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Bridging the Skills Gap: A Design Thinking Mixed Methods Approach to Workforce Readiness

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

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Abstract

The persistent gap between high school graduates' academic preparation and workforce expectations represented a significant challenge for educational systems, employers, and students themselves. This mixed-methods study examined the efficacy of a design thinking-based career awareness and essential skills workshop in enhancing employability skills and career readiness among high school students. The researcher employed a comprehensive five-stage design thinking framework (empathize, define, ideate, prototype, test) to develop and evaluate a structured two-day workshop intervention targeting five critical employability domains: communication, collaboration, professionalism, critical thinking, and career exploration.

The study utilized a pre-post intervention design with 34 senior students in an urban public high school, along with 24 teachers, 28 industry professionals, and 12 worksite directors. Data collection encompassed multiple quantitative measures (student self-assessment surveys, structured observation protocols, teacher assessment questionnaires, and industry mentor evaluations) and qualitative approaches (semi-structured interviews, focus groups, and reflective journals). The assessment instrument demonstrated strong internal reliability (Cronbach's $\alpha = 0.87$ for pre-test, 0.89 for post-test).

Statistical analysis revealed statistically significant improvements across all of the measured employability skill domains ($p < .001$), with effect sizes ranging from moderate to large ($d = 0.68$ to $d = 1.12$). The largest gains were observed in career awareness ($M = 2.86$ to 4.31, $d = 1.12$) and professionalism ($M = 3.38$ to 4.42, $d = 0.91$), followed by communication skills ($M = 3.24$ to 4.18, $d = 0.85$). Teacher observations corroborated the

students' self-reported gains, with substantial increases in observable employability behaviors, particularly in appropriate attire selection (+37.4%), eye contact maintenance (+35.4%), and articulate communication (+30.6%). Industry mentor evaluations provided external validation, rating students most favorably in professional attitude (M = 4.27) and communication initiative (M = 3.98).

Qualitative analysis revealed three primary themes related to employability skill development: enhanced communication confidence, strengthened teamwork capabilities, and enhanced professional behaviors. Career awareness analysis identified expanded career horizons among the students, enhanced understanding of the workplace realities, and personalized career alignment as key outcomes. Post-workshop behavioral indicators demonstrated sustained impact, with 87.3% of participants initiating specific career exploration activities within two weeks of completion.

The findings indicated substantially significant differences between pre- and post-workshop measures, which demonstrated that students who attended the career awareness and job readiness workshop showed meaningful improvements in both employability skills and career readiness. The workshop's effectiveness was attributed to five key elements: structured mentor-student engagement, authentic skill application opportunities, industry and curriculum alignment, comprehensive skill integration, and an efficient intervention format. The study provides empirical evidence for the value of design thinking methodology in addressing complex educational challenges, offering a replicable model for bridging the gap between academic preparation and workforce expectations.

The results have significant implications for educational practice, which suggested that relatively brief but carefully structured career awareness workshops can yield substantial benefits for students' career preparation without extensive curriculum overhauls or schedule disruptions. The research contributed to the limited literature on effective interventions for enhancing high school students' career readiness and provides a foundation for future investigations into design thinking applications in educational settings. In closing, the researcher sought to address the lack of employability skills and career readiness among high school students from underprivileged schools by providing an overview of the topic, outlining key terms, and describing the specific environment(s) in which the problem occurred. The doctoral student researcher then reported limitations with the study, which included challenges with generalizability and self-reported data in attention to the potential biases of the researchers, due to confirmation bias and selection bias. To correct biases in research, the study incorporated triangulation by using multiple data sources and methods, ensuring a balanced perspective. Additionally, reflexivity was practiced by acknowledging the researcher's positionality and implementing strategies, such as peer debriefing and member checking to enhance objectivity.

Keywords: career awareness, job readiness, design thinking, employability skills, high school education, workforce preparation, mixed-methods research.

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Chapter One: Introduction

Position of Problem of Practice

In recent years, the transition from high school to the workforce has proved increasingly challenging for graduates, particularly those who matriculated from underrepresented educational institutions across the United States. The complexity of this transition has been compounded by workplace expectations that have greatly evolved and technological advancements that have fundamentally altered the nature of contemporary employment opportunities (Coolberth, 2023). A growing body of scholarly literature highlighted persistent concerns surrounding the limited employability skills demonstrated by high school graduates as they attempted to enter competitive job markets (Barnes, 2022). The concerns have been particularly pronounced in urban and rural communities where educational resources remain constrained and career exploration opportunities were limited. The disconnect between high school preparation and workforce requirements created a persistent gap that has been pronounced as not only individual career prospects, but also broader economic development initiatives within communities. This educational-to-employment pipeline disruption became a critical policy concern for educational leaders, workforce development professionals, and community stakeholders who recognized the long-term implications of inadequate career preparation (Krishnamoorthy & Keating, 2021; National Association of Colleges and Employers [NACE], 2023; Ng et al., 2005).

Industry professionals across diverse sectors repeatedly identified major deficiencies in critical workplace competencies among recent high school graduates, which included time management, conflict resolution, punctuality, positive decision-

making, resilience, and demonstration of strong work ethic (Börner et al., 2018). These fundamental skills that were noted served as essential building blocks for success across multiple career pathways, yet many graduates found themselves inadequately prepared to meet the evolving expectations of potential employers in the increasingly competitive marketplace (Börner et al., 2018). The skills deficit was particularly evident in entry-level positions that required immediate application of professional competencies and adaptive problem-solving capabilities (Doherty-Restrepo et al., 2023). Employers noted that many recent graduates struggled with basic workplace communication, collaborative teamwork expectations, and the ability to navigate professional relationships effectively (Doherty-Restrepo et al., 2023; Hansen, 2021). Additionally, the rapid pace of technological change created new skill requirements that traditional educational approaches were seemingly slow to address, which left many students unprepared for digital workplace environments (Jimenez, 2020). The persistence of these skill gaps contributed to increased training costs for employers and reduced productivity during new employee orientation periods.

Employers were increasingly vocal about the challenges involved in filling vacancies with qualified candidates. Many of the employers attributed the difficulties to the graduates' shortcomings in essential employability skills (Ng et al., 2005). For instance, a survey conducted by researchers at the National Association of Colleges and Employers (NACE, 2023) revealed that 60% of employers perceived that the recent graduates were poorly equipped with critical thinking and interpersonal skills23). The gap not only hampered individual job prospects but also posed a substantial obstacle to workforce development and economic growth. The ramifications of the skills deficiency

were especially pronounced in economically disadvantaged communities, where access to quality career awareness initiatives remained limited (Peng & Yue, 2022).

Despite the growing concerns, the persistent and growing issue of high school graduates entering the workforce with limited employability skills was a multifaceted challenge deeply embedded in systemic factors (Jimenez, 2020; Jacobson, 2017). Employability skills, which encompassed communication, problem-solving, teamwork, adaptability, and professionalism, had been critical for career readiness. However, systemic barriers, such as curriculum gaps, inequitable access to career exposure, and insufficient work-based learning opportunities hindered many students from acquiring those essential skills (Hummel & Hummel, 2024).

This persistent disconnect between traditional academic instruction methodologies and practical workforce preparation requirements has contributed to a widening skills gap that has negatively affected both individual students' long-term career success potential and broader regional economic development initiatives (Symonds, Schwartz, & Ferguson, 2011). Consequently, many underrepresented schools lacked sufficient resources to provide students with robust career awareness initiatives, which rendered the students ill-prepared to navigate the complexities of the job market (Krishnamoorthy & Keating, 2021). For instance, only 30% of high schools in lower-income areas offered career guidance programs compared to 70% in higher-income neighborhoods (Gewertz, 2022). Disparities like the ones mentioned underscored the urgent need for more targeted interventions aimed at bridging the employability skills gap and enhancing career awareness among students. In addition to the lack of career guidance, socially disadvantaged schools struggled to provide comprehensive exposure to

various career paths and essential skills needed for successful career transitions (Jacobson, 2017). Students often missed out on workshops, mentorship opportunities, and networking events that could help the students gain insight into different professions. As a result, the students faced significant challenges when attempting to enter the workforce after graduation (Börner et al., 2018). The doctoral student researcher noticed how situations similar to the above highlighted a critical issue; which was that the same inequities that were present in our educational systems also directly impacted the future employment prospects of students from underrepresented backgrounds (Jacobson, 2017).

Consequently, the resulting tension often led to career development programming being relegated to secondary status within school priorities, despite growing evidence of its critical importance for student success. Furthermore, the lack of systematic career readiness programming has perpetuated cycles of economic disadvantage within communities where schools serve as primary vehicles for social and economic mobility (Barnes, 2022). The lack of resources afforded to some schools meant that some of the essential information and support required to explore career options were not readily available, which further perpetuated cycles of limited post-secondary readiness, reduced employability, and generational economic disadvantage among underserved student populations (Thompson, 2021; Lerman, 1996). Consequently, disparities in career awareness became increasingly clear (Thompson, 2021), that systemic changes were necessary to ensure equitable access to career awareness initiatives, these changes would better equip all students with the knowledge and skills required to thrive in an evolving job market (Barnes, 2022). Urgent collaboration between educational institutions, local businesses, and community organizations emerged as a pivotal strategy to address the

gaps and provide students with the support needed to succeed post-graduation (Hansen, 2021).

Overview of the Problem Encountered

Schools today face the dual responsibility of meeting rigorous academic learning goals while simultaneously preparing students for success beyond graduation. This preparation includes fostering career awareness and developing essential employability skills, such as communication, adaptability, and problem-solving — skills that are increasingly vital in today's dynamic and competitive workforce (Cook-Deegan, 2022). However, balancing these priorities has proven to be a significant challenge, particularly in under-resourced schools where financial limitations, staffing shortages, and competing curricular demands often hinder the implementation of comprehensive career readiness programs Irwin et al. (2022) of the National Center for Education Statistics [NCES]. As a result, many students, especially those in low-income communities, graduate without the guidance or experiences needed to make informed post-secondary decisions (Belasco, 2013). This persistent disconnect between traditional academic instruction methodologies and practical workforce preparation requirements contributed to a widening skills gap that negatively affects both students' long-term success potential and the broader economy and regional economic development issues as a whole (Symonds et al., 2011). The ramifications of inadequate career preparation have extended beyond individual students to impact entire communities, as local employers have struggled to find qualified candidates for available positions while recent graduates have experienced extended periods of unemployment or underemployment. Educational institutions have found themselves caught between conflicting demands: meeting state-mandated academic

performance standards while addressing the practical career readiness needs that students require for successful post-graduation transitions (Symonds et al., 2011).

Limited Time in the School Day. Educational institutions have long struggled to balance rigorous academic learning objectives with the growing need to prepare students for the demands of the workforce through career awareness and employability skill development. According to Symonds, Schwartz, and Ferguson (2011), the traditional high school curriculum has historically emphasized core academic subjects, often at the expense of career preparation initiatives. The emphasis on academic initiatives consistently left limited time and resources for experiential learning opportunities, such as job shadowing, industry tours, career workshops, or the intentional teaching of employability skills (Hummel & Hummel, 2024). As a result, many students graduated without foundational workplace competencies, which included communication, teamwork, adaptability, and problem-solving — skills were critical for post-secondary and professional success (Robles, 2012). The lack of integration between academic instruction and career readiness not only hindered students' preparedness for the workforce but also contributed to a widening skill gap that employers continued to report as a significant concern.

Educational administrators have frequently expressed frustration with the competing demands placed upon their institutions, as pressure to improve standardized test scores often conflicted with desires to implement comprehensive career development programming (Symonds et al., 2011). This resulted in prioritization of measurable academic outcomes over holistic student development, which has created systemic barriers to career readiness implementation, particularly in schools serving economically

disadvantaged populations where students may have limited exposure to professional environments outside of school (Chiancone, 2024). Additionally, the rigid scheduling constraints inherent in traditional educational structures have made it challenging to implement flexible, project-based learning approaches that could simultaneously address academic standards and workforce preparation objectives (Association for Career and Technical Education [ACTE], 2023). The cumulative impact of these structural limitations was pronounced for students from underrepresented backgrounds who may depend most heavily on school-based programming for career exploration and professional skill development opportunities (ACTE, 2019; Chiancone, 2024).

Career Awareness Activities competing with Learning Objectives. Additionally, career awareness programs and authentic workplace preparation initiatives frequently competed with core academic instruction for limited time and resources within the school day. High-stakes testing requirements and rigid curriculum standards often relegated career exploration initiatives to a secondary status, which further reduced the presence of career-focused initiatives in both classroom instruction and school-wide programming (Gordon, 2021). The prioritization of standardized academic performance over holistic student development created significant barriers when attempting to implement robust career readiness initiatives. As a result, students in under resourced schools had few opportunities to participate in meaningful career exploration activities that could help them understand their options and make informed post-secondary decisions (Jacobson, 2017). The absence of these opportunities contributed to uncertainty about future pathways and hindered students' abilities to envision a clear direction after graduation.

Limited Career Resources. Along with competing time constraints career awareness initiatives often faced financial obstacles. Underfunded schools often lacked the resources needed to implement robust career readiness initiatives. According to the Irwin et al. (2022) from the National Center for Education Statistics, schools in low-income areas had fewer counselors, outdated technology, and limited access to industry partnerships, all of which were essential for effective career planning and employability skill development. The researcher believed without these valuable resources; the students were deprived of critical support needed to navigate their career pathways.

