

Eastern Kentucky University

Encompass

Online Theses and Dissertations

Student Scholarship

January 2022

Community Development Through Career And Technical Education In The U.S. Education System For A Higher American Standard Of Living

Marty Stuart Asbridge
Eastern Kentucky University

Follow this and additional works at: <https://encompass.eku.edu/etd>



Part of the [Education Policy Commons](#), and the [Vocational Education Commons](#)

Recommended Citation

Asbridge, Marty Stuart, "Community Development Through Career And Technical Education In The U.S. Education System For A Higher American Standard Of Living" (2022). *Online Theses and Dissertations*. 682.

<https://encompass.eku.edu/etd/682>

This Open Access Thesis is brought to you for free and open access by the Student Scholarship at Encompass. It has been accepted for inclusion in Online Theses and Dissertations by an authorized administrator of Encompass. For more information, please contact Linda.Sizemore@eku.edu.

COMMUNITY AND LEADERSHIP DEVELOPMENT IN THE U.S. EDUCATION SYSTEM FOR A
HIGHER AMERICAN STANDARD OF LIVING

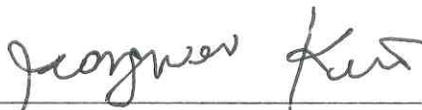
BY

MARTY STUART ASBRIDGE

THESIS APPROVED:



Chair, Advisory Committee



Member, Advisory Committee



Member, Advisory Committee

Member, Advisory Committee



Dean, Graduate School

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for degree conferral at Eastern Kentucky University, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from the documents are allowable without special permission, provided that accurate acknowledgments of the source is made. Permission for extensive quotation from or reproduction of this document may be granted by my major professor in [his/her] absence, by the Head of Interlibrary Services when, in the opinion of either, the proposed use of the material is for scholarly purposes. Any copying or use of the material in this document for financial gain shall not be allowed without written permission.

Signature:

X A handwritten signature in black ink, appearing to read "Matty Askins", is written over a horizontal line. The signature is cursive and stylized.

Date: 11-10-22

COMMUNITY DEVELOPMENT THROUGH CAREER AND TECHNICAL EDUCATION IN THE
U.S. EDUCATION SYSTEM FOR A HIGHER AMERICAN STANDARD OF LIVING

BY

MARTY STUART ASBRIDGE

Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

2022

© Copyright by MARTY STUART ASBRIDGE 2022
All Rights Reserved.

DEDICATION

I would like to dedicate this thesis to Zack Alexander and Heather Northcutt, for the evenings full of laughter, and a hearth full of excellent conversations as I worked through this chapter in life. The mornings of great cups of coffee, and infinite snacks, along with your genuine friendship and love, anchored me. Thank you.

ABSTRACT

The evolution of the public education system to include more career and life readiness skills should be a central matter of focus to education policymakers across the United States by improving the planning, implementation, and evaluation of Career and Technical Education programs. This is because improving the societal standard of living relies on proper Community Development, through the framework of developing the potential quality of America's most vital human capital, its students entering the workforce. In its current state Career and Technical Education is an important but underdeveloped program set to accomplish building student skills in work ethics and administrative skills, without the focus and resources to accomplish these well for the majority of students. Community and Leadership Development in students through the evaluation of the federal Career and Technical Education legislation, the Perkins V and its renditions, and the logic models of those programs that are highly successful, reveal a crucial need to improve programs throughout all of the U.S. public education system.

The data from the logic models of 9 award winning school CTE programs showed commonalities that less successful programs could strive for to have better results, and improving the potential of their students community development. This project evaluated the Perkins V legislation and found that the replication of high quality logic models of the programs at award winning schools and the increase in technology and data infrastructure metrics to study for better evaluation would best serve American students and increase the potential for success in the nation's rapidly transforming economy.

TABLE OF CONTENTS

CHAPTER	PAGE
[I. Introduction]	1
[Career and Technical Education as a Community Development Solution].....	1
[II. Research]	4
[The Definitions, History, and Challenges of Career and Technical Education and Community Development]	4
[III. Design].....	17
[IV. Data Collection].....	20
[Government Recommendations and 2017-2019 Award Winning Logic Model Data].	20
[V. Analysis]	23
[The Commonalities of Winning Career and Technical Education Programs]	23
[VI. Results].....	27
[VII. Conclusion].....	31
[Conclusion, Counterarguments, and Final Recommendations].....	31
References	35
Appendix A.....	39

LIST OF TABLES

TABLE	PAGE
Table 1 Career and Technical Education 2017-2019 Program Data	57

[I. Introduction]

Career and Technical Education as a Community Development Solution

In the United States, the question of whether or not the Public Education System was serving the needs of students was of constant debate, but with the proper implementation and investment in Career and Technical Education in all public schools, students will gain the skills needed to navigate the modern workforce with ease. Career and Technical Education teaches students work related and administrative skills through courses, networking in the form of mentorships and internships, as well as financial, career, and community building skills that regular public education does not usually have the resources to accomplish. Often the lack of education has been blamed because of the limited resources of funding, competency, and corruption, and CTE has suffered because of this as well. Young people are graduating with degrees but without adequate life skills, according to businesses hiring that report a lack of practical experience on the job (Ed.gov 2019).

Community and Leadership Development in the form of Career and Technical education are taught in public school institutions, developing young minds, building them up, and teaching them to be great members of society, but somehow these students are not as career ready as they should be for the environment they are entering. This means that the need for this skill gap to be closed is high, and it is the obligation of policy makers and education systems across the country to counter this

challenge by providing students more of the skill development needed to prosper in the job market.

In response to the staffing and resources challenges for the American education system the Biden-Harris Administration was prompted to strengthen the teaching profession through focusing on the filling of vacancies and improvement of salaries, due to the working environment that teachers are under on a daily basis (Ed.gov 2022). This knowledge of the current realities facing a large portion of the education system indicates that while most schools are able to accomplish enough teaching to complete the required curriculum of subjects that students must be tested on, such as Mathematics and English, it may be difficult to be creative and for education systems to grow and evolve to innovative solutions needed to better prepare American students for society and the workplace. According to the federal government, the plan would increase staff by 54% in regard to social workers and 22% of school counselors. Teachers make 33% less than other college educated professionals, so this would be a great start, but it would not be enough (Ed.gov 2022).

Therefore the research into whether or not the Public Education System is implementing Career and Technical Education well enough, and how it could be improved, is of utmost importance to finding solutions to societal challenges. This thesis contributed to existing literature, which also supports this reality of improvements needed with CTE in public schools, by analyzing the Career and Technical Education logic models and reported data of school and government sources, and critiquing the structure and implementation of important CTE

programming by comparing the logic models to the results of award winning schools and making logic model recommendations to those school districts that did not win over the course of 3 years studied.

[II. Research]

The Definitions, History, and Challenges of Career and Technical Education and Community Development

An important step to the program evaluation of Career and Technical Education is reviewing the literature around it. Because Career and Technical Education comes in many forms, an example of a common logic model has been provided below in Figure 1 for observation. To begin, Career and Education will be defined according to the 2014 federal government's National Assessment of Career and Technical Education Evaluation's report of definitions, that the legislation that brings CTE into existence, the series of *Perkins* laws, does not identify specific subjects or fields that are exactly CTE, but instead the grantees design and implement their own CTE courses and processes through the usage of the Perkins Funding (Ed.gov 2014).

At the secondary level of CTE, that is high school, the U.S. Department of Education defines Career and Technical Education as either occupation-based CTE, which is coursework designed to prepare students for the workforce in a specific field, or non-occupational CTE is coursework that prepares students for roles outside the labor market in generic employment skills such as basic computer literacy and introduction to technology (Ed.gov 2014). As these are directly the way that the government is defining Career and Technical education, it is what will be utilized throughout the course of the project. It is important to understand exactly what this definition of CTE indicates. At the secondary level, this definition defines CTE as work that either prepares students for their respective workplaces by focusing on skills

needed specifically in those rolls, or focuses on generic employability skills such as technology literacy in order to best prepare students for the workforce in ways that the regular public education curriculum is not always able to.

One of the reasons that CTE exists in its modern form and continues to evolve for modern needs is because the Perkins legislation was made originally in order to respond to the needs of the time, mainly industry and agriculture in 1917, but today it evolves into more advanced education, technology, and skill training certifications (Ed.gov 2014). Therefore for conciseness, Career readiness is defined as having successfully obtained skills related to the workplace, job certifications, and higher education achieved. CTE programs are intended to achieve that by using a proper logic model that predicts and guides the programming through the usage of Perkins funding toward concrete and accountable outcomes, meaning raising the percentiles of those students served who are actually achieving the skills, knowledge, and credentials the program claims. The policy-logic model for Career and Education, which will be extensively discussed from multiple high quality programs, makes it to where the policy works by creating step by step processes and expectations so that knowledge, skills, and credentials are actually earned. CTE programs will be evaluated by their ability to reasonably achieve the goals set in their logic models, and their results.

The History of Career and Technical Education Legislation

The need for better forms of education in the United States led legislators to begin developing what is now known as the Smith-Hughes Act of 1917. In contrast to

the technological needs of the 21st century, when the Smith-Hughes Act was brought into legislation much of the focus was on agriculture and industry. The next form of vocational education legislation came in the form of the Vocational Act of 1973, which helped schools develop work-based programming and create part-time employment for the youth (Cte.ed.gov 2022). When the First Carl D. Perkins Vocational Education Act came in 1984, there was more corporate and office style skills that were developed (Cte.ed.gov 2022). With Perkins II in 1990, also known as the Carl D. Perkins Vocational and Applied Technology Education Act of 1990, much of it was focused on creating equity programs based off of identity, with competitive awards of funding through the evaluation of programs. This included funding for programs for adults such as single parents, pregnant women, and criminal offenders for societal reformation (Cte.ed.gov 2022).

