

## The Impact of Career Education on Middle Schools in the United States

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**[Abstract]** This article discusses the topic of career education in the United States. It provides a brief history of Career Technical Education (CTE) along with legislative changes from the early 1900s to present day. Studies surrounding CTE in elementary to postsecondary school, along with notable benefits for students are presented. Benefits of early CTE programming increased graduation rates, indicated higher student attendance, showed higher academic engagement, and found students reported increased personal confidence and motivation, less stress, and enjoyment of meaningful learning opportunities. These findings were consistent across learners and school districts, irrespective of socioeconomic status. Middle school is identified as a significant time to implement CTE programs as students develop self-realization and self-exploration during adolescence. Despite Every Student Succeeds Act (ESSA) and Perkins V are federal laws calling for CTE programs at the middle and high school level, barriers to preventing successful implementation of such programs remain. To overcome such barriers, administrators and teachers are advised to provide appropriate professional development (PD), and being cognizant of the benefits associated with CTE programs. Overall, this article identifies the need for CTE in middle schools.

**[Keywords]** career education, CTE, CTE in the United States, CTE in middle school, CTE benefits, student perceptions, differently-abled learners, student academic engagement

### Introduction

Over the last 15 years, career-based education learning opportunities connected to the curriculum have gained attention as student engagement and achievement were found to be positively impacted (Oliveira & Araujo, 2021). Providing these experiences are defined as student academic processes outside of standardized testing data and grade transitioning (Cachia et al., 2018). Current and relevant studies suggest when career education and exploration opportunities are integrated into the curriculum, students have more individual ownership in their educational experiences, undoubtedly positively impacting their academic engagement, as supported by Piaget's Constructivist Theory (Giboney et al., 2021; Abbott, 2017; Douglass, 2016). In fact, research surrounding the topic has played its way into federal and state laws, such as Every Student Succeeds Act (ESSA) and Perkins V, which aim to provide funds for career technical education (CTE) and career education in general at the middle and high school levels (U.S. Department of Education, 2023).

Relevant research offers sound points, backed by theories, that children between 12 and 14 years of age often associate their abilities with future careers. The more students are exposed to careers—both known and unknown—the better an academic path with personalized goals can foster student aspiration and boost middle school student engagement (Rodriguez et al., 2016). This often means ditching the traditional educational curriculum to appeal to student identity, interests, and real-world connections in the 21st century (DeSua, 2015). Further studies suggest career-based education supports the academic and personal-social needs of students, which can

lead to better behaviors and attitudes connected to school. Multiple studies and theories indicate career-based education and exploration can positively impact all students, especially during middle school, and specifically in terms of engagement with the curriculum. This is imperative to consider as Godbey and Gordon (2019) note student engagement declines from 80% during elementary school to 60% during middle school and is only 44% by high school. Actions resembling lower levels of student academic engagement include but are not limited to attendance, participation, and completion of assignments. However, before elaborating on how CTE addresses these issues and creates positive impacts, it is important to know the history and current state of CTE in the United States.

### **A Brief History of Career and Technical Education (CTE) in the USA**

Vocational education in the United States can be traced back to the 19<sup>th</sup> century, as apprenticeships provided hands-on learning opportunities. As time went on, there was greater attention given to vocational education within schools (Cothron, 2019). However, a lack of federal funding for vocational education was an issue until President Woodrow Wilson's administration (1913-1921) met this dilemma head on. As a result, legislation was created addressing vocational education. The Smith Hughes Vocational Act in 1917 authorized federal assistance and investment in vocational education (Association for Career & Technical Education, 2023). This was the first time federal funding was given to vocational programs (Hylemon, 2022). This allowed vocational education to transform and strengthen from basic job preparation to focusing on academic and technical skills, as well as acquiring knowledge needed for postsecondary education and/or training (Cothron, 2019). The focus still included agriculture, home-making, and trade and industrial education during this time period (Association for Career & Technical Education, 2023). All in all, vocational education was still separate from traditional education in that it needed funding, new teacher training, and curriculum development (Hylemon, 2022).

Later, The Smith Hughes Vocational Act was amended and underwent several name changes throughout the 20<sup>th</sup> century, as states tried to address the economic and social conditions of the time. This included attention to agriculture, nursing, and fishery occupations (Association for Career & Technical Education, 2023). Ultimately, the Vocational Education Act (VEA) passed in 1963 (Hylemon, 2022). A major amendment to this act now gave states an annual allotment for vocation education depending on need. Funding was generally based on the number of students in each state, but the need to serve economically disadvantaged and disabled students was also considered. In 1976, equal opportunities for women and girls were included in the VEA (Association for Career & Technical Education, 2023).