Lack of Career Awareness and Exposure Programs. The limited funding and competing priorities resulted in limited career exposure for many students (McCarthy, 2014). Exposure to diverse career options was essential for helping students identify their interests and strengths (Matters & Matters, 2024). However, underprivileged schools frequently lacked structured programs such as internships, mentorships, and industry tours (Jacobson, 2017). The members of the Association for Career and Technical Education (ACTE, 2023) highlighted how career exposure opportunities not only enhanced the students' understanding of potential career paths but also increased the students' motivations to succeed academically. The absence of these programs left students with limited insight into the wide breadth of career opportunities available to them.

Vacancies and Difficulties Finding Skilled Employees. Employers consistently reported challenges in finding candidates with the necessary employability skills. According to the National Association of Colleges and Employers (NACE, 2021), essential skills, such as reliability, adaptability, and critical thinking were among the most

sought-after traits in entry-level employees, yet those traits were often lacking in recent high school graduates (Li, 2022). This skills gap contributed to unfilled job vacancies and limits economic growth (Levesque, 2019).

Limited Career Planning Options. Career planning services, such as one-on-one counseling, aptitude testing, and career workshops, were often scarce in underprivileged schools, due to limited funding and staffing constraints (Keijzer et al., 2021). Belasco (2013) emphasized that individualized career counseling was a critical element in effective post-secondary planning, as it helped students align their interests and abilities with future educational or vocational pathways (Sanders et al., 2017). However, many schools serving low-income communities lacked the necessary resources to offer these personalized services on a consistent basis Barnes, 2022; NCES, 2022). Without adequate guidance, students were frequently left to navigate complex career decisions on their own, often with minimal knowledge or exposure (Keijzer et al., 2021). Consequently, many graduated without a clear understanding of interests, strengths, or long-term goals, which further contributed to the persistent skills and opportunity gaps (Fletcher & Tyson, 2017; Khaund, 2024; Symonds et al.; Schwartz, & Ferguson, 2011).

Limited Funds to Support Career Awareness and Employability Skills Initiatives. Financial constraints further exacerbated the systemic challenges faced by underprivileged schools, particularly in efforts to provide comprehensive career readiness programs (Astuti et al., 2020, Jacobson, 2017). Federal and state funding allocated for career and technical education (CTE) programs was often insufficient to meet the diverse and growing needs of low-income schools (Carl D. Perkins Career and Technical Education Act, 2018). As a result, many schools lacked the infrastructure, trained

personnel, and resources needed to develop and sustain initiatives that support employability skills and workforce preparation (Hansen, 2021). According to the Association for Career and Technical Education (ACTE, 2023), limited funding not only restricted student access to high-quality equipment and industry experiences but also reduced opportunities for meaningful engagement with potential employers (Levesque, 2019). Many times, these financial limitations left students at a disadvantage, unable to fully explore or prepare for career pathways that aligned with their interests and the evolving labor market (Barnes, 2022).

Consequences of the Problem

Preparing students for life after high school requires more than academic instruction; life preparation also involves equipping students with the knowledge, skills, and guidance needed to navigate post-secondary pathways and future careers (A. P. Carnevale et al., 2022). However, many students — particularly those in under-resourced communities —graduated without a clear understanding of their strengths, interests, or available opportunities (Fletcher & Tyson, 2017), unfortunately this phenomenon continues to occur today (Hansen, 2021). According to the Kleine (2022), students in high-poverty schools have reduced access to school counselors and career planning resources, which impairs their ability to develop informed post-secondary plans. The lack of career awareness, exposure to workforce opportunities, and individualized guidance often left students uncertain and unprepared for the demands of adulthood (Kleine et al., 2022). In many cases, the absence of structured career development in high school leads to long-term challenges, such as increased rates of unemployment, underemployment, and economic instability (Astuti et al., 2020). This is particularly concerning for

communities experiencing intergenerational poverty, where schools are expected to serve as vital bridges to economic mobility (Christopher & Daniel, 2022). Addressing these gaps in career readiness is essential to ensuring equitable outcomes for all students, regardless of socioeconomic status (Bradley, 2022).

Graduating Without a Clear Plan. Consequently, students who lacked career readiness and employability skills often graduated without a clear plan for their future (Fadhil et al., 2021). The lack of preparation often left the students unprepared to transition into college, vocational training, or the workforce (Bradley, 2022). This uncertainty often contributed to increased rates of unemployment and underemployment, particularly among students from under-resourced communities (Astuti et al., 2020; Bradley, 2022). Without early exposure to career exploration, soft skills training, and structured post-secondary planning, many students struggled to identify viable paths that align with their interests and strengths. According to Ascione (2024), individuals without clear career direction or post-secondary credentials are at higher risk of being trapped in low-wage, unstable employment. This lack of preparation often perpetuates a cycle of poverty, especially for students from marginalized backgrounds who rely on school-based support to navigate their futures (Bradley, 2022). The absence of career planning resources disproportionately aligned students attending high-poverty schools, which limited student access to information and mentorship that could support long-term success (Chiancone, 2024). As a result, the post-graduation outlook for these students remains uncertain and inequitable (Börner et al., 2018).

Limited Insight into Interests, Strengths, and Career Paths. Without exposure to diverse career options and individualized planning, students often struggled to identify

their personal interests, strengths, and potential career pathways (Bradley, 2022). This lack of career exploration limited the students' abilities to develop self-awareness, which was a key component in making informed, confident decisions about the future (Jimmez, 2020). Consequently, in many under-resourced schools, career development opportunities such as interest inventories, aptitude assessments, and mentorship programs were either limited or entirely absent, further widening the opportunity gap (Bradley, 2022). As a result, students frequently approached graduation without a clear understanding of post-secondary options, which often led to indecision or disengagement from the workforce or higher education (Börner et al., 2018). The absence of structured career guidance perpetuated the growing skills gap between what students had and what employers required, ultimately hindering students' long-term potential for economic mobility and success (Hazan et al., 2024). Supporting students in discovering their individual talents and connecting them to viable career paths will prove essential for creating equitable educational and workforce outcomes.

Framework for Addressing the Problem

The persistent socioeconomic disparities in certain regions across the United States have contributed to wide gaps in educational and workforce outcomes for students from historically underserved communities. One such area is the Metro East region of Illinois, which included The City of Champions, Commanche, DuPont, and Brookside (the names of the cities have been changed for confidentiality purposes; however, the data presented below is consistent for the actual cities whose names were changed in an effort to respect privacy rights). This region experienced decades of economic distress, high poverty rates, and limited access to educational and career development resources

(Cahokia, IL | Data USA, n.d.). These conditions have had far-reaching implications for the youth in these communities, especially in terms of academic performance, graduation rates, and career readiness. As schools in the area contend with underfunding, staffing challenges, and outdated infrastructures, students were often left without adequate support to transition into meaningful post-secondary opportunities (Spence & Espinoza, 2023). The following section examined the educational and economic conditions in the Metro East region, focusing on key high schools and the barriers that hindered students' post-graduation success.

Educational and Workforce Challenges in the Metro East Region

The Metro East region of Illinois, which encompassed The City of Champions, Commanche, DuPont, and Brookside, have faced persistent socioeconomic challenges that have directly challenged educational outcomes, employment opportunities, and workforce readiness. The combination of economic distress, underfunded schools, and limited career awareness programs contributed to a cycle of unemployment and underemployment among recent high school graduates in the region, at the time of this report *(U.S. Census Bureau QuickFacts, n.d.)*.

Demographics and Economic Overview

The population of The City of Champions has experienced a long-standing economic downturn, reflected in its population of approximately 18,800 residents and a median household income of $28,519 in 2022, an increase from $26,011 in 2021 (U.S. Census Bureau, 2023). However, despite the slight improvement, poverty remained a significant issue, with 32.8% of residents living below the poverty line (Data USA, 2023). In contrast, citizens in the St. Clair County, which included The City of

Champions, had a higher median household income of $63,017 and a lower unemployment rate of 4% in 2023 (Data Commons, 2023). These figures highlighted the stark economic disparities between The City of Champions and surrounding areas.

Similarly, in Commanche, Illinois, a neighboring community, residents reported a median household income of approximately $30,000, which was significantly lower than the state average of $63,000 (*U.S. Census Bureau QuickFacts*, n.d.). Individuals who lived in Commanche struggled with an unemployment rate exceeding 10%, making the city one of the more economically disadvantaged areas in the Metro East region (U.S. Department of Education, 2023). These economic challenges have had direct implications for the quality of education and workforce opportunities available to students.

Educational Institutions: Commanche and The City of Champions High Schools

Commanche High School served approximately 783 students, with a student-teacher ratio of 16:1 (*CAHOKIA HIGH SCHOOL | School Snapshot*, n.d.). The administrators in the school have consistently reported low academic performance, with only 6% to 9% of students demonstrating proficiency in mathematics and 5% or fewer proficient in reading (U.S. Census Data et al., n.d.). Additionally, Commanche High School's graduation rate ranged between 60% and 64%, significantly below the state average of 83% (Public School Review, 2023).

The City of Champions Senior High School, one of the largest high schools in the area, has also faced substantial challenges. With an enrollment of approximately 1,299 students and a student-teacher ratio of 16:1, the school reported a graduation rate of 71%, which was below the Illinois state average of 86% (ProPublica, 2023). Furthermore, only

one percent of students were proficient in mathematics, which indicated severe academic deficiencies. Teacher turnover and absenteeism have also contributed to the school's struggles, with 24% of teachers classified as inexperienced and 30% reported as chronically absent (ProPublica, 2023).

Resource Limitations in Schools

Both Commanche High School and The City of Champions High School have struggled with significant resource constraints. Due to the high levels of poverty in the region, schools received limited funding, which restricted the availability of advanced coursework, extracurricular activities, and career counseling services. In the City of Champions, 99% of students qualified for free or reduced-price lunch, which highlighted the economic hardship faced by families in the district (ProPublica, 2023). Similarly, Commanche High School struggled with securing adequate resources for students, due to low local funding and high unemployment rates in the area (U.S. Department of Education, 2023).

Employment Outcomes and Barriers for Graduates

The doctoral scholar researcher noted how limited data existed on the employment rates of recent graduates from these high schools. However, broader trends indicated that economic hardship, insufficient career preparation, and the absence of robust workforce development programs have contributed to high unemployment among recent high school graduates. In the scholar researcher's experience, many young adults lacked access to structured career pathways, mentorship programs, or job shadowing opportunities, which placed the students at a disadvantage in an already competitive labor market.

Barriers to Employability

Several key factors have contributed to the limited employability of high school graduates in the Metro East region:

Limited Career Awareness and Planning

Many schools in the region lack comprehensive career guidance programs, which left students without exposure to diverse career pathways. Without structured career planning resources, students struggled to make informed decisions about their futures (U.S. Department of Education, 2023).

Resource Constraints in Schools

Due to insufficient funding, many schools could not provide adequate career counseling, technical education, or hands-on training. This lack of investment led to a gap in employability skills among graduates (ProPublica, 2023).

Economic Barriers and Job Market Limitations

Many students graduated into an economy where job opportunities were scarce, especially for those without post-secondary education or specialized skills. The high unemployment rates in Commanche and The City of Champions further exacerbated the difficulty of securing stable employment (Data Commons, 2023).

Implications for Workforce Readiness

The lack of employability skills among high school graduates in the Metro East region has raised concerns among local employers. Business leaders have cited deficiencies in both technical competencies and essential employability skills, such as communication, teamwork, and problem-solving (Hansen, 2021). Without targeted interventions, such as increased career counseling, job training programs, and

partnerships between schools and industries, the workforce will continue to face challenges in meeting employer demands (Data USA, 2023).

Addressing Limited Career Exposure: A Doctoral Research Study

The doctoral student researcher conducted a study to address the persistent challenges of limited career exposure among high school students in under-resourced communities, specifically within the Metro East region, some of which included The City of Champions, Commanche, and Brookside, Illinois. The study aimed to explore career awareness interventions and students' workforce readiness, career planning, and post-secondary decision-making. Given the well-documented disparities in career exploration resources, particularly in economically disadvantaged school districts, the researcher sought to implement a structured intervention that would provide students with meaningful exposure to career pathways through career awareness workshops, industry collaborations, and experiential learning opportunities (Gupta et al., 2020).

Research Questions & Hypothesis

The doctoral research student employed a mixed-methods study to answer the following research questions and null hypothesis statement. The mixed methodological approach integrated both quantitative and qualitative data collection and analysis to provide a comprehensive understanding of career awareness interventions and students' workforce readiness and career planning. The quantitative component involved survey instruments measuring students' career decision-making self-efficacy and employability skill development before and after participation in career awareness workshops. The qualitative component included semi-structured interviews and focus groups with students, educators, and industry partners to explore their perceptions of career exposure

initiatives and workforce preparedness. This methodological triangulation enhanced the validity of the findings by capturing both statistical trends and in-depth insights into participants' experiences.

Research Question 1: To what extent does participation in career awareness workshops influence high school students' career decision-making self-efficacy?

Research Question 2: How might industry-school collaboration enhance students' perceptions of workforce readiness and career opportunities?

The study tested the following hypotheses:

H_0 (Null Hypothesis): Participation in career awareness workshops and industry collaborations does not significantly improve students' career decision-making self-efficacy or perceptions of workforce readiness.

H_1 (Alternative Hypothesis): Participation in career awareness workshops and industry collaborations significantly improves students' career decision-making self-efficacy and perceptions of workforce readiness.