With Perkins III of 1998, there were amendments which were meant to develop challenging academic standards by building on the efforts of both the localities and states, and to promote flexibility in the programming and develop services in the programming that integrate all academic, vocational, and technical instruction (Cte.ed.gov 2022). Perkins IV, the most evaluated and from which the majority of data in this project was based off of due to its fullness in evaluation, was released in 2006 and focused on efforts to help students meet the challenging standards of the CTE program, including quite importantly preparation for high skill, high wage, and high demand styles of careers that were becoming more prevalent in modern society (Cte.ed.gov 2022). Educators and policymakers at this stage understood that

globalization was going to require students and all citizens to be able to operate at high skill, and high demand roles, increasing the rigor of programs, which also meant increasing leadership and expectations for great results at every level. This standard was set so that individuals participating could develop throughout their entire lifetime based off of skills gained from the base level of Career and Technical Education.

In 2018, Donald Trump signed into legislation Perkins V, which boosted Career and Technical Education funding to \$1.3 Billion, which was significantly more than past years, to improve the public education teaching of community, career, and technical skills to increase student career and college readiness. This legislation was an improvement from the numerous other Perkins bills the U.S. Federal government had utilized over many decades to aid the public education system in its tasks, and while unregulated, the Federal government offered suggestions according to their data for states to utilize so as to focus certain criteria to respond to the needs of the public and private workforce sectors. In the 2018 report from the Committee on Health, Education, Labor, and Pensions, the committee suggests that the purpose for the Perkins V Act is to allow more students to attain the education and skills required to succeed in high skill occupations and the intent of the Act was to make improvements to the program accountability to ensure program quality and student success (Congress.gov 2018).

The history and most recent legislation indicates a governmental awareness of the needs to improve and have accountability for high standard Career and Technical Education programs for the purpose of boosting the needs of the American workforce,

and improve the quality of life for many Americans across the nation. Under the Perkins laws nearly 8 million students participate in CTE across all schools, but there still remains a large skill gap in the workforce, with more job vacancies than skilled Americans to fill them (Cte.ed.gov 2022). With 1.1 million vacant healthcare jobs and not enough administrators of data and recordkeeping to upkeep the new regulations on healthcare, the need for more computer and administrative skills in health workers has only increased. Therefore throughout this project 'Career Development' would be referred to as 'Community Development' because of the need for more focus on connecting business and public with schools for improved structure. 'Leadership Development' will be referred to as the 'technical' skills taught and honed in order to develop a better and more effective workforce, as these skills, self-worth, and competency fall in line with leadership development.

While the vision of the Perkins V legislation to increase student skills significantly and improve accountability for those statistics exists, the public education system is borderline not implementing Career and Technical Education when it comes to computer science and workplace usage in as an effective way as the legislation intended. This is because of the fact that program success is in part due to the perception of the school district and states, and not necessarily based off of numerical standards that must be met. However, due to this perception of success, it is still very

important to analyze the structures and processes in place in order to begin developing an expectation of what success would look like.

The U.S. education system is one of the best in the world, but it, like most of the world, has dramatically developed over the last one hundred years. In the U.S. alone schools went from one room school houses, to universal, required, public education. The impact of education or career development funding directly has dramatic effects on American Families' economic and general well-being. But without explicit processes and logic models to reach the desires of accountability through numerical proof of success, it is difficult to gauge how successful and impactful a program is.

The Challenges of Career and Technical Education Evaluation and Implementation

Does Career and Technical Education for high school students increase their success in the U.S.? Would a Federal Career Development Program in the U.S. Education System work as the foundation to a Higher American Standard of Living? If taught the right skills, in theory, impoverished citizens could break the cycle of poverty in the United States. With 16% of overall American youth living in poverty, children are doing so unnecessarily if the adults in the workforce have the right skills to make it out and compete in the global market (Aecf.org 2021). With the current state of American education on open display for scrutiny it is well worth utilizing an analytic technique such as program evaluation through the consideration of the data and logic models available. The successes and failures of current career and technical development

programs in the education systems of states, and those programs for adults, of both government and non-profit agencies, could also be considered. For the purpose of this project, the overall failures of CTE programming, and successful high school CTE programs was the focus.

To begin with the important overall data, the problems still plaguing this program include the challenges of federalism in the United States, meaning that when it comes to U.S. Education Policy, the states generally control education curriculum and structure with the aid of the federal government. The federal government can offer CTE tips and rubrics, such as the current suggestion to focus on innovation rather than compliance for a district's CTE program. For CTE, the Perkins funding comes with non-regulatory rules, but with the suggestion that schools focus on modernizing processes and aligning the skills taught with business needs (Cte.ed.gov 2022).

This separation of powers is intentional, and a great checks and balance, but because of this separation of responsibilities, there are inefficiencies that can creep in, due to the fact that while accountability is being worked on to increase program success, the power for success ultimately depends on the states applying funding to localities and their implementation according to the political agreements between the many levels of government and authority. This is not to say necessarily that the federal government would be more effective, but it does mean that it is difficult to pinpoint numerical success when the United States, and school district resources are relatively

limited and differentiate, even though the \$1.3 billion dollars is federally allotted toward pushing the program.

Other legislation crosses over the Perkins legislation at times in the attempt to leverage more success, such as The Every Student Succeeds Act, which is legislation from President Obama's administration in 2015. The ESSA aids in the improvement of CTE as well by holistically pushing to reduce dropouts, increase graduation, and increase the amount of students attending college by setting standards that CTE programming might not be able to reach (Ed.gov 2022). Basically, the multiple forms of policy help the federal government reach its goals better by having more than one set of similar suggestions for regulation working at the same time. Though the federal government offers the outlines for CTE programs, the State has to decide its own success. The ultimate problem with the states holding this power, despite the fact that the rubrics are quite detailed on how to measure a CTE program's success, is that according to the government's statistics, one fourth of all high schools do not offer CTE or CTE styled courses at all (Cte.ed.gov 2022).

With the importance of CTE being on display through the decades of Perkins legislation, and the need for Americans to rise to the challenge of global competition, it is an absolute shame for there to be at least 25% of all U.S. public high schools, while they may have a basic format for CTE Development, not actually giving students experiences such as is needed for their success in the market they are entering. This data outcome of one fourth of schools obtaining federal funding but without the most basic of technological, agricultural or business knowledge, financial skills, or data

administration that are needed to develop these workforce skills that will lead to better jobs indicates major issues somewhere along the pathway to success (Cte.ed.gov 2022). Other schools may only offer one or two courses, with this legislation and programming well known in the education system.

One of the most important skills for citizens to learn for better employability over the next few decades will be technological literacy, according to the Department of Education's view on the needs of Career and Technical Education. When it comes to the usage of and literacy of technology for these skills to be gained in 2021 it was reported that 45% of schools have 1 computer per student, and 39% of students' use of computers were in a specific classroom, so not even on a daily basis (Nces.ed.gov 2021). The same study revealed that 43% reported there was not enough time for teachers to become skilled with technology and rated this as a moderate challenge, while another 22% claimed this was a large challenge. If this was the case and true, then regular public education curriculum and CTE programs are not being implemented as strongly as they should be, regardless of Federal, State, or Local powers. This means that while working together, the government and school system is not reaching its most basic of universal goals, developed over the past one hundred years. This is because if there was not enough time and resources to teach adequately then schools need better programs through more professionals on site daily, updates to education technology and connections to CTE, and then improved CTE implementation by developing the curriculum to fit the school day and be hand in hand with the regular curriculum (Nces.ed.gov 2021).

Community Development and Career and Technical Education

The evaluation of Career and Technical Education and improvement of it is important because due to its failures as one of the most vital factors of Community Development in the United States, the untapped potential of human capital is actually hurting the current and future of society. But what does Community Development look like with Career and Technical Education?

With nearly six million American adults unemployed that could be working, even with employment up in 2022, that is six million of adults of potential that should be considered when considering the state of and needs of the American workforce (BLS.gov 2022). When each year around 4 million students graduate from high school, that is four million students that should be able to work, study, and prosper financially in the United States (NCES.gov 2018). For cost efficiency localities are pushing the improvement of the implementation of Career and Technical Education by using Individual Learning Plans both at schools and in the workplaces as a recommendation for students and administrators to maintain student networking, and well trained workers by building those close community connections between the education system and local businesses. Individual Learning Plans can come in many forms, but usually it is an agreed upon plan of study and networking so as to best prepare a student for workplace and community networking. As schools need to not only teach skills, but build the love of the hometown for small local government growth and general community development, this is one of the ways it can be achieved be it in the

form of an agenda/milestone book. The Figures of 1 and 2, with the Kentucky Individual Learning Plan as an example may be found in Appendix A.

For example, according to the Individual Learning Plan Self-Implementation Rubric of the State of Kentucky, each school must develop through the local board of education processes of evaluation and resources from the district in order to make that happen, adhering to strict quality policies with all members of the education community including parents aware of and utilizing the policies to track and guide the progress of each student (Education.ky.gov 2018).

The quality of the ILPs and the program implemented is then evaluated by scores of one through four, with four as the highest, as defined by board and locality discretion the meaningfulness of the growth and feedback applied. Arguably this is the most democratic way for Individual Learning Plans, CTE, and Community Development to occur between parents and schools, but the discretion is also the space for scrutiny. In reference to the other states and their career development programs, the problem is 'success' and 'failure' statistics are not always published or scrutinized because the criteria is in many ways up to the states as long as they follow a similarly measureable rubric (Coalition For Career Development Center 2022). As is discussed in the Performance Ratings in the Figure, the Board of Education is the group with the authority and responsibility to adopt policies to guide students along potential academic and career based pathways, meaning that every Board of Education for school districts will have it up to them to interpret and manage whether or not this

important aspect of Career and Technical Education is properly resulting in the outcomes desired.

In another section of the Rubric, displayed by Figure 2 in Appendix A, it connects the requirements for Student performance to be enhanced by having advisory groups and ILPs, with regular revisions throughout the year with parents/guardians, the students, and education staff all working together for the ensured success of each individual student. This is very important for Community Development because this rubric states that the success of the student means that the members of the community and all stakeholders must work together in order to define and create the outcome of success, which saves money and time on the administrative side by putting some accountability in the hands of the student and parents as well to facilitate the needs and goals of the student's interests. It also incorporates businesses and local groups, potentially even nonprofits, etc. to build bridges and help shape what the locality needs, according to the suggestions for success made by the government (Education.ky.gov 2020).