In 1983, *The Nation at Risk: The Imperative for Educational Reform* report recognized the United States needed to improve academic performance, beyond mediocrity (U.S. Department of Education, 1983). This required more accountability and attention to assessment. As a result, vocational education changed and with the Perkins Act in 1984 (Hylemon, 2022). The Perkins Act (1984) redefined and improved what vocational education, focusing on preparing students for future employment in agriculture, business occupations, marketing, and preparation for postsecondary study (Cothron, 2019). In 1990, the act was revised to link academic and occupation preparation through local partnerships and established a greater accountability system (Association for Career & Technical Education, 2023).

In 1998, The Smith Hughes Vocational Education Act was repealed with the now third and updated Perkins Act. Perkins III, better known as Perkins Vocational and Technical Education

Act, called for an emphasis on academic knowledge, critical thinking, problem solving, work attitudes, technical skills, and general employability skills; it also called for greater accountability of programs of study (Hylemon, 2022). This signaled a change from job-specific vocationalism to skill-based, rigorous career education by the Association for Career & Technical Education (2023), along with renaming the association to the Association for Career and Technical Education. A shift in terminology with vocational education, now being referred to as CTE, was part of the ongoing re-engineering of CTE goals, which included greater accountability of CTE programs of study.

In 2010, No Child Left Behind (NCLB) set into law requiring states to implement an accountability system with their course of studies in CTE programs (U.S. Department of Education, 2015). Therefore, changes led to Perkins IV, so that there was a greater focus on academics, technical skills, and alignment with postsecondary programs. Programs still centered around 16 different career clusters. Additionally, the federal government allotted \$1.3 billion to both state grants and tech prep funding (Association for Career & Technical Education, 2023). With all these legislative changes, CTE programs transformed to accommodate all students for life after graduation.

This major shift in mission allowed CTE programs to prepare students for high-skill, high-wage, or high-demand professions while aligning rigorous academic expectations with required content standards (Cothron, 2019). The purpose was for students to not only earn job certifications but fulfill postsecondary prerequisites as well.

In 2015, NCLB was replaced with Every Student Succeeds Act (ESSA), seeking to support CTE learning opportunities to meet the 21<sup>st</sup> century work and life needs (U.S. Department of Education, 2015). The Perkins Act was revised again in 2018, and as Perkins V, required states to include indicators of program quality that were more measurable (U.S. Department of Education, 2018). This gave states the ability to flexibly design CTE programs to better meet their needs based on the job market in each state; decisions were also able to be backed by data-driven decision making (Association for Career & Technical Education, 2023).

Finally, the COVID-19 pandemic created many challenges, inviting states to be more creative and flexible regarding program delivery. Local needs assessments were given and analyzed to determine the amount of federal funding given (Association for Career & Technical Education, 2023). As it stands, \$1.8 billion is distributed to each state annually to assist local departments of education and legislators to fund developing and implementing CTE programs (U.S. Department of Education, 2023). To date, districts may apply for the competitive grant program (Association for Career & Technical Education, 2023).

### **Relevant Studies Pertaining to Career Education**

Studies focus on exploring CTE and exploration, to better understand its impact on education. Such studies report positive outcomes when students are given the opportunity to explore potential careers through some type of CTE program. Benefits include higher graduation rates, higher student motivation and engagement, especially in urban, rural, and poverty-stricken school districts. Career education plays an important role in instruction from kindergarten through post-secondary higher education as early as elementary school.

Barnes et al. (2020) conducted a study with educators regarding career exploration in students ages 6-11. Prior to receiving career lessons, students were asked to name and identify as many jobs as they could, making drawings envisioning themselves in the future; over 80% of the student participants chose the same 23 jobs. The same 10 roles were identified by 58% of

participants. This indicates serious long-term implications regarding workforce needs due to the limited knowledge of potential career paths (Barnes et al., 2020). Barnes et al. (2020) further noted that 70% of participants found out about previously unfamiliar jobs or careers, while 81% learned about five or more different jobs. Ninety percent of other participants agreed meeting career education was a positive for students, with 78% of teachers motivated to participate in this style of teaching but needed to learn more to better meet student needs. Nonetheless, these are positive outcomes, especially in student engagement, because students had the chance to envision their future self in a more realistic manner (Barnes, et al., 2020).

