

Career Technical Education: Unique Professional Development

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Career-Technical Education Teachers: Unique Professional Development

Introduction

This white paper examines the profile and professional development of Career-Technical Education (CTE) teachers. It will enable those connected to CTE such as administrators, academic teachers, counselors, students, employers, and parents to understand who CTE teachers are and how they are prepared.

CTE teachers are a unique group of secondary teachers. Their uniqueness is centered around two basic characteristics. First, the CTE teacher's subject matter expertise comes mainly from industry work experience specific to the area they teach rather than college coursework in the content area. The expertise for the CTE teacher is the primary value-added aspect of CTE teachers. Second, their path to teacher certification is different than all other teachers. In effect, the CTE teacher is teaching while learning to teach. This path is necessary because of the importance of work experience to CTE teaching. It is highly unlikely industry practitioners would leave their full-time jobs, go to college, invest in a teaching certificate, and then search for a teaching position.

The profile and professional development of the CTE teacher has evolved over time. This evolution is a function of the change from a Vocational Education model for occupational training to a Career-Technical Education model. Much of this evolution has been influenced and funded by the federal government. For over 100 years federal funding has been provided to states to support programs for occupational training. Originally this funding supported programs in agriculture, home economics and business. Over time, the legislation and funding increased to support a wider agenda for vocational education. The legislation also included increased accountability and evaluation.

In a vocational model, most teachers came directly from industry with extensive work experience in their subject area. Most had no college degree. Many of the programs focused directly on specific, narrow occupational skill development. As the CTE model developed, programs broadened to include a wider assortment of occupations. These programs often required teachers with more academic preparation and less reliance on actual work experience.

A current profile of CTE teachers includes several different backgrounds usually based on the specific program taught. The majority of CTE teachers still come directly from industry and teach while obtaining the certificate. This path is often referred to as a "non-traditional" approach. There are other CTE teachers who complete a "traditional" teacher education program like academic teachers. This consists of going to college for four to five years, completing a teacher education program, and then searching for a position. This is common in CTE teaching areas such as Integrated Business Education, Family and Consumer Sciences, and Technology Education (formerly Industrial Arts).

Industry Expertise

It is easiest to understand the uniqueness of the professional development for CTE teachers by reviewing two important points related to industry experience. First, the context in which industry experience is required to be a successful CTE teacher. Second, the importance of understanding the advantages that industry experience brings to CTE program design and instruction.

The context – why is industry experience so essential to effective CTE teaching? It is a time-honored principle in CTE that to teach a skill you must have successfully practiced it. This enables a teacher to bring the real world of work into education. CTE programs are replicas of the actual workplace. A teacher who comes from the workplace brings all the knowledge, skill, and employer expectations into the classroom. Students learn to use the same tools, techniques, and skills in a lab similar to the real setting they will work in someday. This is especially true in “hard” skill trade areas such as automotive, construction trades, welding, machine trades, auto collision, and others. These trade areas represent the traditional vocational education subjects that were heavy on physical, psychomotor skill development. However, the same principles apply in all CTE areas which may be more of a blend of academic, affective, and psychomotor skills. For example, nursing students learn to use the same equipment, tools, and procedures they will use in a hospital or clinic. Students in an EMT program will do the same. In addition to learning in lab like the workplace, CTE students will also do internships, job shadowing and projects in the workplace. Some CTE students may do early placement, apprenticeships, or cooperative education where they are in part-time paid work experience.

In most cases, a CTE teaching candidate must verify a minimum number of years of recent work experience to qualify for a position. This is to ensure the content expertise is appropriate and current to teach the subject. As such, many CTE teachers in these areas have no college degree. A teacher in a traditional path would use college coursework to verify subject matter knowledge. Work experience serves as the equivalent to college coursework in CTE.

The importance of industry experience has evolved over the years. As more and more CTE programs have expanded into “soft” skill areas the emphasis on work experience has declined. These programs include more of an academic dimension and rely less on actual work experience and more on college preparation. This makes sense as the employability and job requirements to be marketable have changed. Employees today must still use psychomotor skills. In addition, they must be prepared with the academic and affective skills needed to meet the needs of the current high-performance workforce. The profile of teachers in these programs is often a mixture of college and work experience. This teacher may have a bachelor’s degree (or even a master’s) in the content area along with work experience. Some examples are teachers in programs such as information technology, biotechnology, health occupations, performing arts, criminal justice, and nursing.