With Kentucky, still being used as the example since each state can develop their own criteria to some extent, allotted \$21 million for CTE, and the state's economy being more in line with practical workplace skills, finding what the criteria of measurement for success would look like may be easier than perhaps a statewide sweep of measurement for other larger populations and diversity of industry (Miller 2022). With the legislation around CTE from the U.S. Department of Education planning on assisting the states with around \$1.7 billion for 2022, and the state

spending on each student ranging from \$7,954 to 20,645 each year as of 2009, this is the estimated cost of providing the youth of America a high quality education within the budget (Teaching-certification.com 2009).

Community Development with Career and Technical Education relies on how the rubrics such as Kentucky's are followed through with. In one region meeting the bare minimum of the above rubric may be enough to ensure success, with simple work internships and networking as a result serving the population properly. In other areas, the bare minimum may not be enough, in locations with limited variation of community businesses and organizations that can be connected with the school. In these districts, a school may need to utilize technology and be more creative with its CTE and ILP application in order to serve the students to the level the above rubric would indicate. Otherwise, CTE might be very difficult to implement appropriately if there is little bridge building to increase local support for the school district's efforts.

If the federal government is to be believed, the lack of proper Community Development and CTE implementation has allowed the skill gaps issue in the United States, and 'middle skill' jobs outnumber the actual adults that have those jobs, which directly hurts American economic competitiveness (Ed.gov 2019). With 30 million jobs that do not require a bachelor's degree but pay an average of \$55,000 a year, and high school students that took 2 or more CTE style courses being employed full-time at higher rates than those who took less, and a near \$4,000 difference in pay between CTE concentrators and non-concentrators after 8 years after graduation, Career and Technical Education needs to be massively prioritized by school systems (Ed.gov 2019).

III. Design

With the current realities facing Career and Technical Education established in the Literature Review, the program evaluation for CTE can be challenging, but nonetheless is necessary and more importantly, possible. Career and Technical Education is meant to better produce graduates better ready to enter the workforce. The government through awarding certain schools for what is judged as high quality programs will reflect that sentiment in the data. The research design was not the testing of data, but analysis and interpretation of the data reported by the federal government by treating the schools chosen as a form of case study. It will aid in the process of theory building for CTE as a program. Being the awarding officials, and thus the most reliable source in order to best evaluate the program of Career and Technical Education, and make proposals regarding its improvement, the tendencies of the results of the data collected will indicate high quality CTE programs. This was an inductive approach, without random sampling, but instead choosing specifically from the winning schools to find commonalities. Career and Technical Education is positive for the overall education system and building society according to the structures set into place. What makes a great program is those indicators of success from the data available.

The data analyzed was three consecutive years of winning school CTE program data reporting low income students served, graduation rates, and percentile of the participants that attended post-secondary education or earned industry recognized credentials, as these criteria in the Literature Review were what is predicted to be

needed by the workforce, with low income students served as partial criteria for success as Career and Technical Education is also supposed to aid in Community Development. Higher percentiles of this data, 60% or higher, would indicate the program winners are achieving increasing the potential for higher standards of living for the Americans served, while under 60% would indicate needed improvement. Sixty percent was chosen as it would be over half of the students served, reaching a majority but also leaving space for growth. Also the achievement of higher percentiles would indicate that the majority of lower income students universally had access to a potential higher standard of living through more potential opportunities and better developed necessary skills. It can be evaluated if CTE is working, if the methods and styles of approach produce similar percentiles to the statistics of award winning schools.

The other more important aspect of analysis was the comparison of logic-models of a random three award winning schools from each year, 2017-2019, and their similarities to the federal recommendations for high quality CTE programming. The year of 2017 had 10 schools that won. The year of 2018 had 11 schools that won. The year of 2019 had 8 schools that won. Three schools from each were selected, and the data they provided regarding their CTE programs was compared. The similarities between what is considered high quality school logic-models/and general CTE information that was provided by the schools can help create implications that less successful CTE programs could follow, and the data collected and analyzed from winning schools could set relative goals for what can be considered as 'successful.'

Data percentiles will be calculated indicating successful CTE program elements, with a sample of each year's data logic-models or related information compared to achieve a semblance of commonality.

IV. Data Collection

Government Recommendations and 2017-2019 Award Winning Logic Model Data

The government recommendations, school logic-models, and other CTE information used for analysis may be found in Appendix A. Table 1 with the information referenced in the next section of Overall Data for Award Winning Schools Years 2017-2019 may also be found in Appendix A for easier cross-referencing. The data was collected from the CTE or CTE related information on processes gathered from the schools as to their program structure and implementation styles.

Overall Data for Award Winning Schools Years 2017-2019

Table 1 has overall data collected from Careertech.org and was calculated through Excel to find common percentiles. Each year awards according to their program evaluations the best school CTE programs from across the United States of America. The criteria for winning is based off of the statistics of schools that proved to be successful in the implementation of their CTE programs, namely providing excellent environments and processes conducive to graduating students by literally training students in their career field of interest and the same students earning industry-based certifications, work experience, and possibly going on to secondary education, with assisting low income students as a plus to community development. The data collected from three consecutive years was important to study what was working and what needed to be fixed holistically in the schools that did not earn these awards. The Figures 3-18 are the general recommendations for high quality logic models and

structures, as well as a sample of 3 schools from each of the 3 consecutive years. The figures represent the information provided to the public regarding the logic model style approaches taken by the schools in their CTE programs, and provided insight into commonalities between the logic models of each school's CTE programming. Though literal logic models were not found, with the exception of one school, the information that was found indicating the approach to their logic models supported the overall data by giving context to what it means to have an effective and award winning program, with the assumption that the other schools not sampled also had similar logic-model and CTE approaches.

The overall data from the three years of all award winning schools was presented in one table of the same criteria, with information not available indicated by 'n/a' and excluded from percentile calculations for better accuracy purposes. This data can be found in Appendix A for reference. While other data was available the criteria chosen was done so to address the project question of whether CTE programs were improving the potential of increased quality of life for students, through the service of low income students, and high rates regarding graduation, and successes such as education and industry recognized credentials. It was not indicated how the students were selected that provided the data for the award process, but the missions of the award winning schools universally indicated either a requirement for CTE participation and certifications earned, or strongly encouraged it as an aspect of the overall program at the school, since many of the schools awarded are CTE focused institutions.

While the award winning schools are not the same each year, in the next section the analysis of the commonalities between what was found will add to the conversation and indicate an answer to the project question. Through the interpretation of the overall data collected, and the hypothesis that while Public Education is great but CTE programs are not implemented properly, the discussion of award winning commonalities would lead to a much better understanding of the exact needs to making CTE the best it can be, creating essential policy implications.

V. Analysis

The Commonalities of Winning Career and Technical Education Programs

The project question of whether or not Career and Technical Education in the Public Education system is implemented well in American school systems was answered by indications of the policy logic related data found, Perkins V data, and information from the winning schools. Since not all schools are successful at winning this award presented by the government, specific qualities must set these schools apart from those that did not win. Results of CTE implementation are to vary because of resources, data that is actually published and not published, etc. One of the first challenges was the fact that many schools, even the award winning schools, do not publish their logic models for their CTE programs, and information had to be taken from the school sites as to their goals and vision for their CTE programming. Commonalities were able to be found. This was done by comparing the information that was found to recommendations from the government, including the government's example of a great Career and Technical Education logic model from the state of Wisconsin.

The commonalities between government logic model recommendations as seen in Figures 3-6, and award winning schools according to the 9 schools analyzed were plentiful, so much so that many seemed very much the same in many regards, indicating that all of the award winning schools, do well to aim for similar structures to what the government recommended. All of these Figures are in Appendix A for cross reference to the analyzation presented. Figure 6's The State of Wisconsin's logic model

was used to shape the government's stance in this analysis as it was used by the government as a suggested example of a high quality CTE Logic Model for other states and schools to use. The commonalities started with all parents and administration and community members being engaged in the CTE processes as an important part of CTE success. They all used mentorships and focusing Learning plans such as the ILPs discussed earlier in the project. All schools pushed students to find the right pathway, and the more students used the processes, schools would measure success by the resulting percentages of certificates earned, with more certificates earned and hands on knowledge gained. This information is specifically defined in Table 1 for years 2017-2019 being the benchmark of successful percentiles of certifications and education gained, etc. The government officials who evaluate CTE and say that it is of high quality, awarding those winning schools analyze, believe this information makes their programs good. Therefore, if other schools wanted to be within the same quality, they would focus their efforts on raising their similar statistics to parallel the statistics of the award winning schools.

All programs considered hands on time spent actually doing what their career path or program is, such as is suggested in Figure 3, as necessary and signs of success. All schools had short term goals to increase participation and build understanding between all stakeholders and students, with better scores on tests, more certifications earned, and higher education in the students' future as goals. All schools held some importance to the process or a variation of Continuous Improvement. Continuous Improvement is a way to plan, do, study, and act on the processes the schools used,

workshopping what worked and collecting the data on it, such as how much time was spent by each student, and number of internships, etc., studying what needed to change, then following through by acting out the brainstormed changes. Part of this was through reviewing the school's Operational Plan as is shown in Figure 4.

Figure 5 shows that understanding the three barriers to student access of CTE programs, 1. Finding a Qualified Instructor, 2. Equipment and Facilities Costs, and 3. Fitting CTE into a Student's Day was also universal concepts with award winning schools implementing CTE, with adjusting their logic models for this. Using simulated workplaces like training, coaching, and software usage with financial planning was similar, while presented in Figure 6, with outcomes of student skills better fitting employer needs being measured. Structured activities with valid research strategies, planning education and career paths with technology and global competency in mind was similar to other approaches, as seen in Figure 7. Figure 8 reinforced the earning of college credits and job training, with industry contacts. Dual enrollment for college courses in Figure 9 represented a commonality, bridging the gap between local and online universities and school CTE goals.