At the middle school level studies have found academic motivation increases when traditional curricula are either supplemented or replaced with CTE programs. Finley (2016) found that CTE can benefit middle school students after conducting a quantitative study involving 600 students spanning across 49 districts that offered CTE. Finley (2016) reports middle school CTE prepares students for career readiness upon completion of high school. Other significant findings included that CTE being equally, if not more, beneficial to students with different abilities. Socio-economic status did not play a factor in success within the CTE program as opposed to traditional curricula where students' academic outcomes can often be seen as predestined based on socio-economic status (Finley, 2016). Miles (2019) also found that middle school students report excitement, curiosity, and readiness to participate in career planning when given the chance. When implemented, middle schools see higher course enrollment, higher test scores, and lower dropout rates among their students (Hylemon, 2022).

Montello's (2024) qualitative case study in a well-performing, affluent school district with zero career education opportunities at the middle school level investigated student engagement after participation in a career education program that spanned over nine weeks. Student perceptions suggested their academic engagement was enriched, their stress levels lessened, and new knowledge was gained regarding *next steps* to make their desired career choices a reality. These middle school students also reported an increase in confidence, and because they viewed the learning as both meaningful and personal, they enjoyed interacting with a career education curriculum. It is worth noting five of the seven participants in the study required specific learning accommodations, contributing to CTE being appropriate for all levels of learners in all learning environments. These perceptions are imperative considering participants in this study are typically reluctant learners; if students see the instruction as meaningful, school districts should be able to visualize the potential contributions to academic success.

At the high school level, studies identified additional benefits. The Houston Independent School District (2017) recently implemented a CTE program; they found an "11.4 percent increase in the number of CTE students enrolled in HISD from 2015–2016 to 2016–2017 school year" (Houston Independent School District, 2017, p. 7). Higher student enrollment suggests CTE is attached to higher levels of student engagement and motivation to explore career education; students are motivated to take the courses offered outside the traditional curriculum. This is significant because students participating in CTE programs are more likely to enroll in more challenging courses (Helaire, 2014; Conti, 2014). It is worth noting the Houston Independent School District (HISD) is the largest school district in Texas and serves a population of students where nearly 80% are economically disadvantaged. The Houston Independent School District (2017) indicated that after implementing a CTE program, the annual dropout rate was double for those participating in a traditional curriculum outside CTE learning opportunities. This is very important to note as dropout rates can usually be traced back to disengagement in middle school

(Abbott, 2017). In fact, the Association for Career and Technical Education (2017) reports findings from a longitudinal study, showing that 81% of dropouts said more real-world learning opportunities would have kept them in school.

At the postsecondary level, studies indicate similar benefits associated with career education. Soares et al. (2022) reviewed 596 articles on the topic and found intervention with career education or exploration leads to greater student confidence, decision-making skills, career planning, job-hunting skills, self-efficacy, optimism, adaptability, self-awareness, and positive career-thoughts. These are critical skills to practice, irrespective of what future jobs or careers come to fruition (Westacott, 2022). As Travis (2020) argues, there is a clear need for career education in schools. The majority of students' educational journeys is based on whatever parents recommend and teachers offer academically; therefore, if there is no discussion of healthy career conversations, unrealistic and unhealthy choices will continue to plague too many students.

These ideas connect to another postsecondary study surrounding career education. Aleshkovski et al. (2020) suggests there ought to be updates that align current education with current society. This has the best chance to promote healthy decision making when exploring possible careers. In a case study, Aleshkovski et al. (2020) found that 40% of college student participants chose a profession either by accident or by an unconscious choice. Many participants were unaware of alternative career paths or how to transition between options if they wanted to make a change. This means young people selected a profession that was easily obtainable or because they knew the career path for it. Further, participants noted listening to suggestions of others dictated their career moves. In fact, participants reported that if they were exposed to different career options, even ones of no interest to them, it would have altered their decision making (Aleshkovski et al., 2020). What is more concerning, is that 40% of the college student participants in this study would have changed their trajectory if they had been better equipped to do so. These findings support the need for greater career exploration opportunities.

When career education opportunities are provided, students have more chances to improve upon critical thinking, strategic thinking, ethical awareness, professionalism, leadership, time management, teamwork, problem-solving scenarios and communication (Hylemon, 2022). Hylemon (2022) reports high school seniors and recent graduates, within the last five years, noted that typical earnings of a bachelor's degree do not necessarily require practice in these *soft skill* areas (Hylemon, 2022). This directly impacts employability or success at the job, making the situation equally frustrating for employees and employers, as having obtained a degree doesn't necessarily translate to being qualified (Hylemon, 2022). Hylemon (2022) found high school seniors and recent graduates (within the last five years) from WBL programs felt like they could discover careers, prepare for their future and found an increase in their confidence in general. Participants also describe their experience as *invaluable*, because they had good and bad experiences in the program, thus better preparing them for the future; students viewed their high school curriculum as *not a waste of time* (Hylemon, 2022). This is a stark contrast to other research, such as Bogush's study (2016), wherein 60% of high schoolers reported viewing their learning as unmeaningful.

