,
3. review of all proposed courses by the district academic specialist,
4. review and approval of all proposed courses by key stakeholders such as local and state boards of education, and
5. ongoing monitoring of course content and student outcomes.

D: POLICIES OR CODE THAT PROHIBIT OR CONSTRAIN THE DESIGN

- X Waiver Requested of County Policy:
Mercer County Board Policy I-02, Secondary School Attendance and Graduation Requirements
Constraint: County policy requires completion specific credits for high school graduation. Students competing high school graduation requirements and CTE program requirements have difficulty completing separate graduation and CTE program requirements.
Relief Sought: After a complete review of content standards and objectives for CTE and academic courses, MCTEC will review Mercer County high school graduation requirements and may request specific technical high school graduation requirements for enrolled students.
- X Waiver Requested of WVBOE Policy or Regulation:
West Virginia Board of Education Policy 2520.1, *21st Century Reading and English Language Arts Content Standards and Objectives for West Virginia Schools*
West Virginia Board of Education Policy 2520.2, *21st Century Mathematics Content Standards and Objectives for West Virginia Schools*
West Virginia Board of Education Policy 2520.35, *21st Century Science 9-12 Content Standards and Objectives for West Virginia Schools*
West Virginia Board of Education Policy 2520.04, *21st Century Social Studies Content Standards and Objectives for West Virginia Schools*
Constraint: State Board policy requires specific course content standards and objectives (CSPs) required for the awarding of credit. Students enrolled in CTE courses are mastering many of the same standards and objectives through the completion of CTE courses.
Relief Sought: Mercer County will first audit CTE courses and high school academic courses for overlap of CSOs and then revise or develop specific CTE courses that lead to student mastery of a CTE credit and the awarding of a partial or complete academic credit. It is recognized that such courses must be developed with the cooperation of and then monitored by core high school teachers so that academic credit is awarded by highly qualified teachers.

 Waiver Requested of Statute

 NA (No Waiver Requested)

E: PLANNING NARRATIVE AND BUDGET

2010-2011 Budget

MCTEC Innovation Zone Grant Proposed Budget Cost Objective	Amount Requested
A. Leadership Team Stipends	\$3,000
B. Fringe Benefits	\$600
Leadership Team Planning Costs	\$3,600
A. Course Development Salaries	
1. CTE Staff Summer Stipends	\$20,000
2. High School Teacher Summer Stipends	\$16,000
B. Fringe Benefits	\$7,200
Sub-Total Course Development Costs	\$43,200
A. Travel	\$2,500
B. Books and Materials	\$700
Sub-Total Travel/Materials	\$3,200
TOTAL PROJECT COSTS	\$50,000

2010-2011 Budget Narrative

Item	Amount	Description
Leadership Team Planning Costs		
Leadership Team Stipends	\$3,000	Five leadership team members @ \$200 per day to attend three selected days of project planning for a total of \$3,000
Fringe Benefits	\$600	Fringe benefit costs for 3,000 at 20% = \$600
Course Development Costs		
CTE Staff Stipends	\$20,000	10 CTE staff members will work 10 days @ \$200 per day = \$20,000
High School Content Teacher Stipends	\$16,000	8 high school content teachers will work 10 days @ \$200 per day = \$16,000
Fringe Benefits	\$7,200	Fringe benefit costs for \$36,000 at 20% = \$7,200
Travel /Materials		
Travel	\$2,500	Leadership team travel costs for a 2- day visit to observe an exemplary technical high school program at \$500 per person
Book and Materials	\$700	CTE and academic content books, printing and materials for course development
Total	\$50,000	

F: SUPPORTING DOCUMENTS

Appendix A: Record of Staff Commitment

Appendix B: LEA Report of Support or Concerns

Appendix C: Evidence of Support

Appendix D: Leadership/Management

Appendix A:
Record of Staff Commitment

Document in the mail with signatures

Appendix B:
LEA Report of Support or Concerns

Document in the mail with signatures

Appendix C:
Evidence of Support

Document in the mail with signatures

Appendix D: Leadership/Management

Linda Cox Biographical Statement

Linda Cox is presently employed serving as Interim Director of Technical and Adult Education and Facilitator, Service to Business and Industry for Mercer County Schools. She is responsible for the organization and operation of Mercer County Technical Education as well as the Education Business Industry Seminar Center, which provides seminars and workshops representing a broad range of subjects and consulting services to business and industry.