Figure 10 showed a commonality of using technology and engaging parents at the same time, by using site-based programs to help parents help their students through student-progress tracking, and assistance to high risk students especially making sure they reach their goals. As most schools boasted aiding low income students, this was a regular commonality to measure success. At Harmony High School in Figure 11, the school actually published their logic model, and it has very important

similarities to the priorities of the other award winning schools, and the recommendations of the government. Harmony is set apart to some degree by taking their public interaction to another level and publishing their logic model, but also through their focus of hiring specialists for family engagement with required workshops and websites, and common but great short to long term outcomes such as building community development and knowledge of the program, increasing students in need to go through the program, and ultimately having those students have proven success at subjects relevant to the workforce, namely math, reading, and science.

All schools have logic model approaches that want to align across secondary and post-secondary education, with connections to community-based organizations as in Figure 12. All schools focus specific training with multiple career fields as in Figure 13, with Northwest offering 23 career pathway options at their school. In Figure 14, the absolute requirement of a certification that is industry accepted and the usage of Individualized Education Programs was common in the schools analyzed. A commonality in the schools regardless of using Programs of Study or Career Pathways as a guide was to build understanding of expectation by breaking down the courses, internships and apprenticeships, clubs, and special classes available as in Figure 16. A goal of hiring more teachers and offering multiple pathways was common as is revealed in Figure 17. In Figure 18, the final commonality was the goal of helping students figure out what they're good at in the attempt to help guide them to find the right career pathway and honing those related skills.

VI. Results

The results were that the award winning schools all had very detailed programs and plans for success, with defined approaches to bring work-related skills into the school day by putting the right professionals in the right place, with the administration and parents helping the student find what they were interested in, and obtaining official certifications and potentially secondary education lined up as the measurements of success and the measurements by which winning schools were chosen. They also had detailed plans by which to study their effectiveness, and to change the program to lead to student success better. The lack thereof of these elements would of course indicate criteria other non-award winning schools could and should strive for in order to achieve the percentages of success that the overall data indicated.

Other indicators of places for improvement in Public School CTE programs can be seen in the statistics revealed by the overall winning school results, according to the measurements of success in the Analysis section. The schools that won the award were predominantly affluent academies or technical schools with specific focuses, such as Charles E. Shea High School, Shea Government and Public Administration Academy, which won its award specifically for serving low income citizens, and improving work-based learning for the students (Careertech.org 2017). However, overall statistics showed that only 50% of the students served for the winning schools were low income, though the percentages of those achieving industry recognized credentials or going on to secondary education were rather high (Careertech.org

2018). This is an important distinction because if the best schools only ended up focusing on 50% of low income students, then that means that the CTE programs in other schools may not be reaching low income students much at all. Therefore it is worth celebrating it as a success that these programs specifically had half of their students as low income learning amazing life skills, but take it as an indicator that if these work and life skills are necessary for students to learn, then the programs are not reaching everyone the way they should be.

Most of these schools were specialized in their focus, but something that set them apart from the public education system was that because of their focus and building skills related to the workforce needs, they were able to fit more into what the government was estimating the private sector needed and student needs for success (Careertech.org 2019). Therefore these schools prepared students for the workforce and career readiness at a higher standard.

The public education system serves low income citizens and students, but without as much of the extra focus that Career and Technical education applies, due in great part to the lack of staff, resources, and the requirements of public education curriculum. Award winning CTE programs increased student opportunities through earning certifications at above 60% each year analyzed from 2017-2019 for the workforce and higher education attended at a percentile of 79% to 93%, well above the majority of students in the program. Universally all students in the program graduated for the most part, and with these higher percentages set a standard for public education to improve its service and aid in the social mobility of its students

better. One way to achieve this would be the fulfillment of the need of technology and data infrastructure improvement in public education, just as these award winning schools were able to provide through the natural devotion to student development that the website accounts with student-progress for parents to follow brought. By collecting their own data and studying it to see where they are at when it comes to the actual percentiles of students graduating with certifications, skills, and college prospects, then changing their CTE logic model to include this continuous improvement as a requirement for their growth, they too could see 80% or more of their students graduating more with the skills that will help them traverse the modern workforce better and aid in the Community Development of localities. In its CTE recommendations the government suggested that business literature and legislation indicated a need for better trained people in the workforce, which the award winning schools provided (Ed.gov 2022). There was also utility in analyzing the rubric of 'great' CTE and the value of good programs.

The results of the data analyzed and discussed of Career and Technical Education programs of high success indicate, with the knowledge of current public education realities, that schools with the devoted curriculum toward student career and college success, with the staff and resources backing the implementation, resulted in more students of lower income being better prepared for creating a higher standard of living and better prepared for the challenges that may arise. Improving the financing of Career and Technical Education with increased community and leadership elements in the overall curriculum of public education would be an initial challenge, but one that

would eventually pay off well. Years of technical course options, interviews and internships, job pathways and ladders, leadership and local community development, conflict resolution, etc. would benefit every American, boosting the quality of human capital, and contributing to positive Community Development.

VII. Conclusion

Conclusion, Counterarguments, and Final Recommendations

In conclusion, building up America's human capital and boosting much needed Community Development relies on a reinvigoration of Career and Technical Education's data collection and study, and Education as a whole playing a much more significant role in society. The understanding of the improving America's competitiveness globally and supporting systems that work best, for all, comes back to the basics of Organizational Theory. According to Public Administration literature, management, cross-functional work teams, and diversity management will result in an improved upon democracy and is the result of great leadership (Tompkins 2005). Tompkins explains that American institutions are evolving to True Democracy and that critical thinking will be vital to decide which direction society will be moving. Bridges must be built through open systems theory, boosting citizen interpersonal competence and problem solving, with authentic relationships (Tompkins 2005). If this is true, then these management, cross-functional work teams, and open system theories will rely on citizen interpersonal competence and problem solving, something that is not widespread yet, or supported enough in the broad education system, as reported by the government and is evidenced by the criteria and actual successful data of award winning institutions with proven high quality Career and Technical Education systems. The improvement of Career and Technical Education with day to day hands on

experiences for students, and the utilization of Individual Learning Plans will lift the much needed quality of life in schools and their communities.

Counterarguments

One of the counterarguments for this project's results could be in regard to the data implications. The main obstacle with the data collected is it measured perhaps a few thousand students as the total served for these CTE programs from higher tier focused schools. The common standard at public schools should be at the same level or better than the award winning schools, while the actual award winning schools should have data that is much more impressive. Arguably, CTE should not be needed as much, because the public education curriculum should already be achieving readying students for the workforce and giving back to society. The data itself was not perfect, some information was not reported, and the reported data may measure one facet but not others that are similar and important. Incomplete data meant there was a disconnect between education and the government, and that is not good for policy evaluation and the improvement of implementation.

The number of students served was different for each school represented, so taking into account demographic, implementation, and a number of other uncontrollable variables, the best that can come from the data is that due to a lack of devotion to certain criteria, such as achieving the outcome of high percentiles of students having access to CTE courses, and job certifications, public school CTE

programs do not achieve a high enough standard, leaving a great deal of space for growth. An important counterargument is that if the separation of powers and influences and autonomy of the states maintaining their education decision-making power is more important than exact quality of the education system and student career readiness, then perhaps if the program is less effective than it could be, it is not the worst situation. However, it would be a disservice to the students entering into the workforce, knowing the competition Americans face, to not improve the structures available where possible.

Final Recommendations

Therefore, is CTE in the Public Education System implemented well? The answer is that its implementation is great according to the rubric that is set into place, but the implementation should be improved through better trainings and focus within educational culture, as overall the actual numerical results indicate a great deal of improvement in processes, community development, work experience, and certifications earned is necessary.

Even workplaces value Individual Development Plans that allow supervisors to clarify performance expectations, which is considered good management practice, and fits the lead and manage in the public interest NASPAA competency (OPM.gov 2022). The Department of Labor Workforce Development Solutions promotes the growth of H-1B skills and training through grants, many of the same skills and training that

education would naturally be promoting through their education programming (Dol.gov 2022). The need to reduce the skills gap including healthcare, industrial, and administrative skills in the U.S. workforce must be a collective effort, and using this research will help policymakers and educators participate in and contribute to the policy process, fulfilling a NASPAA competency.

The Kentucky CTE program implements the learning of individual and group management skills, record keeping and information, capital resources, and technology and math communication skills (Education.KY.gov 2020). These are measureable because students are actually getting to practice at the day to day experiences. This data should be collected to measure the actual numbers of skills, certifications, tested and earned, and should change approaches accordingly to improve those percentiles after proper research and study. Hiring a team of researchers and specialists specifically for these tests would help improve data collection and initiating better implementation. These actions taken, with this study, will aid policymakers and educators in achieving the NASPAA competency of productive communication and interaction in culturally responsive ways with a diverse and changing workforce and society at large. Education and society should evolve together, and building community is very linked to what type of lifestyles are available to the citizens. The more students are graduating with skills that will help develop society, the higher the potential is for those adults to contribute to Community Development and improve the policies that will ultimately enhance the educational system and societal structures they work with over the course of their lives.