The importance of industry experience has led to CTE teacher shortages especially in select high-demand/high-salary occupations such as nursing and engineering. Shortages can also vary based on the demand for specific occupations. For example, many welding programs were eliminated in the 1980s mainly due to the high cost of setting up and maintaining the laboratory. Many programs have been reestablished because of the job growth in the welding occupation. However, since the occupational area is growing the salaries increase. This makes it less attractive for a welder to leave welding and enter teaching. Many industry people are reluctant to make the career change due to the commitment and investment required to become a teacher. This situation makes it difficult for school administrators to encourage some practitioners to leave industry and enter CTE teaching.

Advantages of industry experience – a value-added benefit.

There are many advantages to the industry experience the CTE teacher brings to the classroom. This results in a “value-added” component to the CTE programs. The following three advantages sum up the value of industry experience.

1. **The teacher brings the most current occupational knowledge from industry into the classroom.** CTE is about workforce competence, which includes college and career preparation. CTE teachers have recently come from industry and thus bring with them the most current occupational practices and knowledge needed to prepare students to be competent and employable in a specific occupation. Students must know how to use the most current equipment, materials, tools, and procedures to be marketable and hired by an employer.
2. **The teacher maintains up-to-date content knowledge by remaining active in an occupational area.** CTE teachers typically have one foot in industry and one in education. This provides students the most current and competent content knowledge possible. This is important because industry needs, and workforce competence are constantly changing. Technology is changing so fast that teachers must be up to date on the latest equipment and techniques used in an occupation. This results in a relevant educational experiences and increases the student’s employability.

CTE teachers typically continue to work in their respective industries. A building trades teacher may continue to build homes in the summer. A horticulture teacher may continue to run a landscaping/lawn service in the summer. Cosmetologists often continue to cut hair while they teach. EMT and Fire Science teachers typically continue to work part-time in their industries.

3. **The teacher provides job shadowing, internships, field trips, and capstone projects that are involved directly with industry.** An important part of the effectiveness and value-added aspect of industry experience is the CTE delivery model relies on contextual, work-based learning and experiential education. This model requires a teacher with industry connections and networking. The CTE teacher with current industry experience provides the engagement needed to make the CTE program authentic and relevant. Teachers are also involved in placing students in full and part-time positions in their industry. CTE programs serve as an important employee resource for employers and the community.

Certification Pathway

All CTE teachers pursue one of two certification pathways: traditional or non-traditional. The traditional path is the one most familiar to everyone. It is the same path as all academic teachers in subjects such as math, social studies, language arts and others. The non-traditional path is unique to CTE teacher certification and is the one that the majority of CTE teachers take.

All certification paths require college coursework. Teachers will take courses in curriculum design, instructional methods, working with students with special needs and educational theory. The traditional path requires more coursework than the non-traditional path. It is a “pre-service” path, meaning the teacher completes preparation (including student teaching) before obtaining a teaching position. The

non-traditional path follows an “in-service” path, meaning the teacher is in a teaching position while completing the certification coursework and requirements. The CTE teacher learns to teach while teaching.

There are three variations in the non-traditional path to CTE certification. A brief description and an example of each indicate how the paths differ from the traditional certification path. First, there is the teacher who comes directly from industry without a college degree (e.g. cosmetology). Second, many new CTE teachers will have a bachelor’s degree in their content area (e.g. athletic training). A third group of CTE teachers are academic teachers who transition from teaching an academic subject to a CTE subject. Some examples of this are language arts teachers who teach Interactive Media, science teachers who teach Biotechnology and art teachers who teach Graphic Design. These teachers transition from teaching an academic subject to preparing students for the workforce. The biology teacher for example who transitions to teaching BioTech is no longer teaching an academic subject but is preparing students for the BioTech workforce. This requires the teacher to become a workforce educator which is quite different than being an academic teacher. Each of the three paths have specific coursework required to obtain a CTE certificate.

Of the three paths, two require the industry practitioner to make a career change from industry to education. In the third path, an academic teacher is transitioning into CTE. In all three paths, there is a transition to CTE. For teachers in the non-traditional path the change usually comes with a lower salary as well as an investment in obtaining the teaching certificate. Also, for many CTE teachers this transition can be a major adjustment as some were in a high school CTE program themselves and thus were non-college bound. For many of these teachers, college is a foreign place. And in most cases, industry practitioners have worked in the private, for-profit sector. It can be a difficult adjustment for some practitioners to work in the non-profit, public sector.