Exposure to career and college information earlier than high school helps students learn more about themselves, reduces stresses and anxiety, and strengthens the community partnerships with all stakeholders, as everyone input in providing meaningful discussions about possible futures is meaningful (Douglass, 2016). Due to continual changes in higher education and in the contemporary workplace, well-timed attention to contemporary and future career opportunities is

a must (Abercrombie, 2014). Literature is screaming for schools to analyze current career education and exploration opportunities, as there are both overwhelming benefits and a need to prepare students for the 21<sup>st</sup> century work environment. Beginning this process can be most beneficial at the middle school level, as seen in the findings in the literature on the topic.

### **CTE for Middle Schools**

Middle school is an appropriate time for career education and exploration due to the level where students are developmentally in their lifespan (Westacott, 2021); adolescence is a time of curiosity, self-awareness, exploration, and honing-in on personal interests (Travis, 2020). Super's Theory (1975) argues middle school students realize and tap into their unique talents, linking school to work, goal setting and decision making (Ziegmont, 2021). Students are fully capable of acquiring new skills and practicing reflection, all great indicators career education and exploration is appropriate during the middle school ages (Ziegmont, 2021; Westacott, 2022). Super's Theory (1975) also suggests "children around the ages of 12 to 14 develop their capacities (abilities) and are in transition into exploration" (Ting et al., 2012, p. 86).

There are plenty of other theories surrounding the topic, such as Holland's Theory of Vocational Personalities and Work Environments (1959). Notably, this theory calls for allowing time for interests to develop during young adulthood (Merkle, 2019). This theory posits that middle school is not intended to help students find a specific career but rather to identify broad careers based on interests and personal preferences (Merkle, 2019). Without the opportunities to explore or experience, students may have misconceptions of their own interests.

It is also worth considering John Dewey's Experiential Learning Theory, referring to the need for students to experience life and situations to understand knowledge (Hylemon, 2022). Authentic experiences can be individually done or socially constructed. All in all, when student and curriculum interact, students play a significant role in their own learning (Bogush, 2016; Miles, 2019; Williams-Todman, 2022). This has the power to drive meaningful learning and have a positive impact on student engagement and is supported by Piaget's Constructivist Theory of Learning which encourages student-centered exploration (Birney et al., 2021).

Erickson's Theory of Psychological Development (1968) also suggests middle school to be an imperative time for CTE. Anxiety and inquisitiveness are naturally higher during this time, and adolescents seek greater approval from school, peers, and family (Douglass, 2016). This is closely tied to Bandura's Self-Efficacy and Social Cognitive Theory, calling for independence and social learning (Birney et al., 2021). Once students have the chance to learn about themselves, get feedback regarding experiences, self-efficacy can develop which encourages learners to work harder, persist longer, persevere, and have greater optimism as opposed to anxiety (Glessner, 2016). This can be helpful for all levels of socio-economic status, but notably in affluent communities, as too much parental involvement or helicopter parenting usually leads students to suffer from low self-esteem, anxiety, and depression (Lawson, 2020).

Finally, career education and its impact on student engagement at the middle school level is supported by Participation-Identification Model, where behavioral, emotional, and cognitive engagement levels come into play. Within the middle school years, psychologically speaking, disengagement can look like boredom, withdrawal and even lead to greater chances of drop out once in high school (Perry et al., 2018). This makes sense since student disengagement grows so much that chronic disengagement can reach as high as 60% by high school (Strom, 2014); therefore, solidifying implementation of CTE before high school can be beneficial. Overall, the

theories and models discussed in the literature encourage a curriculum that is supportive of and connected to student interests; motivation and student engagement is directly impacted, especially during adolescence, when learning opportunities focus on students' futures.

### **Implications for Key Stakeholders**

Current literature points in the direction of positivity when incorporating career education and exploration in seemingly any regard. However, why do so many districts struggle in providing this opportunity for students? There are several barriers that exist, making providing these meaningful learning opportunities more challenging than meeting the eye. Considering these barriers and benefits, several implications ought to be considered by administrators and teachers.