Definition of Key Terms

1. *Apprenticeship* – A work-based training program that combines classroom instruction with paid, on-the-job learning under the supervision of skilled professionals. Apprenticeships typically lead to industry-recognized credentials or certifications (Kreamer, 2022).

2. *Career and Technical Education (CTE)* – A form of education that integrates academic learning with technical skills training to prepare students for careers in various industries. CTE programs focus on industry-specific skills and provide students with

hands-on experience in fields such as healthcare, information technology, skilled trades, and business (Dougherty & Lombardi, 2016).

3. *Career Awarene*ss – The process of acquiring knowledge about various occupations, job requirements, and career pathways. Career awareness involves exposure to industry expectations, workforce trends, and employability skills necessary for career success (Matters & Matters, 2024).

4. *Career Decision-Making Self-Efficacy* – A student's confidence in their ability to make informed career choices and successfully navigate post-secondary planning. Higher levels of career decision-making self-efficacy are associated with proactive career exploration and goal-setting behaviors (Solberg et al., 2002).

5. *Career Exposure* – Activities and experiences that introduce students to various career fields, industry professionals, and workplace environments. Career exposure opportunities include career fairs, industry tours, guest speakers, and mentorship programs (Blustein et al., 2019).

6. *Career Pathways* – A structured sequence of academic and technical courses that prepare students for careers in high-demand industries. Career pathways help students transition from high school to post-secondary education, apprenticeships, or employment (Solberg et al., 2021).

7. *Economic Mobility* – The ability of individuals to improve their economic status through education, career advancement, and workforce participation. Career education plays a critical role in promoting economic mobility by equipping students with the skills needed for high-wage employment (Blustein et al., 2019).

8. *Employability Skills* – A set of foundational soft and technical skills that increase an individual's ability to obtain and retain employment. These include communication, teamwork, problem-solving, adaptability, professionalism, and time management (Blustein et al., 2019).

9. *Experiential Learning* – A hands-on approach to education that allows students to apply academic concepts in real-world settings through activities such as service-learning projects, simulations, and industry partnerships (Blustein et al., 2019).

10. *Industry Credentials* – Certifications or licenses awarded to individuals who demonstrate proficiency in a particular trade or profession. Industry credentials validate job-specific skills and enhance employability by aligning student training with workforce demands (Kreamer, 2022).

11. *Internship* – A structured work experience that allows students to gain practical skills and industry exposure in a professional setting. Internships may be paid or unpaid and serve as a bridge between education and employment (Dougherty & Lombardi, 2016).

12. *Job Shadowing* – A short-term career exploration activity in which students observe professionals in their workplace to gain insights into job responsibilities, work environments, and industry expectations (Solberg et al., 2021).

13. *Labor Market Demand* – The need for workers in specific industries or occupations based on economic trends, job growth, and employer requirements. Labor market demand influences career education and training priorities (Solberg et al., 2002).

14. *Post-Secondary Planning* – The structured process of preparing for education, training, or career pathways after high school. This includes college selection, career and

technical education (CTE) enrollment, apprenticeships, military service, or direct workforce entry (Lapan et al., 2017).

15. *Skills Gap* – The discrepancy between the skills employers seek in job candidates and the skills that job seekers possess. Addressing the skills gap involves enhancing education, training, and workforce alignment to meet industry needs (Kreamer, 2022).

16. *Soft Skills* – Non-technical, interpersonal skills that contribute to workplace success, such as communication, adaptability, teamwork, emotional intelligence, and conflict resolution (Perry & Wallace, 2020).

17. *Technical Skills* – Job-specific abilities acquired through education, training, or work experience. Technical skills vary by industry and are often required for careers in healthcare, engineering, manufacturing, and information technology (Lapan et al., 2017).

18. *Work-Based Learning (WBL)* – An educational approach that integrates real-world work experiences with classroom instruction. WBL experiences include internships, apprenticeships, job shadowing, and cooperative education programs designed to enhance career readiness (Perry & Wallace, 2020).

19. *Workforce Development Programs* – Initiatives designed to prepare individuals for employment by providing skill development, job training, and career counseling services. Workforce development programs often involve partnerships between schools, employers, and community organizations (Dougherty & Lombardi, 2016).

20. *Workforce Readiness* – The extent to which individuals possess the necessary knowledge, skills, and behaviors to succeed in the labor market. Workforce readiness

includes both technical job competencies and essential employability skills (Lapan et al., 2017).

Limitations / Research Bias

While the study provided valuable insights into the benefits of career awareness interventions, the following limitations must be acknowledged. First, the research was conducted within a limited geographic area, focusing on the Metro East area consisting of The City of Champions, Commanche, and Brookside, Illinois. As a result, the findings may not be fully generalizable to other regions with different socioeconomic conditions, educational infrastructures, or workforce demands. Future studies should examine career awareness interventions in diverse settings to assess broader applicability.

Additionally, the study relied on self-reported data from students, educators, and industry partners. While this approach provided rich qualitative insights, the data allowed for potential biases related to participants' perceptions, expectations, and individual experiences. Some students may have overestimated or underestimated their career preparedness, while industry partners may have reported workforce concerns based on organizational needs rather than objective labor market data. Incorporating longitudinal tracking of student outcomes could provide a more comprehensive understanding of the intervention's long-term impact.

Another limitation involved the availability of industry partnerships. While the study successfully established collaborations with local businesses and organizations, resource constraints and logistical challenges limited the extent to which students could participate in hands-on experiences. Expanding industry partnerships and securing

additional funding for career exposure initiatives would enhance the sustainability and scalability of such interventions.

Summary

Chapter One established the foundation for exploring the persistent lack of employability skills and career readiness among high school students in under-resourced school settings. The chapter introduced the problem of practice, defined key concepts, and provided a contextual background highlighting the inequities and student preparedness for postsecondary success. The significance of the study was presented with a focus on addressing the skills gap and improving outcomes for underserved populations.

Limitations were acknowledged, which included potential challenges with generalizability and reliance on self-reported data. To strengthen the study's validity, strategies such as triangulation, reflexivity, and member checking were incorporated to mitigate researcher bias and ensure credibility. The researcher's positionality was also addressed to maintain transparency and rigor throughout the study.

This chapter concluded by outlining the framework that guides the study and setting the stage for a comprehensive review of the existing literature. Chapter Two will delve into the relevant research on employability skills, career readiness, and effective strategies to support students in navigating their postsecondary pathways.

Chapter Two: Literature Review

The mismatch between the skills and qualifications sought by employers and those possessed by graduates emerged as a growing concern for industry, academia, and the economy as a whole (Deming, 2018). Recent studies indicated that the demand for higher-level skills increased, as the proportion of jobs requiring a bachelor's degree or higher rose significantly following the Great Recession (Thier, 2023). To meet the evolving demands of the job market, graduates were required to have specialized knowledge and skills that extended beyond high school preparation (Hundrev, 2024). The results of the 2022 student survey conducted by members of the National Association of Colleges and Employers demonstrated a clear correlation between career service utilization and job offers for graduating college seniors (Van Derziel, 2022). Students who accessed at least one career service received an average of 1.24 job offers, with each additional service used increasing the average by 0.05, compared to 1.0 job offer for individuals who did not use any services (Astuti et al., 2020).

Although many sought-after positions required advanced degrees, the demand for specific vocational and technical skills continued to grow (Thier, 2023). However, access to the training and support necessary to acquire these in-demand competencies remained limited, particularly for students from disadvantaged backgrounds (Keijzer et al., 2021). Consequently, the disparity in skill development perpetuated employment and wage gaps, restricted social mobility, and hindered broader economic progress (Osmani et al., 2019).

Intergenerational Mobility

Intergenerational mobility encompassed various changes within a family unit; changes included fluctuations in income, wealth, education, and health, which reflected

shifts across generations (Pulliam & Reeves, 2019). Researchers analyzed these shifts both in absolute terms — whether individuals improved upon their parents' status — and in relative terms, by comparing the socioeconomic outcomes of children directly to their parents' standing (Mazumder, 2022). Assessment results highlighted the dynamic factors influencing social and economic progress over generations. Chetty et al. (2023) presented data revealing that 34% of children born into the lowest income quintile remained there as adults, significantly exceeding the ideal 20% rate in a perfectly mobile society. Their findings also highlighted racial disparities, as Caucasian children were 45% more likely than their peers to remain poor (29% vs. 20%) and over twice as likely to remain wealthy (41% vs. 20%), this data underscored substantial mobility gaps (Pulliam & Reeves, 2019). Outcomes for African American children, however, differed markedly from those of Caucasian children (Henry et al., 2020). Pulliam and Reeves (2019) found that African American children born into the lowest quintile remained there as adults at a rate of 17%, nearly double that of poor Caucasian children (Chetty, 2023). African American children from the top income quintile were two percentage points less likely to remain there than random chance would predict, which contrasted with the glass floor that preserved Caucasian children's socioeconomic status at the top (Mazumder, 2022; Pulliam & Reeves, 2019).

Bridging the Skills Gap

Reducing the skills gap proved essential to ensuring that high school graduates were well-prepared to contribute to business success and the broader economy (Gupta et al., 2020). Professional educators implemented strategies that fostered collaboration among educational institutions, policymakers, and industry leaders to address the

mismatch between employer needs and graduates' skills (Hansen, 2021). Moreover, professionals who aligned curricula and training programs with evolving job market demands effectively empowered students from diverse backgrounds and ensured they acquired the specialized knowledge and versatile skills necessary for career success and economic growth (Li, 2022).

Several researchers emphasized the importance of aligning educational programs with industry demands to address skill discrepancies (Gupta et al., 2020). Vocational students who received industry-aligned training exhibited higher employability and made substantial contributions to economic progress (Khaund, 2024). Strengthened partnerships between academic institutions and industries enhanced the responsiveness of educational environments, promoted targeted skill development, and integrated work-based learning opportunities and lifelong training to prepare the workforce for a dynamic global economy (Dogara et al., 2020). These initiatives ensured that all students, including those from disadvantaged backgrounds, gained access to essential training and support (Li, 2022).

Overview of the Skills Gap

Addressing the mismatch between the skills acquired by students and employers' expectations required stakeholders to understand both perspectives (Li, 2022). Rizwan et al. (2021) administered targeted questionnaires to employers and students to investigate this issue. Their's (2021) findings revealed significant differences in perceptions between the two groups, highlighting the need for collaboration among universities, employers, and students to bridge the talent gap and align educational outcomes with workforce requirements (Mahmud & Wong, 2022; Rizwan et al., 2021).

The skills gap remained a pressing global concern for businesses and policymakers (Gupta et al., 2020). The gap represented a disconnect between the skills employers demanded and those possessed by individuals in the workforce (Coursera, 2024). It manifested in various forms, including shortages in technical skills, such as coding and data analysis, and deficits in essential employability skills, such as communication and problem-solving (Mahmud & Wong, 2022). These challenges underscored the importance of targeted strategies to close the gap and prepare students to meet evolving job market needs.

The Skills Gap Defined

The concept of the skills gap encapsulated a critical disconnect between the qualifications required for available jobs and those possessed by potential candidates (Börner et al., 2018). Lovelace (as cited in Waltower, 2023), former president of CareerBuilder's talent acquisition solutions, described the skills gap as the disparity between the professional expertise necessary for a role and the competencies job seekers possessed. Coursera (2024) similarly defined the gap as the mismatch between the skills demanded by specific roles and those available in the labor market. Salemi, a career expert with Monster, equated the skills gap to a form of labor shortage, emphasizing its impact on workforce availability (as cited in Waltower, 2023).

Concerns regarding the skills gap had long preoccupied human resources professionals and business leaders (Börner et al., 2018; Perna, 2023). Historically, the skills required for many jobs remained relatively stable; however, rapid advancements in technology, globalization, and shifting market demands significantly altered workplace expectations in recent years (Overcoming, 2024). According Olugbemiga, (2020), the

global labor shortage became a pressing issue, as the U.S. economy required an additional 4.6 million workers annually to maintain existing levels of supply, demand, and productivity. Additionally, the OECD (2019) characterized the skills gap as the discrepancy between employers' desired competencies and those available in the labor market, a challenge exacerbated by inadequacies in education and training systems in conjunction with evolving industry needs.

Throughout the 2020s, the skills gap grew increasingly prominent, which led to economic challenges such as prolonged job vacancies, reduced productivity, and slowed economic growth (MBA Skool Team, 2024). Addressing these disparities required a comprehensive strategy, which included upskilling and reskilling initiatives, strengthened collaboration between educational institutions and industry leaders, and the promotion of lifelong learning programs (Levesque, 2019). As these efforts were implemented, stakeholders worked toward developing a more adaptive workforce equipped to meet the demands of an evolving global economy (Vance & Paik, 2015).

Factors Associated with the Skill Gap. Multiple factors contributed to the expanding skills gap in the workforce (Perna, 2023). Rapid technological advancements, particularly in automation and artificial intelligence, played a pivotal role (Mathur, 2024). Essential soft skills necessary for career success included communication, adaptability, teamwork, leadership, problem-solving, emotional intelligence, critical thinking, and time management (Börner et al., 2018). Meanwhile, emerging technological trends demanded proficiency in artificial intelligence, machine learning, data science, cybersecurity, cloud computing, digital marketing, and software development (Snyder, 2024). As industries adopted these innovations, companies increasingly required employees who could

operate, maintain, and innovate within these advanced environments (Waltower, 2023). As a result, the disconnect between industry needs and workforce preparedness further exacerbated the skills gap.