References

- Careertech.org. (2017). *Excellence in Action 2017*. Retrieved from Careertech.org:
<https://careertech.org/excellence-action-2017>
- Careertech.org. (2018). *Excellence in Action 2018*. Retrieved from Careertech.org:
<https://careertech.org/excellence-action-2018>
- Careertech.org. (2019). *Excellence in Action 2019*. Retrieved from Careertech.org:
<https://careertech.org/excellence-action-2019>
- Coalition for Career Development Center. (2022, 10 10). *Condition of Career Readiness in the United States*. Retrieved from Cte.careertech.org:
https://cte.careertech.org/sites/default/files/files/resources/CCDC-Report-V9_0.pdf
- Cohen, M. (2020, October). *Using Data and Research to Improve Career and Technical Education Programs*. Retrieved from Cteresearchnetwork.org:
<https://cteresearchnetwork.org/sites/default/files/2021-05/Module2FacilitatorsGuide-508.pdf>
- College Station Independent School District. (2022, September 15). *A&M Consolidated High School College Station High School Course Description Book*. Retrieved from Csisd.org:
<https://www.csisd.org/common/pages/DisplayFile.aspx?itemId=52648085>
- Education Spending By State*. (2009). Retrieved from Teaching-certification.com:
<https://teaching-certification.com/teaching/education-spending-by-state/>
- Excellence in Action Spotighting: Carl Wunsche Sr. High School, Veterinary Science Program*. (2019, January 9). Retrieved from Blog.careertech.org:
<https://blog.careertech.org/?p=14917>
- Harmony Magnetic Academy. (2017). *Harmony Magnetic Academy*. Retrieved from Nationalblueribbonschools.ed.gov:
https://nationalblueribbonschools.ed.gov/awardwinners/winning/17ca135pu_harmony_magnet_academy.html
- Henderson County High School*. (September, 15 2022). Retrieved from Hchs.henderson.kyschools.us: <https://hchs.henderson.kyschools.us/>
- Kekahio, W. (2014). *Logic models: A tool for effective program planning, collaboration, and monitoring*. Retrieved from Ed.gov:
<https://www2.ed.gov/about/offices/list/oese/oss/technicalassistance/easnlogicmodelstoolmonitoring.pdf>
- Kentucky Department of Education. (2018, November). *Individual Learning Plan Self-Implementation Rubric*. Retrieved from Education.ky.gov:

- https://education.ky.gov/educational/compschcouns/ILP/Documents/ILP_Self-Implementation_Framework.pdf
- Kentucky Department of Education. (2020). *Career and Technical Education Program of Studies High School 2020-2021*. Retrieved from Education.ky.gov:
https://education.ky.gov/CTE/cter/Documents/2020-2021_CTE_POS.pdf
- Millard Public Schools. (2022, October 5). *High School Career Academies*. Retrieved from Mpsomaha.org:
<https://www.mpsomaha.org/departments/curriculum/high-school-career-academies>
- Miller, S. L. (2022, April 7). *Notes from the Division*. Retrieved from Cte.ed.gov:
<https://cte.ed.gov/newsroom/estimated-fy-2022-state-allocations>
- Mishicot High School Programs of Study. (2022, September 15). Retrieved from Mishicot.k12.wi.us: <https://www.mishicot.k12.wi.us/o/high-school/page/programs-of-study>
- Nashua High School North. (2021). *Footsteps to the Future*. Retrieved from Nashua.edu:
https://www.nashua.edu/cms/lib/NH50000505/Centricity/Domain/56/2022%20PROGRAM%20OF%20STUDIES_MASTER_For%20WebFeb%202022.pdf
- National Center for Education Statistics. (2022, October 10). *Back to School Statistics*. Retrieved from Nces.ed.gov:
[https://nces.ed.gov/fastfacts/display.asp?id=372#:~:text=The%2049.4%20million%20public%20school%20students%20enrolled%20in%20prekindergarten%20through,fall%202020%20included%20\(source\)%3A](https://nces.ed.gov/fastfacts/display.asp?id=372#:~:text=The%2049.4%20million%20public%20school%20students%20enrolled%20in%20prekindergarten%20through,fall%202020%20included%20(source)%3A)
- Perkins Collaborative Resource Network. (2022, June 12). *Perkins V*. Retrieved from cte.ed.gov: <https://cte.ed.gov/legislation/perkins-v>
- The Annie E. Casey Foundation. (2021, September 20). *New Child Poverty Data Illustrate the Powerful Impact of America's Safety Net Programs*. Retrieved from Aecf.org: <https://www.aecf.org/blog/new-child-poverty-data-illustrates-the-powerful-impact-of-americas-safety-net-programs#:~:text=According%20to%20the%20official%20poverty,high%20for%20children%20of%20color>
- The Committee on Health, Education, Labor, and Pensions. (2018, 12 19). *Strengthening Career and Technical Education For the 21st Century Act*. Retrieved from Congress.gov:
<https://www.congress.gov/115/crpt/srpt434/CRPT-115srpt434.pdf>
- The Magnetic Schools Assistance Program Technical Assistance Center. (April 2017). Logic Models for Magnet Programs. *The Magnet Compass*, 1-8. Retrieved from file:///C:/Users/MStua/Downloads/MagnetCompass_Apr2017_Vol7-1.pdf

- The STEM Academy. (2022, 10 10). *Career Pathways*. Retrieved from Stem.pctvs.org:
<https://stem.pctvs.org/stem/career-pathways>
- Tompkins, J. R. (2005). *Organization Theory and Public Management*. (pp. 47, 126, 316). Belmont: Wadsworth Cengage Learning.
- U.S. Bureau of Labor Statistics. (2022, October 10). Retrieved from Bls.gov:
<https://www.bls.gov/opub/ted/2022/employment-up-in-47-states-over-the-year-ending-june-2022.htm>
- U.S. Department of Education. (2014). *National Assessment of Career and Technical Education*. Retrieved from Ed.gov:
<https://www2.ed.gov/rschstat/eval/sectech/nacte/career-technical-education/final-report.pdf>
- U.S. Department of Education. (2019, September). *Bridging the Skills Gap: Career and Technical Education in High School*. Retrieved from Ed.gov:
<https://www2.ed.gov/datastory/cte/index.html>
- U.S. Department of Education. (2021, November). *Use of Educational Technology*. Retrieved from Nces.ed.gov:
<https://nces.ed.gov/pubs2021/2021017Summary.pdf>
- U.S. Department of Education. (2022, August 15). *Fiscal Years 2021-2023 State Tables for the U.S. Department of Education*. Retrieved from Ed.gov:
<https://www2.ed.gov/about/overview/budget/statetables/index.html>
- U.S. Department of Education. (2022, August 31). *Biden-Harris Administration Announces Public and Private Sector Actions to Strengthen Teaching Profession and Help Schools Fill Vacancies*. Retrieved from Ed.gov:
<https://www.ed.gov/news/press-releases/biden-harris-administration-announces-public-and-private-sector-actions-strengthen-teaching-profession-and-help-schools-fill-vacancies>
- U.S. Department of Education. (2022, September 20). *Every Student Succeeds Act*. Retrieved from Ed.gov: <https://www.ed.gov/essa?src=rn>
- U.S. Department of Labor. (2022, October 5). *Employment and Training Administration*. Retrieved from Dol.gov:
<https://www.dol.gov/agencies/eta/skills-grants/h1-b-skills-training>
- U.S. Office of Personnel Management. (2022, October 5). *Policy, Data, Oversight: Training and Development*. Retrieved from Opm.gov:
<https://www.opm.gov/policy-data-oversight/training-and-development/career-development/>
- Welcome to Northwest Education Services Career*. (2022, October 5). Retrieved from Northwested.org: <https://www.northwested.org/career-tech/>

Wisconsin Department of Public Instruction. (2022, September 15). *Academic and Career Plan Program*, Wisconsin Department of Public Instruction. Retrieved from Dpi.wi.gov:
https://dpi.wi.gov/sites/default/files/imce/acp/3382%20ACP_LogicModel-ed_131104_FINAL.pdf

Appendix A: Figures 1-18, and Table 1.

Performance Ratings			
4 Exemplary level of development and implementation	3 Fully functioning and operational level of development and implementation	2 Limited development or partial implementation	1 Little or no development and implementation
<p>The local board of education adopts guiding policies requiring schools to fully implement an advising system to guide students along career and academic pathways that incorporate individual learning plans (ILPs) for every student in grades six (6) through twelve (12).</p> <p>The district provides resources (e.g. stipends, substitutes, professional learning opportunities, materials) for ILP planning and vertical communication and transition planning (including ATC or CTC programs if available). These resources will allow elementary, middle and high</p>	<p>The local board of education adopts policies and guidance requiring schools to implement an advising system to incorporate individual learning plans (ILPs) for all students in grades six (6) through twelve (12).</p> <p>The district facilitates collaboration between schools and other educational centers to ensure student career exploration and planning is an ongoing process.</p>	<p>The local board of education adopts policies and guidance requiring schools to implement individual learning plans (ILPs) for all students in grades six (6) through twelve (12).</p> <p>The district provides limited connections between schools and other educational centers to ensure student career planning is an ongoing process.</p>	<p>The local board of education has no policy or provides little to no guidance for schools to implement individual learning plans (ILPs) for all students in grades six (6) through twelve (12).</p> <p>The district does not provide connections between schools and educational centers or encourage student career planning.</p>

3

Figure 1. Kentucky Individual Learning Plan Example 1.

Source:¹

¹ Kentucky Department of Education. (2018, November). *Individual Learning Plan Self-Implementation Rubric*. Retrieved from Education.ky.gov: https://education.ky.gov/educational/compschcouns/ILP/Documents/ILP_Self-Implementation_Framework.pdf