#### **Administrators**

The first barrier of which administrators ought to be aware is there is no *one-size-fits-all* approach to CTE or any other career education program (Cothron, 2019). Responsibility often falls on administration to seek implement or assign responsibility to other school personnel. This can be viewed as a barrier because career education is often thought of as everyone's - yet nobody's responsibility (Bogush, 2016). Typically, from administration, it falls on the guidance counselors to provide some sort of comprehensive career education program per state and federal requirement. Guidance counselors are great assets, and arguably hold a most important relationship in career education because they prepare students for experiences beyond the classroom (Soares et al., 2022). However, in many districts, there is too much emphasis placed on the counselor (Coogan, 2016). Nationally the counselor-to-student ratio is 1:491 (Association for Career and Technical Education, 2017). Hence, the United States already has a shortage of counselors to meet students' other academic, social, and emotional needs and are even more challenged to successfully implement career education programs with fidelity. Counselors cannot be the sole bearers of this responsibility.

Career education's role on instruction appears to be mostly beneficial. However, one rather large negative aspect has shown to be teachers' perspective regarding curriculum and content delivery (Bogush, 2016). Some teachers feel it is either not their responsibility or they are unprepared to deliver such content (Akos et al., 2011). Providing clear expectations, ongoing professional development (PD) and either time to plan or having access to a preplanned curriculum could help (Miles, 2019).

Considering successful partnerships and participation from all stakeholders associated within the school community, parental involvement is key in a successful career education program; parents and guardians are the biggest influencers on children's future career choices (Dortch, 2021). Multiple pathways for possible futures expand when there is shared leadership and collaboration within the school, family, and community (Rennie Center for Education Research and Policy, 2021). Partnerships between key stakeholders, including the community and local businesses, enhance learning. However, if these relationships do not exist, they can serve as a barrier. It would behoove administration to listen to and address these concerns, and educate all stakeholders on the topic, given the potential impact career relevance could have on instruction (Conti, 2014; Merkle, 2019).

### Teachers

For teachers, it may be uncomfortable to break from traditional methods or curricula guiding teaching that seemingly produce repeated success according to the state testing data. Teachers should be cognizant that career education and exploration enhances academic engagement (Montello, 2024). It is also important for districts to keep in mind that high scores on standardized tests do not prove that academic engagement is high. A shift in mindset and action towards these ideas will better help schools get the most out of CTE programs.

Montello's (2024) study, applying Piaget's Constructivist Theory echoes the theory's principle that the individual is at the center of learning, specifically knowledge creation and acquisition. Academic engagement proved to be high given the curriculum was student-centered, allowed for personal connections, and provided self-directed learning opportunities. Students pursued their interests, reflected, set goals, and made personal connections. As a result, less stress was associated with learning and academic engagement was heightened. This ties to Abbott's (2017) argument that philosophically, teaching ought to be geared towards students' passions, boost motivation, and assist in self-directed goal seeking. Curriculum is key in order to make learning purposeful and active to create a joy of learning; when that is the case, teachers find it more powerful as *life* is the classroom (Abbott, 2017).

Educators would benefit from knowing many studies found students' perceptions showed that middle schoolers demonstrate higher levels of academic engagement with the topic opposed to traditional drill-and-skill methods due to its meaningfulness. For example, Rodriguez et al. (2016) explored a CTE program, making an argument that whether students attend college or enter the workforce, similar skill sets are needed for success. Integrating certain skills into the academic setting can prove beneficial by providing students more real-world learning opportunities. Teachers may want to examine if current lesson plans allow students similar experiences, as a more positive classroom culture can better meet the needs of learners.

### Conclusion

CTE has a rich history in the United States and it has undergone many changes over the years in effort to keep teaching and learning relevant to with the times. Overall, CTE provides benefits when implemented at any level of education, elementary through postsecondary. These benefits include an increase in graduation rates, attendance, academic engagement, personal confidence, motivation, less stress, and more meaningful learning opportunities—regardless of the makeup of learner, school district, or economic status.

There is a need for the United States to continue providing students with career education and exploration learning opportunities. Federal law is in place to help drive that focus at both the middle and high school level which, coupled with CTE's impact on overall student engagement, strongly supports the implementation of early CTE programming. Several studies and theories support middle school as an ideal time for implementing CTE because of the developing self-realization and high self-exploration phase of growth so common during adolescence.

Implications for administrators and teachers include being aware of the benefits associated with CTE, as well as the barriers, in order to successfully implement a CTE program that benefits all students.



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