Education–Employment Gap. The education–employment gap continued to widen the existing skills gap (Mukerjee, 2024). Researchers from the NCES examined the 2,000,000 bachelor's degrees awarded to the class of 2020 and found that fields, such as social sciences, history, and psychology collectively accounted for a substantial portion of the total. Social sciences and history alone represented seven percent of all degrees conferred (National, n.d.). The findings reflected a concentration of degrees in low-demand areas, often associated with higher unemployment rates and lower earning potential than technical or healthcare-focused degrees such as computer science, engineering, nursing, and business (McNair, 2024; NCES, n.d.; Waltower, 2023).

Training Gap. The skills gap remained a critical issue, driven by inadequate training, workforce retirements, and technological advancements. Many businesses failed to provide employees with the training necessary to develop in-demand skills, resulting in a persistent mismatch between workforce competencies and employer requirements (Coursera, 2024; Perna, 2023). A lack of investment in workforce development further exacerbated challenges within the rapidly evolving job market, leaving many employees unprepared to meet emerging industry demands (Mukerjee, 2024)). Additionally, the retirement of baby boomers intensified the gap, as experienced workers departed with specialized knowledge and skills that proved difficult to replace. With 10,000 baby boomers reaching retirement age each day until 2030, their exit significantly disrupted industries that had long relied on their expertise (Radcliffe, 2024).

Higher education institutions faced mounting pressure to produce graduates who were immediately employable, further complicating postsecondary planning and job readiness efforts (Khaund, 2024). Despite this urgency, many institutions struggled to adapt curricula to align with workforce needs, thereby contributing to the disconnect between academic outcomes and employer expectations (Brookings Institution, 2024). The misalignment between higher education and labor market demands left graduates underprepared for available job opportunities, perpetuating high unemployment rates among recent degree holders (McKinsey Global Institute, 2023).

Technological advancements further widened the skills gap, as rapid innovation transformed job requirements. The emergence of automation and artificial intelligence created new demands for technical and digital literacy skills, yet traditional educational systems often failed to evolve at a comparable pace (Li, 2022; Waltower, 2023). In 2019, the OECD projected that automation would eliminate 14% of global jobs and significantly alter another 32%, a trend accelerated by the adoption of generative artificial intelligence tools such as ChatGPT (Haleem et al., 2022).

Researchers underscored the lack of technological integration in educational curricula, which left graduates unprepared for the evolving job market. Fadhil et al., (2021) found that limited exposure to digital competencies hindered students' workforce readiness, a finding echoed by Hazan et al. (2024). Similarly, the Brookings Institution (2024) emphasized the misalignment between workforce needs and educational preparation, which contributed to continued employment challenges among recent graduates. Scholars stressed the urgent need for educational reform to address shifting job market demands. To close the skills gap, educational systems needed to incorporate

advanced technical training, soft skills development, and career-oriented instruction to better prepare students for a technology-driven economy (Hazan et al., 2024; Jacobson, 2017).

Mismatch Between Educational Curricula and Industry Needs. The disconnect between educational curricula and industry demands remained a critical challenge for both educators and employers (Li, 2022). Researchers emphasized the widening skills gap, as employers struggled to find candidates with the competencies required for high-demand roles (Brookings Institution, 2024; Hazan et al., 2024; Waltower, 2023). Although technological advancements underscored the growing need for soft skills such as communication, collaboration, and problem-solving in the data-driven economy, traditional education often prioritized technical expertise (Haleem et al., 2022). This imbalance left graduates underprepared for the dynamic and interpersonal demands of modern workplaces (Börner et al., 2018).

To address this misalignment, Douglass and Schwebach (2020) proposed a multistage curriculum development model that emphasized continuous feedback and collaboration between academia and industry. Ishak and Sukardi (2020) similarly advocated for a paradigm shift in curriculum design that integrated emerging technologies, fostered interdisciplinary learning, and prioritized practical problem-solving skills. Expanding on these ideas, Gupta et al. (2020) highlighted the need for stronger partnerships between educational institutions and industry stakeholders to create responsive curricula aligned with workforce demands. Collectively, these findings underscored the importance of dynamic collaboration and innovative strategies in bridging the skills gap.

Insufficient Emphasis on Vocational and Technical Education. Despite the increasing demand for skilled workers in the 21st century, vocational and technical education programs often received limited emphasis within education systems (Mahmud & Wong, 2022). This neglect stemmed from a historical preference for academic pathways, which were perceived as more prestigious than vocational training (Young & Hordern, 2020). Consequently, underinvestment in vocational and technical education led to significant worker shortages across critical industries (Gao et al., 2020). For example, Talent Shortage (2024) reported severe labor deficits, with shortages reaching 73% in finance and real estate, 71% in healthcare and consumer goods, 70% in industrial and materials sectors, and 68% in transport and energy. Similarly, the technology sector faced a 66% shortage of information technology professionals, further highlighting the urgent need for skilled labor (Talent Shortage, 2024).

Researchers also examined the consequences of undervaluing vocational training. Young and Hordern (2020) advocated for the integration of theoretical knowledge with practical skills, recognizing the outdated nature of the vocational–academic divide. Similarly, Gao et al. (2020) recommended a multilevel vocational education system that emphasized industry-aligned on-site training and lifelong learning to effectively address workforce demands. These findings reinforced the necessity of educational reforms that promoted vocational and technical education as essential components of workforce development.

Unemployment and Underemployment and the Skills Gap. The widening skills gap presented significant economic and societal challenges (Craig, 2019). According to the OECD (2020), this disparity led to decreased productivity, slowed

economic growth, and increased income inequality (see also OECD, 2023). Businesses struggled to fill critical roles, encountering persistent barriers to innovation and technological advancement (Craig, 2019). By early 2019, approximately seven million jobs in the United States remained unfilled, while employers consistently reported difficulties in finding qualified workers (Adecco, 2023; Craig, 2019; Talent Shortage, 2024).

Although some scholars contended that the severity of the skills gap had been overstated, substantial evidence supported its existence (Adecco, 2023; Craig, 2019). Higher education institutions often failed to adequately prepare graduates for workforce demands, which exacerbated the gap (Craig, 2019). This misalignment, compounded by insufficient postsecondary planning, contributed to rising unemployment and underemployment (Ascione, 2023; Craig, 2019). Furthermore, rapid technological advancements and globalization heightened the demand for specialized skills, leaving many job seekers unprepared for high-demand roles (Craig, 2019; Li, 2022). The disconnect between labor supply and industry needs disproportionately affected individuals with limited education beyond high school, further exacerbating unemployment rates (Mahmud & Wong, 2022).

Deficiencies in postsecondary planning also contributed to gaps in soft skills and overall workforce readiness (Khaund, 2024). Many high school graduates lacked both clear career pathways and the necessary education for specific occupations (Craig, 2019; Perna, 2023). For instance, 65% of the high school class of 2023 reported having had five or fewer career-related discussions with educators, which resulted in uncertainty regarding their postsecondary plans. Additionally, approximately 31% of these graduates

remained unsure of their educational or career trajectories (Ascione, 2023). This lack of career guidance often led students to pursue degrees or certifications misaligned with labor market needs, perpetuating underemployment and exacerbating skills shortages (Khaund, 2024).

Economic Implications for Individuals and Society. The effects of the skills gap extended beyond unemployment, generating significant economic and societal consequences (Spence & Espinoza, 2023). The disconnect between workforce demands and inadequate postsecondary planning left individuals unprepared for in-demand occupations, often due to limited education and insufficient career guidance (Hansen, 2021). This misalignment reduced job opportunities, stagnated wages, and increased income inequality (OECD, 2023). Individuals lacking essential skills faced diminished financial stability and restricted upward mobility, widening disparities between skilled and unskilled workers (Hirschfeld, 2024). As a result, many individuals remained trapped in low-wage employment, which hindered their ability to achieve long-term financial security (Hansen, 2021). The lack of effective career planning and workforce development ultimately reinforced economic inequality and impeded broader societal progress (Reddy, 2020).

Challenges Faced by Employers and Industry Performance. The skills gap not only contributed to rising unemployment and underemployment but also created broader challenges for employers and the workforce, highlighting the consequences of limited career planning (Waltower, 2023). Employers increasingly sought candidates who possessed both technical expertise and soft skills, such as collaboration and communication, to effectively navigate digital transformation and customer-focused

strategies (Infosys, 2019). However, identifying candidates with this combination of abilities remained a persistent challenge (Reddy, 2020).

U.S. businesses particularly struggled to fill middle-skills positions in sectors such as the trades, telecommunications, healthcare, and information technology. These roles required more than a high school diploma but less than a bachelor's degree. Although 52% of available jobs fell within this category, only 43% of the workforce possessed the necessary qualifications (Spence & Espinoza, 2023). The OECD (2020) further noted that rapid technological advancements continued to create new roles, yet many workers lacked the skills needed to transition into these emerging occupations, thereby widening the gap (see also OECD, 2023).

The shortage of appropriately skilled workers significantly increased recruitment costs as businesses allocated substantial resources to sourcing, screening, and onboarding candidates (Reddy, 2020). According to the World Economic Forum (2023), these rising costs placed particular strain on small and medium-sized enterprises with limited financial and human resources. Additionally, delays in filling critical positions frequently resulted in project backlogs, slowed product development, and missed business opportunities, ultimately hindering economic growth (World Economic Forum, 2023).

Importance of College and Career Awareness and Postsecondary Planning for Addressing the Skills Gap

Educational experts and policymakers underscored the critical role of comprehensive college and career planning in mitigating the persistent skills gap (Gibney & Rauner, 2021). Several researchers emphasized the need for intensive career exploration and guidance programs in middle and high schools to expose students to

diverse career pathways, industry trends, and labor market demands. These initiatives empowered students to make informed postsecondary decisions and align their education with in-demand skills (Karimi & Piña, 2021).

Seamless transition planning was particularly vital for students with disabilities to ensure successful postsecondary engagement and workforce readiness (Reddy, 2020). Effective support strategies included personalized services, accommodations, and clear pathways designed to bridge the gap between academic preparation and employer expectations (Illinois Center for Transition and Work, 2023). Furthermore, integrating vocational resources into educational curricula allowed educators to proactively equip students with the skills and credentials necessary to succeed in a rapidly evolving job market. Early exposure to career pathways, informed decision-making, and targeted support during the transition from education to employment were essential for fostering workforce readiness and addressing industry demands (Gandhi & Gandhi, 2023; Gibney & Rauner, 2021; Postsecondary Education, 2023).

Concerns with Students Failing to Have a Postsecondary Plan

The transition from secondary school to postsecondary education or the workforce represented a critical phase in a student's development (Haviland & Robbins, 2021). Effective postsecondary planning was a multifaceted process that enabled students to define their aspirations, explore options such as college, vocational training, or direct workforce entry, and develop actionable plans to achieve their goals (CHOICES Committee, 2020; Gandhi & Gandhi, 2023). High school students were encouraged to engage in self-assessment, career exploration, college research, and financial aid planning. Collaboration among students, parents, educators, and counselors played a

crucial role in tailoring guidance to meet students' individual needs (CHOICES Committee, 2020).

The planning process provided students with the knowledge, skills, and resources necessary for informed decision-making and a successful transition to adulthood (Gandhi & Gandhi, 2023). However, the absence of a structured postsecondary plan often resulted in limited career options, financial instability, and increased reliance on public assistance programs (Chetty et al., 2023). These challenges were particularly pronounced for Black, Latinx, and Indigenous students, who historically faced systemic inequities in education, economic opportunities, and civic engagement (Hundrev, 2024; Jimenez, 2020). Barriers such as resource limitations, financial constraints, and inadequate access to career counseling disproportionately affected students from low-income communities, further exacerbating educational and economic disparities (Jaggars & Bickerstaff, 2018). For instance, in Illinois, only 53% of low-income high school graduates enrolled in college within six months, compared to 74% of their higher-income peers. Additionally, low-income students were less likely to access advanced educational opportunities and were more frequently placed in developmental courses, limiting their academic progression (Illinois Board of Higher Education, 2024).

Researchers emphasized the significance of structured postsecondary planning in improving outcomes for marginalized populations. Studies conducted in rural Uganda and other global contexts demonstrated a correlation between comprehensive postsecondary planning and higher employment rates, highlighting its universal relevance (Hagel et al., 2021). In the United States, effective planning encompassed guidance on navigating college applications, securing financial aid, obtaining internships, and

developing professional networks, all of which significantly enhanced employment prospects and career readiness (Van Derziel, 2022). Conversely, students who lacked structured postsecondary planning often missed valuable opportunities for personal and professional growth, thereby limiting their ability to contribute meaningfully to society (Mahmud & Wong, 2022). In response to these challenges, schools and communities implemented comprehensive support systems and resources to assist students in navigating the postsecondary planning process and preparing for future success (Haviland & Robbins, 2021).