1. **An example of a non-traditional teacher without the bachelor’s degree.** Marc had been a successful machinist for 12 years. He graduated from a high school machine trades program and went directly into the industry. He was an excellent worker and very active in his community especially as a Boy Scout leader and lay minister in his church. He was a very outgoing guy sporting a large, full beard that resembled a character from the Duck Dynasty show.

He was offered a machine trades teaching position and decided to give it a try. He enrolled in a CTE teacher education program as an undergraduate student. He began the path of teaching and learning to teach (eight college courses) that would last about two years. Marc was successful in his classes and well-liked by his professors and classmates. He discovered that he really loved to teach.

It was evident everything was working because his students loved his style and enthusiasm for machining and teaching. Parents, administrators, and colleagues also enjoyed his energetic presence. Everyone always knew when Marc was in the room. Near the end of his certification courses he arrived for class without his beard. Everyone was shocked to see him without it as it seemed almost part of him and who he was. Of course, everyone wanted to know why the beard was gone. He explained that he thought it was fine to have a big beard when he was a machinist but felt that all teachers should be clean shaven. The professors took that as a sign that Marc had fully made the transition from industry to education.

2. **An example of a non-traditional teacher with a bachelor's degree.** Cameron (Cam) had been a successful actor, director, and theatre manager for many years. He used his acting experiences and a bachelor's degree in theatre to be fully engaged in all aspects of theatre. In his late 50's he was approached by a school district to set up a performing arts academy. This intrigued him as he felt like it would be a great opportunity to establish a first-class academy using all the experience he had gained throughout his career. Plus, he loved a challenge!

Cam accepted the position and began the process of building a performing arts academy. His first challenge was to convert an abandoned cafeteria into a black box theatre. He also had to take teacher education courses (eight) to learn how to teach his profession to students eager to get on the theatre path. Since he had a bachelor's degree, he would take the coursework at the graduate level and apply some of it to a master's degree.

It took about three years for Cam to complete his CTE coursework. By that time, the performing arts academy was incredibly successful. It produced five shows per year, some in the black box and others in the main high school auditorium. Enrollment was full, with a waiting list of students to enter. A second teacher had been hired. All students were off to some of the top liberal arts colleges in the country. Even a few were going to college in Europe. Students were studying all aspects of theatre and many had received college scholarships. Cam continued to take the remaining courses to obtain his master's degree. Schools throughout the region send representatives to tour the academy and meet with Cam in hopes of replicating it in their districts.

3. **An example of an academic teacher transitioning to CTE.** Julia had been a cosmetology student in high school. Unlike most of her classmates she went directly to college to become a Spanish teacher. Her idea was to use her cosmetology education to help pay her way through college. She cut hair part time in a salon during the academic year and worked full time in the summers. She completed her studies and was hired to teach Spanish at a local high school.

Julia was in her seventh year of teaching when her former high school cosmetology teacher retired. She was quick to inquire about replacing her. It is quite common for a former student to replace a CTE teacher when he/she retires. However, it is very rare that the former CTE student would be a teacher. She applied and was selected. One of her first surprises was that she would have to return to college for the coursework needed to obtain the CTE certification to teach cosmetology. She would take four courses to obtain the certificate and she could use all of them toward a master's degree.

Julia hit the ground running in her new position as a cosmetology teacher though she quickly learned it was a very different type of teaching. One of the benefits was her background in Spanish was a big plus as the community had a large Latino population. She quickly completed her coursework to add the CTE certification to her Spanish credentials. She continued her classes and obtained the master's degree.

The transition to CTE teaching is essentially about moving from practitioner of an occupation to a teacher of that occupation. CTE teachers become workforce educators. The certification pathway provides professional teacher education courses and experiences to enable CTE teachers to prepare

students for college and career. The CTE teacher's path to state certification is unique since industry experience is essential to teaching in CTE.