Her educational background includes an Ed. S. Degree in Technical and Adult Education from Marshall University in Adult and Technology Education, M.A. Degree from West Virginia University, and B.S. Degree in Business Education from Concord University. Linda has served as a Certified Site Evaluator for the International Association for Continuing Education and Training. In addition, Linda is a Certified Lifestyle Counselor, member of ACTE, NBEA, and serves on numerous local and state boards. An outstanding opportunity for growth for Linda was the opportunity to serve as a vocational ambassador to China in 1987.

Linda is very active in the community serving as President of the Princeton Mercer County Chamber of Commerce and past president of the Bluefield Rotary Club. In addition, Linda has developed and directed for Mercer County Schools the WomenTech Engineering Academy and the Future Billionaires Academy. In addition, Linda has written, received, and directed numerous state grants. Through the years, grants awarded have included Equity, Tech Prep, Governors, School-to-Work, Program Modernization, and Learn and Serve Grants. In addition, she annually prepares the Local Education Plan for Technical and Adult Education.

Carol McClagherty Biographical Statement

As a teacher at Athens High School, Carol McClagherty wrote, received and carried out a WVDE grant called "Teachers Teaching Teachers" in collaboration with Concord College. The Teachers Teaching Teachers program was a pre-service, beginning teacher and in-service teacher mentoring and staff development project. McClagherty currently serves as the School-To-Work Coordinator (Career Connections) for Mercer County Schools for 13 years;

After assuming the School-To-Work Coordinator position, McClagherty became responsible for administering the UROG School-To-Work (STW) grant, receiving over \$300,000 in funding. Carol is responsible for implementing and carrying through each goal and objective of the original grant. In addition, she has applied for and obtained WVDE STW funding in the amount of \$60,000 to support the STW grant.

Mercer County is one of nine sites in the nation to receive Advanced Work-Based funding from the feds-wrote grant, carried out goals and objectives with funding of \$75,000. In

addition, McClaugherty has leveraged and systematized local annual funding and community and internal support for Experiential Learning and Career Connections after the sunset of federal and state monies.

G: REFERENCES

- Achieve, Inc. (2008, February). Closing the expectations gap 2008. *Achieve, Inc.* Washington, DC: Achieve, Inc.
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- Educational Testing Service. (2000). *High schools that work assessment report, 2000*. Special report prepared for the Southern regional Education Board. Princeton, NJ: ETS
- Kulik, J. (1998) *Curriculum tracks and high school vocational studies*. University of Michigan
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Certification
School/Schools Staff Commitment
Department/Departments/Subdivision/Subdivisions
Staff Commitment

Use this form to report the staff commitment regarding the innovation application and plan. A copy must be forwarded to the Innovation Zone Committee with the application and the plan.

School: Mercer County Technical Education Center
Department (If Applicable):
Notice of Meeting (Date Provided to Faculty or Department/Subdivision): Nov. 23, 2009
Meeting Date: DEC. 7, 2009

Faculty Senate Elected Officers:

President: (Name) <u>Gwendolyn Miller</u>	Signature: <u>Gwendolyn Miller</u>
Vice-President: (Name) <u>Ron Thremsburg</u>	Signature: _____
Secretary: (Name) <u>Anna Marie Fuda</u>	Signature: <u>Anna Marie Fuda</u>
Treasurer: (Name) <u>Mitzi Turner</u>	Signature: <u>Mitzi Turner</u>
Other: (Name) _____	Signature: _____

Service Personnel Representative:

Name: <u>Sandra Jean Belcher</u>	Signature: <u>Sandra Jean Belcher</u>
Position: <u>Secretary</u>	

Parent Representatives:

Name: <u>Donna Pennington</u>	Signature: <u>Donna Pennington</u>
Name: <u>Wayne Stone Street</u>	Signature: <u>see attached page</u>
Name: <u>Donna Standifur</u>	Signature: <u>Donna Standifur</u>

We certify that 80 percent of the faculty affected by the application/plan has voted to support the application/plan.

(This report certification is not required of institutions of higher education in their application or plan).

Certification
School/Schools Staff Commitment
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Treasurer: (Name) <u>Mitzi Turner</u>	Signature: <u>Mitzi Turner</u>
Other: (Name) _____	Signature: _____

Service Personnel Representative:

Name: Sandra Jean Belcher Signature: Sandra Jean Belcher
Position: Secretary

Parent Representatives:

Name: Wayne Stonestreet Signature: Wayne Stonestreet
Name: _____ Signature: _____
Name: _____ Signature: _____

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