College and Career Readiness Programs

Many scholars argued that college and career readiness programs played a crucial role in equipping students with the knowledge, skills, and resources necessary to navigate the increasingly complex landscapes of higher education and the workforce (Mahmud & Wong, 2022). The National Skills Coalition (2022) found that well-designed career readiness initiatives, particularly those integrating industry input and experiential learning, significantly improved student outcomes (see also Christopher & Daniel, 2022). Furthermore, structured career readiness programs correlated with higher degree completion rates and successful transitions into in-demand careers (Matters & Matters, 2024). As a result, many postsecondary planning programs functioned as a bridge between secondary education and students' future aspirations by providing guidance and support to ensure informed decision-making regarding academic and professional pathways (Postsecondary Education, 2023). However, (Fletcher & Tyson, 2017) reported a significant decline in college enrollment rates, particularly among low-income and non-white students, which further exacerbated the skills gap (see also Krishnamoorthy &

Keating, 2021). The decline in postsecondary attendance, combined with the growing mismatch between the skills possessed by graduates and those required by employers, underscored the need for stronger collaboration between educational institutions and industry partners to address evolving workforce demands (Krishnamoorthy & Keating, 2021; Mahmud & Wong, 2022).

Importance of Preparing Students for the Workforce. A well-prepared workforce was essential for economic growth, global competitiveness, and individual well-being. The OECD (2020) emphasized that equipping students with skills for in-demand occupations was critical to maintaining productivity and driving innovation (as cited in Krishnamoorthy & Keating, 2021). Similarly, the World Economic Forum (2023) highlighted that individuals who acquired in-demand skills secured higher-paying, stable employment, thereby contributing to social mobility and reducing economic disparities (Lu, 2021). Conversely, a lack of workforce readiness exacerbated unemployment, underemployment, and social inequalities, further hindering economic progress (Mahmud & Wong, 2022).

Moreover, effective workforce preparation fostered adaptability and resilience in response to rapid technological and industrial advancements. Alberta Advanced Education (2021) recommended a demand-driven approach, in which educational programs aligned with industry needs and emphasized transferable skills such as critical thinking, problem-solving, and collaboration. Approximately 57% of industry and academic experts underscored the importance of partnerships between these sectors to enhance postsecondary and vocational education and to ensure students were adequately prepared for the future workforce (Marri & Reyes, n.d.). Robust workforce preparation

not only addressed immediate skills gaps but also established a foundation for long-term economic and social equity.

Program Components of Postsecondary Planning. Postsecondary planning necessitated a shift from traditional education models to a holistic approach that equipped students with the knowledge, skills, and adaptability required to thrive in a rapidly evolving world (Mahmud & Wong, 2022). A key component of workforce preparation involved fostering career adaptability. Hines et al. (2022) emphasized the importance of preparing students to navigate career transitions, acquire new skills, and meet changing industry demands. As technological advancements continued to reshape industries, individuals who embraced lifelong learning and adapted to new challenges were better positioned for sustained career success than those who did not (Weise, 2020).

Bridging the gap between classroom learning and real-world experience also remained critical. Mays (2021) highlighted the increasing value employers placed on practical experience and applied skills. Opportunities such as internships, apprenticeships, and project-based learning provided students with hands-on training, industry exposure, and the development of essential soft skills, including communication, teamwork, and problem-solving (Mays, 2021).

Additionally, fostering a growth mindset and a strong work ethic was of paramount importance. Cook-Deegan (2022) underscored the significance of cultivating durable skills, resilience, motivation, and a sense of purpose. Students who developed these traits demonstrated a greater likelihood of persevering through challenges, engaging in continuous learning, and achieving long-term career fulfillment.

Academic and Career Counseling. Academic counseling played a crucial role in postsecondary planning by providing students with guidance in their academic pursuits (Reye, 2022). Counselors assisted students in exploring academic interests and strengths, selecting appropriate courses and programs, developing effective study habits, and accessing academic support resources (What Career, 2024). Furthermore, academic counseling equipped students with the tools and knowledge necessary for academic success, thereby establishing a strong foundation for future career pathways (Li, 2022).

Balfanz and Wu (2018) advocated for a holistic approach to academic advising that extended beyond course selection to encompass a broader range of support, including academic skill development and personal well-being. Recommendations for this holistic model, which integrated academic, social, and emotional support, assumed that such an approach was essential for fostering student success and persistence. Similarly, the *Holistic Advising Approach to Student Success* (2023) documented comparable findings, presenting case studies and best practices that reinforced the significance of a comprehensive model for enhancing postsecondary planning.

Li (2022) speculated that strategic academic counseling contributed to increased student retention and academic achievement. However, academic counseling was not without limitations. One significant challenge stemmed from the heavy caseloads of academic advisors, which restricted the amount of individualized attention each student received (Effective Ways, 2011). Additionally, access to academic counseling varied across institutions and socioeconomic backgrounds, potentially disadvantaging students from under-resourced schools and first-generation college students (Gewertz, 2013).

Academic counseling alone, therefore, was not always sufficient in preparing

students for the complexities of the labor market and the intricacies of career decision-making (Effective Ways, 2011). In contrast, career counseling focused on helping students identify career aspirations, explore relevant occupations, and develop the skills and strategies necessary for a successful transition into the workforce (CareerExplorer, 2024).

Career counseling played a pivotal role in postsecondary planning by assisting students in career exploration and development (Reye, 2022). Career counselors facilitated self-assessments, provided occupational research and information, developed job search skills, and connected students with career development opportunities (CareerExplorer, 2024). Several researchers underscored the positive impact of career counseling on students' career decision-making and overall career readiness (Khaund, 2024). For instance, the World Economic Forum (2023) emphasized the importance of equipping students with skills for in-demand occupations, a key area addressed through career counseling initiatives.

Doherty-Restrepo et al. (2023) further substantiated the benefits of career counseling by examining the gap between students' career readiness and employers' expectations. Their findings indicated that students who engaged in career counseling services reported increased confidence in job search skills and employment-related endeavors. Additionally, students who participated in career exploration initiatives developed a clearer understanding of career goals and demonstrated greater preparedness for the demands of the job market (Doherty-Restrepo et al., 2023). The researchers provided empirical evidence supporting the claim that career counseling effectively bridged the gap between academic preparation and workforce expectations, thereby

equipping students with the skills and knowledge necessary for successful career transitions (CareerExplorer, 2024; Doherty-Restrepo et al., 2023; Reye, 2022).

Moreover, researchers documented the positive influence of career counseling on students' decision-making processes. Astuti et al. (2021) corroborated the findings of previous studies, concluding that career counseling empowered students to make more deliberate and well-informed career choices, ultimately contributing to greater career satisfaction and long-term professional success (see also Mahmud & Wong, 2022). Educational stakeholders also highlighted the importance of career counseling in shaping students' career trajectories and facilitating informed decision-making (CareerExplorer, 2024).

Despite its advantages, career counseling also had limitations (Perna, 2023). One significant challenge was the rapidly evolving nature of the job market, which made it difficult for counselors to provide students with up-to-date information on specific occupations (Mays, 2021; Perna, 2023; Rizwan et al., 2021). Additionally, career counselors often concentrated on traditional career pathways, potentially limiting students' exposure to emerging or nontraditional career options (Perna, 2023).

Integration and Access to Career-Focused Curricula. Many scholars have argued that access to a career-focused curriculum is crucial for student success (Young & Hordern, 2020). By aligning educational content with career development objectives, institutions enhance students' workforce preparedness and improve overall success rates (Moriyasu & Kobayashi, 2022). The integration of career-focused curricula equips students with the knowledge, skills, and professional connections necessary for successful transitions into the workforce (Perna, 2023). This approach fosters career

readiness, links academic learning with real-world applications, and contributes to both economic security and personal fulfillment (Glennie et al., 2023).

Researchers have highlighted the benefits of career-focused curricula. The National Association of State Directors of Career Technical Education Consortium (2023) found that students enrolled in career and technical education (CTE) programs experienced higher graduation rates, increased postsecondary enrollment, and greater earnings in early adulthood compared to their peers. Similarly, Glennie et al. (2023) noted that students who earned industry-recognized credentials demonstrated higher career self-efficacy and were more likely to pursue postsecondary education aligned with their career goals.

However, concerns have emerged regarding curricula that lack a clear career focus (Perna, 2023). Rizwan et al. (2021) identified a disconnect between employer expectations and graduates' preparedness in such curricula. Additionally, Perna (2023) highlighted deficiencies in applied knowledge, problem-solving skills, and professional communication. These gaps underscored the need for curricula to not only provide theoretical knowledge but also cultivate practical skills and industry-relevant experiences (Börner et al., 2018; Perna, 2023; Rizwan et al., 2021). The absence of career awareness within education has also contributed to student disengagement and uncertainty about future pathways (Moriyasu & Kobayashi, 2022). Hrynowski (2024) found that only one-third of U.S. students strongly agreed that schoolwork was relevant to their lives and interests. This lack of perceived relevance often led to reduced motivation, lower academic achievement, and challenges in transitioning to fulfilling careers (Hrynowski, 2024).

Role of Skills Development. Skills development plays a critical role in the success of individuals, organizations, and national economies (Heinz, 2024). Skill development involves the acquisition and refinement of knowledge, abilities, and competencies, enabling individuals to perform tasks more effectively and efficiently (Chiancone, 2024). Enhanced skills contribute to improved employability, career advancement, and higher earning potential (Heinz, 2024). Furthermore, skills development strengthens self-efficacy, empowering employees to tackle new challenges and contribute meaningfully to their organizations (Heinz, 2024). From an employer's perspective, a skilled workforce was essential for productivity, innovation, and organizational growth (Perna, 2023). Hagel et al. (2021) found that companies committed to skills development reported higher employee engagement, customer satisfaction, and profitability.

Employers who invested in employee training demonstrated a commitment to growth and foster a positive work environment, which led to improved employee retention (Heinz, 2024). Skills development is also crucial for economic growth, competitiveness, and societal progress (Hundrev, 2024). A skilled workforce drives innovation, attracts foreign investment, and enhances global competitiveness (Levesque, 2019). Despite the recognized importance of skills development, the lack of employability skills among graduates and job seekers remains a significant concern (Skills Gap, 2023). Employers across industries continue to report a skills gap, with graduates lacking the technical, soft, and digital skills necessary for workplace success (Börner et al., 2018; Skills Gap, 2023; Thier, 2023). This gap presented challenges for organizations, which hindered the organizations ability to innovate, grow, and maintain competitiveness in an evolving labor market (Waltower, 2023).

Enhancing Employability Skills. Enhancing employability skills was essential for individuals navigating the evolving 21st-century workplace. A robust and adaptable skill set, including soft skills, technical expertise, and digital literacy, remained critical for workforce success (Doherty-Restrepo et al., 2023). The World Economic Forum (2023) highlighted the increasing demand for critical thinking, problem-solving, analytical abilities, and resilience. However, concerns persisted regarding the widening skills gap, unequal access to professional development opportunities, and the shifting nature of work.

Ellingrud et al. (2023) emphasized the urgency of reskilling and upskilling in response to rapid technological advancements. Addressing these challenges required a multifaceted approach. Key recommendations included strengthening education and training systems to integrate employability skills development from early education through higher education (Ellingrud et al., 2023; Perna, 2023; Rizwan et al., 2021). Expanding work-based learning opportunities, such as apprenticeships and internships, provided students with practical experience and industry connections (Thier, 2023). Additionally, embracing lifelong learning through accessible training programs and online courses was essential for adapting to evolving workforce demands (Skills Gap, 2023). Leveraging technology through online platforms, simulations, and personalized learning pathways further enhanced skills development (Thier, 2023).

Aligning Academic Pursuits with Career Goals. The alignment of academic pursuits with career goals received significant attention in recent years (Doherty-Restrepo et al., 2023). Studies indicated that such alignment contributed to increased motivation, job satisfaction, and long-term career success (Khaund, 2024). For instance, Gallup

(2023) reported that in 2021, graduates who believed their education effectively prepared them for their field were nearly four times more likely than their peers to be engaged at work. Similarly, research from the Strada Education Foundation (2018) indicated that students with clearly defined career goals and plans exhibited greater persistence in their studies and were more likely to graduate on time. These findings underscored the importance of helping students connect their academic experiences with future career aspirations (Gallup, 2023).

However, a misalignment between academic pursuits and career goals presented significant challenges (Khaund, 2024). Many graduates entered the workforce underprepared, lacking the specific skills required by employers (Perna, 2023). This discrepancy contributed to the growing skills gap reported by organizations worldwide (Knowledge Matters, 2024; Perna, 2023; Rizwan et al., 2021). Manpower Group (2020) found that 69% of global employers faced difficulties filling vacancies due to talent shortages. Moreover, this misalignment resulted in job dissatisfaction, reduced earning potential, and limited career mobility (Hirschfeld, 2024; Manpower Group, 2020). Students pursuing fields unrelated to their interests or competencies were less likely to experience career fulfillment, which further impacted their overall well-being and professional trajectories (Khaund, 2024).

CTE Programs

Career and Technical Education (CTE) programs played a pivotal role in preparing students for specific occupations or career clusters through hands-on learning, industry-relevant skill development, and practical experience (Fletcher & Tyson, 2017). Unlike traditional academic pathways, CTE integrated apprenticeships, internships, and

industry certifications into its curriculum. As labor market demands evolved, the value of CTE programs increased. Bergson-Shilcock et al. (2023) reported that nearly two-thirds of jobs in the United States required postsecondary education or training, with many necessitating technical skills best acquired through CTE programs. Furthermore, a 2021 study conducted by Georgetown University found that individuals holding associate degrees in CTE fields often earned higher salaries than those with bachelor's degrees in non-CTE disciplines (Coolberth, 2023). These findings underscored CTE's effectiveness in providing direct pathways to high-demand careers and financial stability.