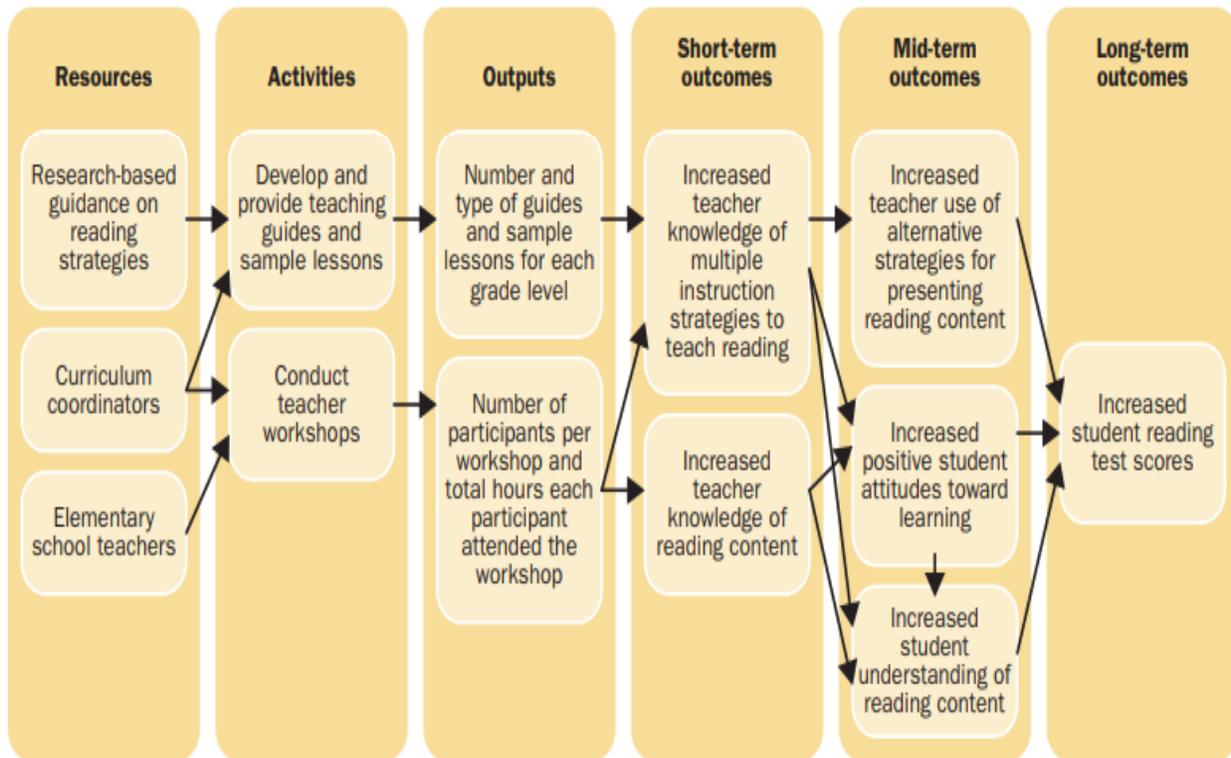
<p>Student performance is enhanced through the advisory program and the ILP, which is evident, observed and clearly communicated in all aspects of the school settings and reflected in teacher lesson plans.</p>	<p>Student performance is improved through the advisory program and the ILP is evident in classrooms and observable in student work.</p>	<p>Student performance is not consistently connected to the ILP process nor is a connection evident in the classrooms or observed in student work.</p>	<p>There is no clear connection to student performance communicated through the ILP or evident in classrooms or student work.</p>
<p>The district ensures that students, teachers, parents/guardians and advisers review and revise ILPs on an ongoing basis throughout the year to inform instruction. Teachers/advisers revise curriculum and pedagogy to obtain information on student progress and collaborate across all content areas.</p>	<p>The district ensures that students, teachers, parents/guardians and advisers review and revise ILPs on an ongoing basis throughout the year to inform instruction, revise curriculum and pedagogy, and obtain information on student progress.</p>	<p>The ILP is reviewed and revised only with one or two of the following: student, teacher, parent/guardian or adviser.</p>	<p>The ILP review and revision process does not include students, teachers, parents/guardians and advisers.</p>
<p>The ILP and advising process are used to design a comprehensive plan for each student. The planning process includes parents/guardians and community members to closely align the plan and educational</p>	<p>ILPs provide a way for families to become active partners in the educational process, using identified procedures for involving parents/guardians in planning, updating and reviewing ILPs on an ongoing</p>	<p>Parents/guardians are informed of the ILP process and their child's plan is shared with them.</p>	<p>Parents/guardians are not included in the ILP development or advising process.</p>

Figure 2. Kentucky Individual Learning Plan Example 2.

Source:²

² Kentucky Department of Education. (2018, November). *Individual Learning Plan Self-Implementation Rubric*. Retrieved from Education.ky.gov: https://education.ky.gov/educational/compschcouns/ILP/Documents/ILP_Self-Implementation_Framework.pdf

Figure 1. Sample logic model for a teacher training program on alternative reading strategies



Source: Authors.

Figure 3. Government Recommendations Example 1.

Source:³

³ Kekahio, W. (2014). *Logic models: A tool for effective program planning, collaboration, and monitoring*. Retrieved from Ed.gov: <https://www2.ed.gov/about/offices/list/oese/oss/technicalassistance/easnlogicmodelstoolmonitoring.pdf>

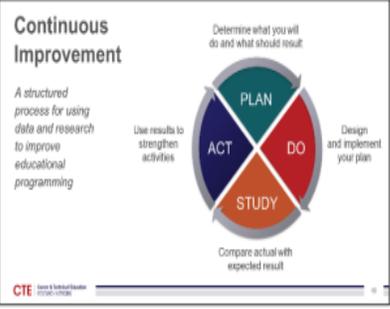
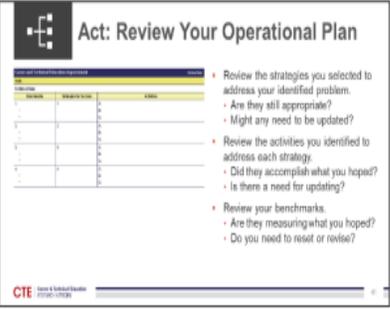
Script and Notes	PPT Slide
<p>Slide 40: Recall that the continuous improvement cycle is intended to be an iterative process. Act means taking the time to review your performance results in the context of your work and feed the study information you collect back into the process.</p> <p>Simply put, did you achieve what you set out to do? Are you satisfied with your results? If not, it may be you are using the wrong approach. This is where we look at what the data tell us from implementing our plan for continuous improvement and determine what we may need to change. Act is where you apply the data and research you collected to determine whether changes are needed and mobilize your team to refine your effort.</p>	
<p>Slide 41: Specifically, you may wish to review your operational plan and, where necessary, make changes in how you are approaching your work. This will begin with reviewing the strategies you originally selected to address your identified problem. Are they still appropriate or are changes necessary? Did your review of the research suggest updates to your approach?</p> <p>You also will wish to consider whether the activities you identified are appropriate for the strategies selected. Are they accomplishing what you hoped? Might they need to be updated or replaced?</p> <p>Finally, you may wish to review the benchmarks you are using to assess success. Are they accurately measuring what you set out to assess? Is there a need to reset or revise?</p>	

Figure 4. Government Recommendations Example 2.

Source: ⁴

⁴ Cohen, M. (2020, October). *Using Data and Research to Improve Career and Technical Education Programs*. Retrieved from Cteresearchnetwork.org: <https://cteresearchnetwork.org/sites/default/files/2021-05/Module2FacilitatorsGuide-508.pdf>

A recent Institute for Education Sciences survey identified three significant barriers to student access to high-quality, in-demand CTE programs. They include:

1. Finding a qualified instructor
2. Equipment and facilities costs
3. Fitting CTE into a student's day

One way that your state can work to break down these barriers is by investing in innovative career and technical education delivery methods that allow for learning beyond the classroom walls and outside the school day. Distance and online delivery methods can utilize great instructors regardless of geography and can bridge the gap between learners and industry. Simulated workplaces bring the workplace to the classroom. And competency-based education allows students to demonstrate mastery of skills despite their day being full and can limit equipment costs for districts.

As your state prepares to implement Perkins V, remember that the new Act offers greater flexibility than prior laws. Congress recognized that all states do not have the same needs and provided greater flexibility within the required local uses of funds.

For example, while districts are required to plan and carry out elements that support the implementation of CTE programs and programs of study that result in increasing student achievement, they can choose to meet this requirement by expanding opportunities for students to participate in distance CTE programs and competency-based education programs¹.

The revised language empowers states and local partners to meet learners', educators', and employers' unique needs and promotes better alignment of CTE programs with state, regional, and local economic needs.

Figure 5. Government Recommendations Example 3.

Source: ⁵

⁵ Perkins Collaborative Resource Network. (2022, June 12). *Perkins V*. Retrieved from [cte.ed.gov](https://cte.ed.gov/legislation/perkins-v): <https://cte.ed.gov/legislation/perkins-v>

Academic and Career Plan (ACP) Program, Wisconsin Department of Public Instruction (DPI)

Inputs	Activities	Outputs	Outcomes		
			Short-Term (<1 Year)	Intermediate (2-4 Years)	Long-Term (>4 Years)
<p>DPI-funded staff to lead professional development and provide ongoing support</p> <p>School staff, including counselors, teachers, and administrators</p> <p>State funding for software and professional development</p> <p>ACP guidance materials</p> <p>Legislation and administrative rules (ACP, Education for Employment, and Standard (e))</p> <p>Software system (TBD)</p> <p>Existing academic and technical standards, including the Wisconsin School Counseling Model</p> <p>Existing partnerships and agreements</p>	<p>Mentoring relationships between individual students and school staff (teachers and counselors) for academic and career planning</p> <p>Ongoing family communication and engagement, including conferences</p> <p>Instruction to build self- and career exploration and awareness, goal setting, and planning skills</p> <p>Targeted and personalized academic and career planning, engagement opportunities, and support</p> <p>Creation of an ACP, including a financial plan, for every student</p> <p>Coordination between other student planning services (including IEP teams) and ACP development</p> <p>Leveraging relationships with business and industry, community, and higher education partners to strengthen academic and career planning</p> <p>Professional development, including training in the use of software and coaching/mentoring</p> <p>Local data collection and improvement planning</p>	<p>Students have ongoing interactions with staff to engage in academic and career planning.</p> <p>Families are engaged in their students' academic and career planning.</p> <p>Every student has an updated ACP.</p> <p>Students engage in academic and career exploration activities aligned with their plans.</p> <p>School staff members are well-prepared to support ACP services.</p> <p>The school engages in a cycle of data-based continual improvement for ACP implementation.</p>	<p>Students are more aware of their interests, skills, strengths, and values.</p> <p>Students are more motivated and engaged.</p> <p>Students have better goal-setting skills.</p> <p>Students understand the breadth and relevance of high school offerings and opportunities.</p> <p>Students better understand postsecondary career and education options.</p> <p>Students have better academic and career-planning skills.</p>	<p>More students keep pace with expected credit attainment and graduate on time.</p> <p>Students are better prepared to enter the workforce or attend college after high school graduation.</p>	<p>More students enter college ready for credit-bearing coursework.</p> <p>More students enter college, persist, and graduate.</p> <p>Students have skills that better fit employer needs.</p> <p>Students experience higher employment rates and earnings potential.</p> <p>Students make informed postsecondary choices.</p>
<p>Evaluation measures:</p>	<ol style="list-style-type: none"> Percentage of students who have an ACP mentor/coach Dedicated time for academic and career planning Aspects of ACPs being implemented Levels of implementation Use of ACP software Number of significant interactions between schools and families Number of professional development sessions Number of conferences and counseling sessions Number of staff training hours Number of staff receiving ongoing coaching or mentoring Career and technical education (CTE), Advanced Placement (AP), and International Baccalaureate (IB) course offerings Partnership, alignment, or articulation agreements 	<ol style="list-style-type: none"> Staff members' confidence in their own ability to support student academic and career planning (on a number of submeasures, including career, postsecondary education, and financial planning) Number of meetings between students and staff Students' use of ACP software (number using software and frequency and length of website visits) Number of students taking honors, IB, or AP courses Number of career concentrators Number of students with completed ACPs Number of students engaging in state- 	<ol style="list-style-type: none"> School attendance* Qualitative assessment of student understanding of postsecondary options, interests, skills, strengths, values, and goal setting (survey)* Qualitative assessment of school-family communication 	<ol style="list-style-type: none"> Graduation and dropout rates* Student progress toward graduation* Number of students entering college or the workforce within six months of graduation* Number of students earning industry-recognized certificates or endorsements* Number of students earning dual credit* Number of students taking honors or AP courses* Number of students completing honors courses or earning scores of 3 or higher on AP or IB tests* 	<ol style="list-style-type: none"> College enrollment, persistence, and graduation rates* Four-year and two-year college remediation rates Job satisfaction Earnings and employment levels Loan default rates

Figure 6. Government Recommendations Example 4.