All teachers in New York, including those in CTE, must be certified by the state of New York. CTE teachers can pursue provisional, initial, and professional teaching certificates. Usually, teachers progress through provisional to initial to professional certificates. The requirements for each certificate are established by the state and must be completed to obtain a certificate. Teachers must attend a university approved to offer CTE coursework leading to a certificate and pass the Educating All Students exam. Work experience in the related occupational area is required for each specific CTE certificate. Detailed information on obtaining a CTE certificate is available in the document [Guidelines for Career and Technical Education Administrators and School Counselors](#).

Successful CTE Teacher Preparation

Many industry practitioners have made a successful transition from industry to education and become exemplary teachers. Mainly, the successful transition relates to the interaction of three groups: the teachers themselves, the specific school, and the university teacher education program. All three must work together to support the CTE teacher's successful transition to education. The success can be attributed to a combination of the following five strategies.

1. The school or district should select industry practitioners who have a teaching/learning disposition. This serves as an excellent foundation for the school and teacher education program to build on. There are a few indications of this disposition. One is if the prospective teacher had a training role while working in their industry. Many positions, especially managerial, include an employee orientation, training, and development component. These experiences are good preparation for teaching. Also, this disposition is often fostered by those who are involved in teaching related activities in their community such as coaching, scouting, youth mentoring, adult, and/or continuing education. This demonstrates an interest in working and developing young people.
2. School districts should make it as attractive as possible for quality industry practitioners to enter CTE teaching. Many CTE teachers are attracted to teaching to provide a different lifestyle. For example, a chef may have worked every holiday in industry but in teaching will be home with family on holidays. Teachers often have evenings, weekends and holiday breaks that are usually unavailable in industry. CTE teachers will also have some time off in the summer for work or family activities. Teaching is hard work and involves considerable time and commitment, but the lifestyle of an educator is appealing to many who work in industry.
3. Districts must address the financial commitment necessary to enter education. This is particularly important in high demand/salary occupational areas. Many industry practitioners will take a significant salary reduction to enter teaching. Also, most will have an investment in the college courses required to obtain teacher certification. This can be very expensive and a burden on people who are already taking a cut in pay.

Schools must address the salary difference and investment required. This is often done by placing the teacher higher on the salary scale for initial starting salary. This is done by offering credit on the salary scale for work experience years. Many schools will also offer financial

assistance to support the teacher through the investment in certification requirements. In some cases, federal funds may be available to assist with this investment. Many CTE teachers continue working and earning during summer to maintain their salary level from industry. In addition to supporting their salary this also keeps the CTE teacher current and connected to industry.

4. Provide close and frequent supervision during the first two years of teaching. Unlike the traditional path, CTE teachers have no prior teaching experience or professional teacher education coursework/experiences. Also, CTE teaching is a second career/life change rather than the first career choice which is common for teachers prepared in a traditional path. Some CTE teachers will struggle during the transition and some may find teaching is not for them. School administrators should provide extensive, quality, detailed feedback during evaluations.

Being a successful practitioner of an occupation and teaching that occupation are two different endeavors with different skill sets. Typically, it can take two to three years for a CTE teacher to become an effective teacher. As such, the CTE teacher requires considerable support, encouragement and guidance as the teaching skill set develops.

5. School administrators must coordinate supervision with university coursework and mentoring. CTE teachers will be taking courses in a university teacher education program while they are teaching. These courses serve as the basis for developing the teaching skill set. Part of the coursework includes a university teacher educator who will provide on-site instruction, mentoring and guidance. It is important to be familiar with the university coursework and role of the university teacher educator. If possible, it is wise to provide a CTE teacher to serve as the school mentor to the new teacher.

These strategies are likely to provide the most effective transition to CTE teaching resulting in a successful teacher. The primary benefactors of this success are the CTE students themselves.

Summary

Since the “*Nation at Risk*” report was published in 1983 there has been a persistent call for improvement in education. In effect, that report claimed that our education system was failing our society. Many changes were tried, and billions were spent in response to that report. The report was revisited 35 years later in 2018 and once again concluded our education system was failing us. In short, the mantra continues that we need a relevant education system that engages students in preparing them for the real world.

Even today this mantra continues from legislators, businesspeople, and parents. They call for education that is focused on real world problems and prepares young people for college and career in a knowledge economy. They want educators to bring rigor, relevance, and relationships into education to prepare young people for the challenges of a rapidly changing world. The profile and professional development of CTE teachers bring that rigor, relevance, and relationship into education where the real world is brought into the classroom.

The Author

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