CTE played a crucial role in bridging the skills gap by equipping students with the technical proficiencies sought by employers. Partnerships between educational institutions and businesses ensured that CTE curricula aligned with industry demands, effectively preparing graduates for workforce entry (Christopher & Daniel, 2022). CTE programs also facilitated work-based learning opportunities, such as apprenticeships and internships, enabling students to gain on-the-job training and industry exposure (Illinois State Board of Education & Illinois Community College Board, n.d.; Li, 2022). Additionally, CTE provided access to industry-recognized credentials and certifications, which further enhanced employability (Khaund, 2024; Li, 2022). These credentials validated students' skills and were valuable assets in the job market. Carnevale et al. (2021) found that individuals with industry-recognized credentials often earned higher salaries and experienced lower unemployment rates than their peers without such credentials. By addressing the growing need for skilled labor, CTE contributed to the development of a more adaptable and resilient workforce (Goodwin, 2021).

Industry – Aligned Curriculum

Industry-aligned CTE curricula yielded significant benefits for students, employers, and the broader economy (Fletcher, & Tyson, 2017). Numerous studies established a strong correlation between industry-aligned programs and increased employment opportunities for graduates (Advance CTE, 2023; Xu & Backes, 2023). By ensuring that CTE programs equipped students with the specific skills and knowledge demanded by employers in high-growth industries, such alignment played a crucial role in addressing workforce needs (Advance CTE, 2023; Carnevale et al., 2023). Additionally, industry-aligned curricula helped mitigate the persistent skills gap faced by many sectors (Khaund, 2024; Perna, 2023). Through the provision of industry-relevant training and recognized credentials, CTE programs created a pipeline of skilled workers prepared to meet the evolving demands of the labor market (Mays, 2021). Many of these occupations required specialized technical expertise, which CTE programs were uniquely positioned to provide (Carnevale et al., 2023; Coolberth, 2023).

Hands-On Experience and Work-Based Learning

CTE programs underscored the significance of hands-on learning experiences in preparing students for workforce entry (Illinois State Board of Education & Illinois Community College Board, n.d.). Unlike traditional academic pathways, which often emphasized theoretical knowledge, CTE prioritized the practical application of skills and concepts (Illinois State Board of Education & Illinois Community College Board, n.d.). Rezin and McCaslin (2001) highlighted the effectiveness of incorporating laboratories, simulations, and project-based activities into CTE curricula to enhance student learning outcomes. Navolio (2024) similarly noted that hands-on experiences facilitated the

connection between theory and practice, fostering deeper comprehension and enhanced problem-solving abilities.

Hands-on learning in CTE programs was tailored to specific career pathways (Navolio, 2024). For instance, students in healthcare-focused CTE programs engaged in clinical rotations, gaining firsthand experience in medical settings. Similarly, students enrolled in manufacturing programs operated industry-standard equipment in workshop environments, which allowed them to develop both technical competencies and safety awareness. Advance CTE (2023) emphasized the necessity of aligning hands-on learning experiences with industry standards to ensure program relevance (see also Hagel et al., 2021). By simulating real-world work environments, CTE programs enabled graduates to acquire the practical skills and knowledge required for immediate workforce integration (Advance CTE, 2023).

The benefits of hands-on learning extended beyond technical skill development. Showalter and Spiker (2016) found that students who participated in work-based learning experiences, such as apprenticeships and internships, demonstrated higher levels of workplace readiness, which included enhanced communication, teamwork, and problem-solving skills. Hummel and Hummel (2024) further recognized the value of these opportunities in cultivating essential soft skills. When combined with technical expertise, these competencies contributed to a well-rounded workforce capable of adapting to the shifting demands of the 21st-century labor market.

Certifications and Credentials

Career and Technical Education (CTE) programs played a critical role in enabling students to earn industry-recognized certifications and credentials, which enhanced

employability and validated their skills for potential employers (Advance CTE, 2023; Marshall, 2022). These credentials served as valuable assets in a competitive job market, signaling to employers that certified individuals possessed the requisite knowledge and competencies for specific occupations (Jobs for the Future, 2023; Marshall, 2022). A. P. Carnevale et al. (2024) highlighted the wage premium associated with industry-recognized credentials, demonstrating that individuals with such certifications often earned significantly higher salaries than those without them.

High school students specializing in CTE benefited from significant opportunities for career advancement. Among the 6.6 million high school students not expected to pursue a bachelor's degree by age 22, increased CTE instruction could have provided transformative opportunities. If these students had received more CTE-focused education, an additional 186,000 young adults could have accessed jobs by age 30, with starting and median salaries of $38,000 and $57,000, respectively (What Works, 2024).

Furthermore, CTE programs actively aligned curricula with industry standards to ensure that students were adequately prepared to sit for and pass industry-recognized certification exams (Marshall, 2022). These certifications spanned various industries, which included healthcare, information technology, manufacturing, and skilled trades (Gandhi & Gandhi, 2023; Rezin & McCaslin, 2001). For example, students in healthcare programs pursued certifications such as Certified Nursing Assistant or Emergency Medical Technician, while information technology students obtained certifications such as CompTIA A+ or Cisco Certified Network Associate (Bloomfield, 2023; Illinois Center for Transition and Work, 2023).

The acquisition of industry-recognized credentials conferred several advantages

for students. Gupta et al., (2020) noted that students with certifications experienced higher rates of employment, better starting salaries, and greater job satisfaction compared with their peers without certifications. Such credentials signified a candidate's commitment to professional development and ability to meet industry standards (Jobs for the Future, 2023). As the demand for skilled labor continued to grow, CTE programs played an essential role in providing pathways to industry-recognized credentials, which enhanced employability, increasing earning potential, and fostering opportunities for career advancement (Bloomfield, 2023; Mays, 2021; Xing et al., 2019).

Career Readiness

Career readiness encompassed the essential skills, knowledge, and dispositions that enabled individuals to successfully transition into and navigate the workforce (Gupta et al., 2020). CTE played a pivotal role in fostering career readiness by offering a multifaceted approach that extended beyond traditional academic learning (Perna, 2023). CTE programs integrated career exploration and planning activities into their curricula, exposing students to various career pathways and industry sectors (Doherty-Restrepo et al., 2023). Through career fairs, industry guest speakers, and work-based learning experiences, students gained valuable insights into different occupations, which allowed them to make informed decisions about their career aspirations (Flynn, 2021). Advance CTE (2023) emphasized the importance of career exploration and planning, particularly the need for students to understand labor market trends and in-demand skills to prepare for the future of work.

Additionally, CTE programs prioritized the development of essential employability skills, often referred to as soft skills or 21st-century skills (Mahmud &

Wong, 2022). Employers across industries highly valued these skills (Bloomfield, 2023), which included communication, teamwork, problem-solving, and critical thinking. CTE programs incorporated these competencies through project-based learning, group activities, and work-based learning experiences (Bloomfield, 2023). The National Skills Coalition (2021) found that employers consistently ranked soft skills as equally important as technical skills when evaluating job candidates (Olugbemiga, 2020).

Beyond soft skills, CTE programs equipped students with technical skills specific to their chosen career fields (Bloomfield, 2023). Through hands-on training, industry-recognized certifications, and work-based learning experiences, students graduating from CTE programs possessed knowledge and skills directly applicable to the workplace (Hummel & Hummel, 2024). This alignment between education and industry needs ensured a smoother transition into employment and increased the likelihood of career success (Perna, 2023; Rezin & McCaslin, 2001).

The Role of Professional Staff in Career Exploration and Awareness

Professional staff — including counselors, career coaches, and career development facilitators — played a crucial role in guiding individuals through the complex process of career exploration (Torpey, 2015). Career exploration was considered a lifelong journey rather than a one-time event, and both researchers and employers emphasized its ongoing importance (McKay, 2020). Professional staff provided vital support and resources to help individuals identify their interests, explore career options, and develop plans for achieving their career goals and aspirations (Li, 2022).

Pham et al. (2024) highlighted the critical role of professional guidance in career exploration, noting positive correlations between career counseling and key outcomes

such as career decision-making, self-efficacy (Sanders et al., 2017), and career satisfaction. Career Exploration (n.d.) similarly explained that students who received career guidance from trained professionals were more likely than their peers to pursue education and training aligned with their career goals. Professional staff empowered students, whereas the staff provided personalized support, facilitated self-assessments, and connected students with valuable resources. This individualized approach helped students make informed decisions about their career paths and navigate the ever-changing world of work (Astuti et al., 2020).

School Counselors and Career Advisors

School counselors and career advisors played a crucial role in fostering career exploration and awareness among students (Solis, 2024). These professionals guided students through a process essential for future success. Recognizing that career exploration was an ongoing journey rather than a one-time decision, they provided continuous support to help students better understand themselves and the workforce (Rochat, 2016). Counselors facilitated self-awareness by helping students identify their interests, values, skills, and aptitudes through assessments and self-reflection activities (Epler & Cortes-Quintana, 2024).

Additionally, school counselors and career advisors expanded students' awareness of career options (Bureau of Labor Statistics, 2024). They provided information about a wide range of occupations, industries, and career pathways, exposing students to opportunities they might not have previously considered (Bureau of Labor Statistics, 2024). Counselors utilized various interventions, which consisted of classroom guidance lessons, career fairs, guest speakers, and experiential learning opportunities such as job

shadowing and internships (Bureau of Labor Statistics, 2024). The Georgetown University Center on Education and the Workforce emphasized how career exposure challenged stereotypes, broadened aspirations, and increased access to well-paying jobs (A. P. Carnevale et al., 2022).

Furthermore, counselors assisted students in connecting self-awareness with career awareness, guiding them toward identifying occupations aligned with their values, interests, and skills (Parzych et al., 2019). By providing resources such as online databases, career exploration websites, and facilitating informational interviews with professionals, counselors enabled students to make informed and satisfying career decisions (Flynn, 2021; Parzych et al., 2019).

Limitations of Counselor and Advisor Support. Despite their critical role, school counselors faced several limitations that hindered their effectiveness. Heavy caseloads and multiple job responsibilities significantly reduced the time counselors could dedicate to individualized college and career counseling. The American School Counselor Association (2022) recommended a 250:1 student-to-counselor ratio; however, the national average exceeded this, with many schools reporting ratios as high as 482:1. Such overloads limited counselors' abilities to provide personalized guidance, particularly in college planning and career readiness (Solis, 2024). Counselors also undertook diverse responsibilities beyond career counseling. Counselors addressed students' social-emotional needs, provided academic guidance, and engaged in crisis intervention (American School Counselor Association, 2019). Brasfield et al. (2020) emphasized that counselors' heavy caseloads and competing responsibilities resulted in reduced time for career and college readiness tasks, thereby creating gaps in guidance, particularly for

underserved populations. Students from low-income families and first-generation college students, who relied heavily on school counseling services, consequently faced limited access to critical resources such as college application support, financial aid assistance, and career exploration opportunities (Brasfield et al., 2020; Solis, 2024).

The Role of Educators in Integrating Career Education

Given the increasing demands of the workforce, educators assumed a more active role in fostering career awareness by embedding career exploration into the curriculum (Levy & Robinson, 2024; Perna, 2023). Educators who undertook this role not only guided students through college and career options but also helped them develop clear pathways for life after high school (Swindlehurst & Berry, 2020).

Educators offered support regarding academic choices, career pathways, and necessary skills, to ensure that students were better prepared for postsecondary education or workforce entry (Perna, 2023; Swindlehurst & Berry, 2020). However, in the absence of a strong emphasis on career planning, many students lacked the comprehensive support needed to make informed decisions about their futures (Higginson, 2024). Teachers, particularly in secondary education, were well positioned to introduce students to career pathways through subject-specific instruction, career-related projects, and collaboration with CTE programs (Goodwin, 2021). By linking academic content to real-world applications, educators helped students understand how classroom learning connected to future careers (A. P. Carnevale et al., 2022).

Educators also imparted essential employability skills such as communication, problem-solving, and collaboration, which were necessary for success in the workforce (Fadhil et al., 2021). Moriyasu and Kobayashi (2022) noted that student engagement and

motivation increased when career education was integrated across subjects. Once students understood the importance of achieving long-term goals, they became more engaged in both academic and career instruction. Schools that actively incorporated career exploration into the curriculum were better positioned than others to prepare students for postsecondary success by fostering early career awareness and skill development (Astuti et al., 2020).

Limitations of Educators and Failure to Align Curriculum

Despite the role played by educators, significant limitations persisted as school professionals attempted to align the curriculum with career awareness efforts (Douglass & Schwebach, 2020). One key challenge was the disconnect between classroom instruction and the skills required in the workforce (Douglass & Schwebach, 2020; Perna, 2023). Traditional academic curricula often lacked a focus on employability skills or career readiness, which led to gaps between students' academic knowledge and real-world demands (Doherty-Restrepo et al., 2023; Perna, 2023). This misalignment left students unprepared for both college and careers, particularly in rapidly changing industries that required competencies such as technological literacy and adaptability (Epler & Cortes-Quintana, 2024; Karimi & Piña, 2021; Khaund, 2024).

In addition to curricular misalignment (Khaund, 2024), educators encountered institutional barriers that limited their ability to effectively integrate career awareness into teaching (Gupta et al., 2020). High-stakes testing, rigid curricular standards, and an emphasis on academic content over career exploration restricted opportunities for career-related discussions or hands-on learning experiences (Klein, 2022). Furthermore, educators often lacked professional development focused on career readiness, which left

them ill-equipped to guide students in career planning (Doherty-Restrepo et al., 2023). Disparities in students' access to resources, such as CTE programs or career counseling, further exacerbated the problem, particularly in low-income areas (Bloomfield, 2023; Goodwin, 2021). Without adequate support, educators were unable to provide meaningful career exploration opportunities, which ultimately limited students' exposure to diverse career paths (Doherty-Restrepo et al., 2023; Epler & Cortes-Quintana, 2024).