Source:⁶

⁶ Wisconsin Department of Public Instruction. (2022, September 15). *Academic and Career Plan Program, Wisconsin Department of Public Instruction*. Retrieved from [Dpi.wi.gov](https://dpi.wi.gov/sites/default/files/imce/acp/3382%20ACP_LogicModel-ed_131104_FINAL.pdf): https://dpi.wi.gov/sites/default/files/imce/acp/3382%20ACP_LogicModel-ed_131104_FINAL.pdf

9 Logic Models and Alternative CTE Information from Award Winning CTE Institutions

Year 2017

1. Passiac County Technical Institute

In all three Career and Technical Education (CTE) pathways, students practice problem solving and professional technical skills through structured activities, inquiry and open-ended, problem-based projects throughout a four-year program of study. These interactive and collaborative activities simulate the professional environment and foster the development of the career practices that will make STEM graduates highly marketable in their career pathway. The CTE Skills and Career Ready Practices include, but are not limited to the following (NJ State Career Ready Practices):

Students will be:

- Acting as a responsible and contributing citizen and employee.
- Applying appropriate academic and technical skills.
- Attending to personal health and financial well-being.
- Communicating clearly and effectively and with reason.
- Considering the environmental, social and economic impacts of decisions.
- Demonstrating creativity and innovation.
- Employing valid and reliable research strategies.
- Utilizing critical thinking to make sense of problems and persevere in solving them.
- Modeling integrity, ethical leadership and effective management.
- Planning education and career paths aligned to personal goals.
- Using technology to enhance productivity.
- Working productively in teams while using cultural global competence.

Figure 7. Passiac County Technical Institute CTE Information 1.

Source: ⁷

⁷ The STEM Academy. (2022, 10 10). *Career Pathways*. Retrieved from [Stem.pctvs.org](https://stem.pctvs.org): <https://stem.pctvs.org/stem/career-pathways>

2. Millard Public Schools

MILLARD PUBLIC SCHOOLS CAREER ACADEMIES PROVIDE A UNIQUE OPPORTUNITY TO EXPLORE A CAREER FIELD AND PREPARE FOR COLLEGE OR A CAREER WHILE YOU ARE IN HIGH SCHOOL.

- Prepare for a career while earning a high school diploma and college credit
- Save money and time by starting college courses and job training
- Enhance employment opportunities
- Develop industry contacts

Millard's Career Academies are a two year commitment during the junior and senior years. Students attend their home high school half of the day and attend classes at the academies the other half of the day. Students may apply for the academies in November of their sophomore year. **Select here for more information and the application.** You may also visit your school's guidance office for additional information.

Academy Applications for 2023-24 are due **November 17, 2022 by 4:00 p.m.**

Figure 8. Millard Public Schools CTE Information 1.

Source: ⁸

⁸ Millard Public Schools. (2022, October 5). *High School Career Academies*. Retrieved from Mpsomaha.org: <https://www.mpsomaha.org/departments/curriculum/high-school-career-academies>

Dual Enrollment Courses

The academy programs are designed to prepare students for smooth transitions to a career and post-secondary education. The career academy provides many opportunities to earn dual enrollment credit at Metropolitan Community College and the University of Nebraska at Omaha. Dual enrollment is not required, but it is highly encouraged to experience the early college benefits of the career academies.

Dual Enrollment forms for first and second semester for Metropolitan Community College (MCC) were submitted in the spring. University of Nebraska at Omaha (UNO) dual enrollment will be completed in class. For the 2022-2023 school year, there is no tuition cost for MCC, fees still apply. MCC and UNO will send a tuition and fees statement home in late September for first semester and in late January for second semester. Registration and tuition payments are agreements between the post-secondary institution and the family. Payment will be due directly to the college(s) upon receipt of the statement. Students who have past due tuition balances will not be allowed to register for the following semester.

Figure 9. Millard Public Schools CTE Information 2.

Source: ⁹

⁹ Millard Public Schools. (2022, October 5). *High School Career Academies*. Retrieved from Mpsomaha.org: <https://www.mpsomaha.org/departments/curriculum/high-school-career-academies>

3. Harmony Magnet Academy

Students and parents are supported through various site-based programs. Parents participate in Parent Institute for Quality Education. They also can track their students' progress through the school information system and Naviance, our college and career Internet-based program. This tool gives students and parents a deeper understanding of achieving "College and Career." The pathway teams at HMA also meet with all high-risk students to discuss their student performance level and place each student on a contract to participate in the intervention program. Out of a total of 527 graduating students in a five-year summary of post-secondary opportunities, 517 students chose to attend two or four-year colleges, military, or technical schools.

Figure 10. Harmony Magnet Academy CTE Information 1.

Source: ¹⁰

¹⁰ Harmony Magnetic Academy. (2017). *Harmony Magnetic Academy*. Retrieved from Nationalblueribbonschools.ed.gov: https://nationalblueribbonschools.ed.gov/awardwinners/winning/17ca135pu_harmony_magnet_academy.html

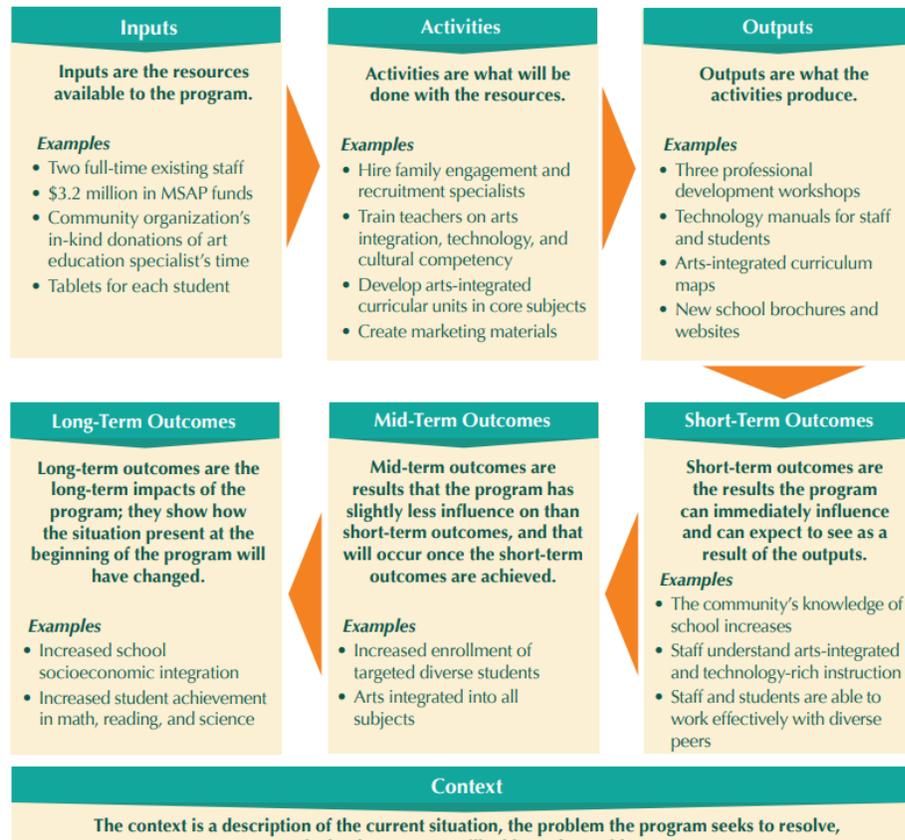


Figure 11. The Magnetic Schools Assistance Program Technical Assistance Center CTE Information 2.

Source: ¹¹

¹¹ The Magnetic Schools Assistance Program Technical Assistance Center. (April 2017). Logic Models for Magnet Programs. *The Magnet Compass*, 1-8. Retrieved from file:///C:/Users/MStua/Downloads/MagnetCompass_Apr2017_Vol7-1.pdf

2018

1. Carl Wunsche Sr. High School, Veterinary Science Program

Excellence in Action Spotighting: Carl Wunsche Sr. High School, Veterinary Science Program

For all learners to experience success, the systems and stakeholders that surround them must work together. To accomplish this, there should be alignment across secondary and postsecondary education, workforce, community-based organizations, and business and industry. An example of what can be achieved when this cross-sector collaboration occurs is the 2018 Excellence in Action Award winner in the Agriculture, Food & Natural Resources Career Cluster®, the Veterinary Science Program housed at Carl Wunsche Sr. High School, in Spring, Texas.



“The students, school district personnel and business partners have worked tirelessly to make the Veterinary Science Program one that produces students who are educated, informed, prepared, and equipped with the knowledge and skills to begin their career in the field of veterinary medicine and/or agriculture or pursue postsecondary education,” said Jessica Graham, M.Ed., LVT, Veterinary Science Teacher. Recently, she received the Outstanding Early Career Alumni award from Texas A&M University.