Policy and Initiatives to Address the Skills Gap

Various policy and practice initiatives emerged to address the skills gap and ensure that students received adequate preparation for workforce entry (McCarthy, 2014). Policymakers and educational leaders recognized the need to align educational outcomes with industry demands (Marshall, 2022). Consequently, initiatives were developed to support the alignment of academic curricula with industry needs, aiming to enhance students' soft skills and career readiness (Rucevic, 2023).

A key concern in aligning curriculum with industry requirements was ensuring that academic content remained relevant to evolving workforce standards (Gupta et al., 2020). Collaborations between educational institutions and industries facilitated students' acquisition of soft skills, exposure to real-world environments, and mentorship from professionals (Bloomfield, 2023; Fadhil et al., 2021; Gupta et al., 2020). These soft skills were essential for bridging the gap between education and employability (Jeske & Linehan, 2020).

Industry partnerships with schools provided students with hands-on experiences (Haviland & Robbins, 2021). Students engaged in internships or apprenticeships developed valuable technical skills and work habits (Fadhil et al., 2021; Li, 2022), which

improved their employability after graduation (Fadhil et al., 2021). These partnerships enhanced students' understanding of job market demands while fostering both technical and soft skills, such as problem-solving, communication, and teamwork (Douglass & Schwebach, 2020; Fadhil et al., 2021; Li, 2022).

Future Research Considerations

Despite efforts to address the employability skills gap and support high school graduates, several key research areas remained unexplored. A major concern was the limited career awareness and exposure available to students (Gandhi & Gandhi, 2023). Many lacked opportunities to explore diverse career pathways, which hindered their ability to make informed postsecondary decisions (Epler & Cortes-Quintana, 2024; Knowledge Matters, 2024; Moriyasu & Kobayashi, 2022). Schools with limited resources often failed to offer comprehensive career awareness programs, which led students to pursue familiar or restricted career options (García & Weiss, 2017; Tofig, 2024). While initiatives such as job shadowing, internships, and industry tours effectively enhanced career awareness (Gupta et al., 2020), those opportunities remained underutilized, particularly in low-income and rural areas (Cook-Deegan, 2022).

Another significant challenge was the inadequate development of 21st-century skills, which included critical thinking, problem-solving, digital literacy, and adaptability—competencies essential in an evolving labor market. These skills were not effectively integrated into high school curricula, particularly in underserved schools, further widening the gap between student competencies and employer expectations (Börner et al., 2018; Doherty-Restrepo et al., 2023; Khaund, 2024; Levesque, 2019). The deficit in soft skills was especially pronounced among students from lower-income

backgrounds, who often lacked access to extracurricular activities and mentorship opportunities (Perna, 2023).

Socioeconomic factors also played a crucial role in postsecondary readiness (Peng & Yue, 2022). Students from lower-income families faced barriers such as limited access to career counseling, networking opportunities, and financial resources necessary for further education or training (Peng & Yue, 2022). Parental involvement was critical to career planning, yet many parents in underserved communities lacked the knowledge or resources to effectively guide their children (Jacobson, 2017). Future research could explore strategies to mitigate these disparities, including school-based career counseling, mentorship, and financial literacy programs. Examining models for increasing parental engagement in career planning could provide additional insights into improving student success. Longitudinal studies could further analyze how early career interventions and socioemotional support influenced long-term educational and workforce outcomes across diverse socioeconomic contexts.

Existing research underscored the need for targeted interventions to address both technical and soft skills gaps, as well as the structural inequities that limited student access to essential resources and opportunities (Hansen, 2021).

Conclusion

The literature on college and career readiness for high school graduates indicated the existence of several critical factors which influenced a student's transition from secondary education to postsecondary education or the workforce. Key challenges included gaps in career awareness, employability skills, and hands-on learning experiences (Doherty-Restrepo et al., 2023; Gibney & Rauner, 2021; Jeske & Linehan,

2020). These gaps highlighted areas in need of improvement to better prepare students for life after high school.

One major finding was the need for increased career exposure and postsecondary planning (Gibney & Rauner, 2021). Many students lacked opportunities to explore diverse career paths, particularly in growing industries such as technology, health care, and skilled trades (Fadhil et al., 2021; Peng & Yue, 2022). This lack of exposure often led to uninformed career choices. However, early career exposure through internships, job shadowing, and industry partnerships significantly improved students' ability to make informed decisions (Moriyasu & Kobayashi, 2022).

Another key theme in the literature was the importance of 21st-century skills for both college and career readiness. Critical thinking, problem solving, collaboration, communication, and digital literacy became increasingly essential for success in higher education and the workforce (Bergson-Shilcock et al., 2023; Mahmud & Wong, 2022). However, many high school curricula had not prioritized these soft skills, leaving students unprepared for the challenges of college and work (Coolberth, 2023; Levesque, 2019). Employers often reported that new graduates lacked skills — such as communication, teamwork, and adaptability — vital for workplace success (Börner et al., 2018). This soft skills gap was particularly pronounced among students from under resourced or lower socioeconomic status backgrounds, who often lacked mentorship and extracurricular opportunities to develop these skills (Hansen, 2021; Jeffery & Jimenez, 2021).

CTE programs were effective for preparing students for the workforce by providing hands-on experience and industry-specific training (Keijzer et al., 2021;

Marshall, 2022). However, access to these programs was often limited, particularly for low-income students or students from minority groups, contributing to disparities in career readiness and job market outcomes (SecureFutures, 2022). Hands-on learning opportunities — such as internships, apprenticeships, and cooperative education were crucial for career readiness (A. P. Carnevale et al., 2022). Students who participated in work-based learning programs were more likely than other students to graduate with the skills necessary for postsecondary education or the workforce (Coolberth, 2023). However, students from lower-income families faced additional challenges accessing these resources, limiting their career preparation (Hagel et al.,2021). Parental involvement also played a critical role in career decision-making, but parents in underserved communities often lacked the knowledge or resources needed to support their children effectively (Klein, 2022; Knowledge Matters, 2024). Targeted interventions were needed to engage parents and equip students from disadvantaged backgrounds for successful transitions to adulthood (Gandhi & Gandhi, 2023).

The role of school counselors was also crucial in facilitating college and career readiness (Hines et al., 2022). Counseling program effectiveness correlated with student outcomes, such as college enrollment and alignment between career aspirations and postsecondary plans (Bureau of Labor Statistics, 2024). However, many school counselors faced barriers, such as high student-to-counselor ratios and limited professional development, which hindered their ability to provide comprehensive guidance (Brasfield et al., 2020). Strengthening counseling programs and addressing these barriers was essential to ensure all students received the support they needed (Parzych et al., 2019).

In summary, the literature indicated the presence of significant gaps in career awareness, 21st-century skills, soft skills, and access to CTE and work-based learning opportunities (Alt, 2023; Doherty-Restrepo et al., 2023; Gupta et al., 2020). Socioeconomic barriers and the role of school counselors also complicated students' readiness for postsecondary education and the workforce (Peng & Yue, 2022). The findings reported in existing literature suggested that targeted interventions, greater industry collaboration (Bloomfield, 2023) and expanded access to hands-on learning opportunities were key to closing the readiness gap and ensuring students had the skills and knowledge necessary for success in the 21st century.

Chapter Three: Methodology and Results

Introduction

Chapter Three presents the research methodology employed to investigate if there is a substantial difference in student outcomes after utilizing structured employability skills workshops on high school seniors' career readiness. The researcher utilized a mixed-methods approach framed within the design thinking methodology to address the research questions, combining quantitative assessments with qualitative inquiry to provide a comprehensive understanding of workshop effectiveness. The methodology was designed to evaluate changes in students' employability skills across five domains: communication, collaboration, professionalism, critical thinking, and career exploration. This chapter details the design thinking framework, research design, participant selection, workshop development, data collection instruments, and analytical procedures implemented throughout the study.

Problem Statement

A growing concern in education and workforce development has been the inadequate career awareness and lack of employability skills among many of the high school graduates, which has had far-reaching implications for students, employers, and the economy as a whole (Fadhil et al., 2021; Fletcher & Tyson, 2017; Higginson, 2024; Matters & Matters, 2024). Many graduates entered the workforce or post-secondary education with limited exposure to career pathways, industry expectations, and essential employability skills, which resulted in decreased job readiness and employability. This gap in career preparation not only affected individual career trajectories but also

presented challenges for businesses seeking skilled workers and impacts economic growth (A. P. Carnevale et al., 2022; Matters & Matters, 2024).

Several researchers suggested that career awareness programs played a critical role in preparing students for successful transitions beyond high school (Astuti et al., 2020, Christopher & Daniel, 2022; Hansen, 2021). However, many students, particularly in under-resourced schools, lacked access to comprehensive career guidance and hands-on learning opportunities. According to the Association for Career and Technical Education (ACTE, 2022), students engaged in career and technical education (CTE) programs demonstrated improved graduation rates and greater preparedness for post-secondary opportunities. Yet, limited funding and inadequate industry partnerships often restricted the availability of such programs, which left many students ill-equipped to navigate the demands of the modern workforce (Mukerjee, 2024).

From an employer perspective, the shortage of job-ready candidates presented a significant challenge. Many businesses report difficulty in finding employees with critical employability skills such as communication, problem-solving, and adaptability. A report by the National Association of Colleges and Employers (NACE, 2021) found that while 91% of employers prioritize soft (employability) skills in hiring decisions, only 42% believed that recent graduates possessed these competencies. The disconnects between employer expectations and graduate preparedness led to longer hiring processes, increased training costs, and reduced productivity (A. P. Carnevale et al., 2022).

The economic implications of limited career awareness and employability skills were substantial (Osmani et al., 2019). A workforce that lacked essential skills contributed to higher unemployment rates, reduced earning potential, and slower

economic growth (A. P. Carnevale et al., 2022). The U.S. Chamber of Commerce Foundation (2021) highlighted that closing the skills gap could add an estimated $2.5 trillion to the U.S. GDP over the next decade. Stakeholders that continue to address this issue understand the need for targeted interventions such as early career exploration, mentorship programs, and experiential learning opportunities that align education with industry needs (Li, 2022).

Design Thinking Process

Design thinking was described as a human-centered, iterative approach to problem-solving which has been known to utilize empathy, creativity, and experimentation (Gallagher & Thordarson, 2020). The design thinking process originated in fields such as engineering and design (Dam & Siang, 2024). Moreover, the design thinking process has since expanded into diverse industries, such as business, healthcare, and education (Dam & Siang, 2020). The methodology was particularly effective for tackling complex, ill-defined problems, as the design thinking process commonly emphasized understanding user needs, exploring multiple solutions, and refining ideas through iterative prototyping and testing (Gao et al., 2020).

The design thinking process consisted of five distinct stages—empathize, define, ideate, prototype, and test (Dam & Siang, 2024). Each stage assisted facilitators in gaining a deeper understanding of the user needs and in the development of innovative solutions (Gallagher & Thordarson, 2020). The first stage, which is the empathy stage, involved gathering qualitative and quantitative data to understand the challenges faced by high school graduates regarding career awareness and employability skills. Surveys and structured interviews were conducted with students, educators, and employers to identify

key gaps in skill development and career preparedness (Dam, 2025; Dam & Siang, 2020). Stakeholders included recent graduates, school administrators, career counselors, and industry professionals, who provided diverse perspectives on the issue. The central problem employers highlighted were the deficiencies in soft skills such as teamwork, critical thinking, and adaptability, while students expressed concerns about the lack of career guidance and exposure to real-world job expectations. After immersing themselves in the experiences of stakeholders, the design team gained valuable insights that informed the subsequent stages of the process.

Findings from the empathy stage were synthesized to construct a clear and actionable problem statement. The data analysis revealed a disconnect between academic curricula and workforce demands, which further indicated that many students graduated without the necessary skills to secure meaningful employment (A. P. Carnevale et al., 2022). The problem was framed as: *How might we bridge the employability skills gap among high school graduates by improving career awareness and skill development opportunities?* Reframing the problem ensured that the ideation process remained focused on developing practical and scalable solutions that addressed the needs of students and employers alike (Dam & Siang, 2024). The central problem underwent careful refinement, reframing, and development during the second stage, which was the define stage. The define stage consisted of gathering and understanding the problem with a strong emphasis on synthesizing the data collected during the empathy phase (Gallagher & Thordarson, 2020). This approach was very helpful because it provided a more profound understanding of the issue and ensured a concentrated effort in addressing the core challenges.

One technique utilized in the define stage was affinity mapping, which facilitated the organization and synthesis of data collected during the empathize phase (Dam & Siang, 2024). This method involved grouping qualitative data — such as survey responses, interview transcripts, and observational notes—into thematic categories based on recurring patterns and insights (Dam & Siang, 2020). Stakeholders, which included educators, career counselors, and industry professionals, participated in this process by collaboratively categorizing key findings related to skill gaps, career awareness deficiencies, and employer expectations. The affinity mapping technique revealed that the most significant challenges faced by high school graduates included a lack of experiential learning opportunities, inadequate exposure to industry expectations, and insufficient soft skills development. Additionally, the affinity map highlighted disparities between the skills emphasized in traditional curricula and those demanded in the job market. The findings refined the problem statement, which better helped to ensure that the subsequent ideate phase remained focused on addressing the most pressing concerns through targeted interventions.