Figure 12. Carl Wunche Sr. High School, Veterinary Science Program CTE Information 1.

Source:¹²

¹² *Excellence in Action Spotighting: Carl Wunsche Sr. High School, Veterinary Science Program.* (2019, January 9). Retrieved from Blog.careertech.org: <https://blog.careertech.org/?p=14917>

2. Traverse Bay Area Intermediate School District Career-Tech Center, Teacher Academy

Regional Career and Technical Education

Northwest Education Services (North Ed) Career Tech is a career and technical education school serving more than twenty high schools and over 1,100 juniors and seniors in the five-county Grand Traverse area. The center offers training in 23 career fields utilizing the latest technology and state-of-the-art equipment. North Ed Career Tech and regional schools share great pride in preparing students for immediate job placement, postsecondary education, or military service. Learn more about the benefits of career and technical education [HERE](#).

Figure 13. Northwest Education Services Career Tech CTE Information 1.

Source: ¹³

¹³ *Welcome to Northwest Education Services Career.* (2022, October 5). Retrieved from Northwested.org: <https://www.northwested.org/career-tech/>

3. A&M Consolidated High School, Information Technology

College, Career, and Military Readiness Requirements

The College, Career, and Military Readiness (CCMR) component of the Texas Education Agency (TEA) accountability system measures graduates' preparedness for college, the workforce, and the military. Graduates can demonstrate college, career or military readiness in the following ways within CSISD:

- * Meet the Texas Success Initiative (TSI) Criteria in ELA/Reading and Mathematics on the SAT, ACT, or by successfully completing and earning credit for a college prep course as defined in the Texas Education Code.
- * Earn dual course credit of at least 3 hours in ELA or mathematics or 9 hours in any subject area
- * Meet criterion score of 3 or higher on an Advanced Placement (AP) exam
- * Earn an industry-based certification from the approved list from TEA
- * Graduate with a completed Individualized Education Program (IEP) and workforce readiness
- * Graduate under an advanced diploma plan and be identified as a current special education student
- * Earn a Level I or Level II certificate
- * Enlist in the Armed Forces*
- *TEA has temporarily suspended enlistment in the armed forces as a way to meet this requirement due to inaccurate reporting in this area.*

Figure 14. College Station Independent School District CTE Information 1.

Source: ¹⁴

¹⁴ College Station Independent School District. (2022, September 15). *A&M Consolidated High School College Station High School Course Description Book*. Retrieved from Csisd.org: <https://www.csisd.org/common/pages/DisplayFile.aspx?itemId=52648085>

2019

1. Mishicot High School

Cluster: Agriculture/Food/Natural Resources
Program of Study:
Plant Science

Related Courses:
___ Intro to Agriculture
___ Intro to Horticulture
___ Landscape Design
___ Introduction to Soil Science
___ Chemistry
___ AP Biology
___ Spanish

Capstone Opportunities:
___ Youth Apprenticeship:
 Horticulture
___ Green House Manager
___ Agriculture Co-Op

See <https://www.yamanitowocounty.com/>
for more information

Co-Curricular and Volunteer Opportunities:
___ FFA
___ 4-H
___ West of the Lake Gardens
___ Manitowoc County Garden Club
___ School Forest

Online Course Opportunities through iCEV:
___ Plant Science
___ Principles of Floral

Industry Recognized Certifications:
___ Department of Workforce Development
Certificate of Proficiency
This is awarded upon successful completion of YA experience.

Advance Placement Exams:
___ Biology
___ Environmental Science
*Student must pass AP Exam with a score

General Education Dual Credit Courses:
4 Year College Offerings:
___ Honors English
___ Senior Year Math
___ CAPP Communications
___ Psychology
___ Sociology

*To determine how courses will transfer to the university you plan to attend please check:
<https://www.wisconsin.edu/transfer/wizards/>

Technical College Offerings:
___ Written Communications
___ College Math
___ Research and Inquiry
___ Psychology
___ Sociology

Figure 15. Mishicot High School CTE Information 1.

Source: ¹⁵

¹⁵ *Mishicot High School Programs of Study*. (2022, September 15). Retrieved from Mishicot.k12.wi.us: <https://www.mishicot.k12.wi.us/o/high-school/page/programs-of-study>

2. Henderson Kentucky Schools

expected to demonstrate initiative and innovative thinking throughout your four years at HCHS. Our staff is committed to helping you develop the skills you will need to succeed after high school, whether you plan to seek a degree, a professional license, or enter the workforce. Our courses and curriculum are designed to help you develop the world-class skills you'll need to succeed after high school.

It is never too early to begin looking at career interests and possibilities. Once you recognize your interests and talents, HCHS will give you the opportunity to develop a strong foundation for a successful future, no matter what path you take after high school. Once you've determined a path for your future, it is important you know the sequence of classes necessary to meet your goals. Talk with your parents, upper-classmen, your teachers, and especially your guidance counselor to ensure you're scheduling the right classes.

Several high school and many of the Career and Technical Education (CTE) classes give you an opportunity to earn dual credit (both high school and college credit). Advanced Placement® (AP) courses, college-level courses taken in high school that give you a chance to earn college credits, are offered in grades 9-12. Additionally, HCHS offers a wide variety of elective coursework that can help you explore interests and talents that might offer you direction as you consider career choices for your future.

This scheduling handbook is a guide that can direct your decision-making about the courses you take in high school that will help you meet your post-secondary education and/or career goals.

Figure 16. Henderson Kentucky Schools CTE Information 1.

Source:¹⁶

¹⁶ *Henderson County High School*. (September, 15 2022). Retrieved from [Hchs.henderson.kyschools.us](https://hchs.henderson.kyschools.us/): <https://hchs.henderson.kyschools.us/>

Henderson County High School, Health Science (Kentucky)

Health Science Career Cluster®

The Health Science program of study launched nearly 35 years ago at Henderson County High School in Henderson, KY, has grown from only one pathway with two instructors to three pathways with five instructors. It serves more than 500 learners, becoming one of the largest CTE programs of study in the state. As learners progress through the program, they can focus on one of the following areas: Allied Health, Pre-Nursing and Medical

Administrative Assistant. Regardless of their focus area, all seniors are required to participate in one of the work-based learning experiences offered at 47 local healthcare facilities such as Redbanks Nursing Home, Deaconess Health System, Methodist Hospital, and St. Anthony's Hospice. Through dual credit courses, health science learners can earn up to 12 college credits, as well as five industry-recognized credentials, ensuring learners are ready to continue their education or enter the workplace.



Figure 17. Careertech Henderson County High School CTE Information 2.

Source:¹⁷

¹⁷ Careertech.org. (2019). *Excellence in Action 2019*. Retrieved from Careertech.org: <https://careertech.org/excellence-action-2019>

3. Nashua High School North

The Nashua School District offers 16 career pathways. Career Pathways are small groups of occupations within a career cluster. Occupations within a pathway share common skills, knowledge, and interests.

These career pathways can be used to model how decisions that are made in middle and high school may engage a student's interests and further a student's educational and career options beyond high school. The pathways may assist students in identifying a real pathway to follow to reach their more distant and abstract career goal. Reviewing career pathways may help students find the route to follow a passion to a career or trade.

Below you will find links to the pathways that are offered by the Nashua School District. Our high school students will complete both their required coursework for our high school diploma as well as the courses recommended by their chosen optional pathway. Students who select and follow a pathway, build a foundation for life after high school, whether they chose college, business or trade school, the military services or the workforce.

The Career Pathways assist in:

- Helping the student to gain an understanding of the skills required for a specific career
- Helping students to be more aware of how school subjects relate to the world of work
- Connecting the student to classes that may be of interest to them and may help them toward their goals
- Helping students figure out what they're good at
- Opening student minds to all kinds of careers opportunities (a diverse range of career opportunities)
- Student preparation for education and skill acquisition needed to gain employment
- Ultimately, making education meaningful for each student

Students are strongly encouraged to discuss their career pathway related questions and choices with their school counselor.

Figure 18 Above. Nashua School District CTE Information 1.

Source:¹⁸

¹⁸ Nashua High School North. (2021). *Footsteps to the Future*. Retrieved from Nashua.edu: https://www.nashua.edu/cms/lib/NH50000505/Centricity/Domain/56/2022%20PROGRAM%20OF%20STUDIES_MASTER_For%20WebFeb%202022.pdf

Table 1: Winning CTE Program Data 2017-2019.

	Low Income	Graduation Rate	Percentile That Attended Post-Secondary Education	Percentile That Earned Industry Recognized Credentials
2017	59	100	86	91
	16	100	100	82
	5	100	96	n/a
	88	100	99	100
	71	100	78	41
	17.25	n/a	94	81
	100	100	95	100
	27	100	94	94
	61	100	95	100
	72	100	100	91
Totals (%)	51.62%	100%	93.70%	86.66%
	Low Income	Graduation Rate	Percentile that Attended Post-Secondary Education	Percentile That Earned Industry Recognized Credentials
2018	34	100	57	99
	73	97	85	22
	48	100	n/a	100
	16	100	n/a	100
	32	100	n/a	96
	100	100	67	100
	50	100	75	100
	34	100	92	100
	n/a	100	86	27
	58	100	n/a	100
	63	100	92	100
Totals (%)	50.80%	99.72%	79.14%	85.81%
	Low Income	Graduation Rate	Percentile That Attended Post-Secondary Education	Percentile That Earned Industry Recognized Credentials
2019	n/a	100	100	89
	77	100	94	60
	25	100	88	11
	89	100	40	n/a
	66	96	n/a	26
	46	100	84	95
	n/a	100	86	100
	16	100	90	n/a
Totals (%)	53.16%	99.50%	83.14%	63.50%

Sources:¹⁹

¹⁹ Careertech.org. (2017). *Excellence in Action 2017*. Retrieved from Careertech.org: <https://careertech.org/excellence-action-2017>
 Careertech.org. (2018). *Excellence in Action 2018*. Retrieved from Careertech.org: <https://careertech.org/excellence-action-2018>
 Careertech.org. (2019). *Excellence in Action 2019*. Retrieved from Careertech.org: <https://careertech.org/excellence-action-2019>