The third stage of the design thinking process is the ideation phase (Gao et al., 2020). During the ideation phase stakeholders collaborated to brainstorm innovative solutions that would potentially enhance career readiness (Dam & Siang, 2024). Educators, career advisors, and industry representatives participated in workshops where they proposed various interventions, including mentorship programs, internship opportunities, and career-focused curricula (Brown, 2008). Brainstorming techniques such as role-storming were employed to generate a broad range of ideas (Dam & Siang, 2024). Role-storming encouraged participants to take on different personas, such as a

hiring manager, a student with limited resources, or a vocational training expert, to develop solutions from multiple perspectives (Dam & Siang, 2024). This technique allowed stakeholders to empathize with diverse user experiences and propose interventions tailored to the specific needs of students and employers (Gao et al., 2020). The process generated ideas such as industry-driven certification programs, hands-on career simulations, and personalized career coaching models. The goal was to identify solutions that could be realistically implemented within existing educational frameworks while ensuring long-term sustainability.

The most promising ideas from the ideate phase were translated into prototypes — tangible models of potential solutions (Gao et al., 2020). One of the key prototypes included a structured career development program incorporating hands-on workshops, industry-led training sessions, and internship placements. Another prototype involved the creation of a digital career readiness platform that provided students with self-assessment tools, career exploration resources, and skill-building exercises (Dam & Siang, 2020). The prototypes were tested on a small scale within selected high schools to evaluate their effectiveness and identify areas for improvement.

The final stage of the design thinking process involved testing the prototypes through pilot programs and collecting feedback from students, educators, and employers (Gao et al., 2020). The primary objective of this stage was to determine the effectiveness, usability, and impact of the proposed interventions (Kelley & Kelley, 2013). Various evaluation techniques, such as usability testing, focus groups, and follow-up surveys, were implemented to assess how well the solutions addressed the employability skills gap (Dam & Siang, 2024).

The career awareness and employability skills workshops were a central focus during the testing phase. These workshops were designed to provide students with hands-on experiences, career exploration opportunities, and direct engagement with industry professionals. Usability testing allowed facilitators to refine the workshop content based on student engagement levels and comprehension (Gallagher & Thordarson, 2020). Focus groups with students and educators provided qualitative insights into the effectiveness of workshop activities in enhancing career readiness (Dam & Siang, 2024). Students reported increased clarity regarding career pathways, while educators noted improvements in students' confidence and willingness to explore various industries.

Additionally, post-workshop surveys gathered quantitative data on the impact of these sessions. The results indicated that students who participated in the workshops demonstrated greater awareness of employability skills and an improved ability to articulate their career goals. Employers involved in these workshops reported a positive shift in students' readiness for professional environments. Based on stakeholder feedback, refinements were made to enhance the structure and accessibility of the workshops. The iterative nature of design thinking allowed for continuous improvements, which insured that the final solutions effectively addressed the employability skills gap and remained adaptable to evolving workforce demands (Gao et al., 2020).

Empathy Phase

The researcher utilized the empathy stage to gain a deeper understanding of the employability skills gap, and the challenges related to career awareness among high school graduates. The empathy stage consisted of gathering qualitative and quantitative research to collect insights directly from students, educators, and employers (Dam &

Siang, 2020). A mixed-methods approach was utilized to ensure a comprehensive exploration of the issue, which incorporated document analysis, focus groups, and surveys. The researcher utilized these empathy-generating techniques to better understand and assist in the identification of key concerns, expectations, and areas of improvement from multiple perspectives (Gao et al., 2020).

Data Collection Methods

Three primary data collection methods were employed:

- **Document Analysis:** Reviewing existing reports, educational policies, and curriculum guidelines related to career readiness (Mintrop, 2016).
- **Focus Groups:** Engaging stakeholders in discussions about skill gaps and career guidance experiences (Mintrop, 2016).
- **Surveys (*Qualtrics*-based):** Distributing structured questionnaires to students, teachers, and employers to quantify findings (Mintrop, 2016).

Document Analysis. A thorough review of government reports, academic studies, and educational policy documents provided a foundational understanding of career readiness trends. Sources such as labor market demand reports and curriculum guidelines were analyzed to assess how well academic programs aligned with workforce expectations (Gibney & Rauner, 2021). Findings indicated a misalignment between school curricula and industry needs, particularly in areas such as critical thinking, teamwork, and digital literacy. The analysis also revealed that many schools lacked structured career guidance programs, leaving students unprepared for post-graduation transitions.

Additionally, career preparation exercises from high school websites were examined to evaluate the quality and accessibility of resources provided to students. These exercises included resume-building activities, mock interviews, and career exploration modules. Findings showed that while some schools offered structured career preparation tools, these resources were often inconsistent, outdated, or lacked engagement strategies. Moreover, most materials focused primarily on college readiness rather than vocational or employment pathways, further widening the gap for students who did not pursue higher education.

An additional analysis source was the National Career Readiness Certificate (NCRC) framework, which outlined essential competencies for workforce readiness. This framework was reviewed to assess how well high school programs aligned with key career competencies, such as applied mathematics, workplace documents, and graphic literacy. The analysis revealed that only a small percentage of schools integrated these competencies into their career readiness curricula, limiting students' exposure to real-world job expectations (Doherty-Restrepo et al., 2023).

Findings from document analysis confirmed that career readiness programs were often fragmented, with limited career exposure opportunities and a lack of hands-on skill-building experiences. Many students reported feeling unprepared to enter the workforce due to the absence of structured employability training and real-world application exercises.

Empathy Open Ended Surveys (Qualtrics-Based). The researcher obtained formal approval from the superintendent to conduct the study. After presenting the research proposal, the researcher provided a detailed explanation of the study's purpose

and rationale, which emphasized the need to assess students' career awareness, employability skills, and overall readiness for post-secondary opportunities. The proposal outlined the significance of understanding both student and teacher perspectives to identify gaps in career preparation and inform potential improvements in school-based initiatives.

Following a careful review of the research proposal, the superintendent approved the study, recognizing its alignment with the district's educational priorities. The superintendent underscored the district's commitment to enhancing college and career awareness, as well as strengthening job readiness skills for all students. This approval reflected the district's dedication to ensuring that students received comprehensive support in their transition from high school to the workforce or higher education. The researcher created open-ended anonymous survey using *Qualtrics* which consisted of the following questions.

The researcher developed the following research questions to guide the research.

Table 1

Research Questions & Data Collection

Qualtrics Empathy Survey Questions – Student Survey
• How well did your school prepare you with the skills needed to enter the workforce (e.g., communication, problem-solving, teamwork)?
• What career guidance resources were available to you, and how effective were they in helping you explore career options?
• What challenges did you face in developing employability skills, such as resume writing, interview preparation, and professional communication?
• To what extent did your school provide exposure to real-world career experiences, such as internships, job shadowing, or mentorship programs?

- What additional support or resources would have better prepared you for entering the workforce after graduation?

The researcher utilized thematic analysis to assess the data collected from open-ended survey responses. Thematic analysis, a qualitative research method, was employed to identify, analyze, and interpret patterns within the dataset (Gallagher & Thordarson, 2020). This approach allowed for a systematic examination of recurring themes and insights, which enabled a comprehensive understanding of participants' perspectives on career readiness and workforce preparation (Gallagher & Thordarson, 2020). By categorizing responses into key themes, the researcher utilized thematic analysis to facilitate the identification of common successes, challenges, gaps, and areas for improvement in high school career preparation programs.

One of the primary benefits of thematic analysis was its flexibility, which allowed the researcher to analyze rich, detailed qualitative data without being constrained by rigid preexisting frameworks (Gallagher & Thordarson, 2020). This flexibility was particularly valuable given the diverse range of perspectives among students, educators, and industry professionals (Gallagher & Thordarson, 2020). The thematic analysis enabled the researcher to extract the nuanced insights that might have been overlooked during a strictly quantitative analysis. Additionally, utilizing the thematic analysis provided a structured yet interpretative framework for understanding the participants lived experiences, which ensured that the findings were both data-driven and contextually relevant (Gallagher & Thordarson, 2020).

The researcher utilized the open-ended survey format to further strengthen the research process by allowing participants to express their thoughts in their own words,

rather than being limited to predefined response options (Gallagher & Thordarson, 2020). The researcher selected this approach with the goal to deeper exploration of individual experiences, which revealed a more personalized account of challenges, successes, and recommendations that would not have been captured through closed-ended survey questions (Dam, 2025). Open-ended responses also minimized researcher bias, as themes emerged directly from participants' narratives rather than being dictated by a predetermined set of categories (Gallagher & Thordarson, 2020). By leveraging thematic analysis in conjunction with open-ended survey data, the researcher was able to generate a rich, in-depth understanding of career readiness challenges and potential solutions, providing valuable insights for educational policymakers, administrators, and industry stakeholders.

A structured survey was designed and distributed through *Qualtrics*, targeting 20 high school students, 20 educators, and 20 employers from various industries. The survey measured respondents' perceptions of career readiness and skill development opportunities. Key findings for each question have been listed below.

Analysis Student Survey Question One. *How well did your school prepare you with the skills needed to enter the workforce (e.g., communication, problem-solving, teamwork)?*

Inquiry Objective:

This question aimed to assess students’ perceptions of their preparedness for professional environments. It sought to determine whether their high school experience adequately equipped them with the necessary employability skills.

Findings:

Among the 20 student participants, 15 reported feeling inadequately prepared for workforce entry. These students overwhelmingly indicated that their high school education prioritized traditional academic subjects, such as mathematics, science, and literature, but did not provide direct instruction on soft skills such as communication, teamwork, and problem-solving. Many participants noted that while they developed critical thinking skills through coursework, they did not receive explicit instruction on workplace communication, collaboration, or adaptability. The remaining five students expressed that they felt somewhat prepared, citing their involvement in extracurricular programs, student leadership roles, or part-time employment, which provided them with informal exposure to professional environments.

Several students elaborated on their concerns, with one stating, *"I know how to write an essay, but I don't know how to communicate professionally in a work setting."* Another student noted, *"We worked in groups for school projects, but that's not the same as teamwork in a job. I don't feel confident working with people in a professional environment."* These responses illustrated the gap between academic learning and practical workforce application, with students recognizing that school-based group work did not always translate into effective workplace collaboration.

Synthesis Student Survey Question One. The findings suggested a disconnect between academic instruction and workforce preparation. While traditional subjects such as mathematics and science remained central to the curriculum, these subjects did not necessarily cultivate essential workplace skills. Without structured career preparation, students entered the workforce without confidence in their ability to perform in a

professional setting. The results reinforced the need for a more deliberate integration of soft skills training into high school curricula, ensuring that students developed practical competencies such as effective communication, problem-solving, and teamwork in addition to academic proficiency.

Analysis Student Survey Question Two. *What career guidance resources were available to you, and how effective were they in helping you explore career options?*

Inquiry Objective:

This question sought to evaluate the availability and effectiveness of career guidance resources, including counseling services, resume workshops, and job fairs, in helping students explore career paths.

Findings:

Among the 20 students surveyed, nine reported having access to career counseling and workshops, though their effectiveness varied. Of these nine, only four found the resources useful, while the other five stated that the guidance was generic, focused primarily on college admissions rather than workforce preparation, and lacked personalization. The remaining 11 students stated that their schools offered little to no career guidance, leaving them uncertain about their career options. Many participants reported that career counseling services, if available, were understaffed and difficult to access, with long wait times and limited one-on-one engagement.

One student described their experience, saying, *"I went to see the career counselor once, and all they did was hand me a pamphlet about college majors. They didn't ask me what I was interested in or help me explore career options beyond college."* Another student shared, *"The only career event my school had was a job fair,*

but it was more focused on summer jobs and didn't help me understand long-term career paths." The responses highlighted a systemic issue in career counseling services, where resources existed but did not adequately address students' diverse career aspirations, particularly those students who sought direct workforce entry instead of higher education.

Synthesis Student Survey Question Two. The inconsistency in career guidance availability highlighted significant disparities among schools. Students who received structured career support expressed greater clarity in their career paths, while those without access reported uncertainty and a lack of direction. The findings emphasized the need for standardized, school-wide career counseling programs that were tailored to both college-bound and workforce-bound students. Additionally, career guidance needed to be personalized and proactive, rather than a passive service that students had to seek out on their own. The results suggested that increasing staffing for career counseling departments and expanding the scope of career exploration beyond traditional college pathways would better serve students' diverse needs.

Analysis Student Survey Question Three. *What challenges did you face in developing employability skills, such as resume writing, interview preparation, and professional communication?*

Inquiry Objective:

This question sought to identify obstacles students encountered when developing essential employability skills required for workforce entry.

Findings:

Seventeen out of 20 students reported difficulties in resume writing, interview preparation, and professional communication. Many students indicated that they were

unfamiliar with how to structure a resume, write a cover letter, or answer common interview questions. Those students who had participated in resume workshops or interview training found that the sessions were optional and infrequent, and they felt unprepared for real-world job applications. Several students noted that when applying for jobs, they had to rely on online resources, family members, or trial-and-error approaches rather than structured instruction from their schools.

One student reflected, *"I didn't know how to write a resume until I googled it. Even then, I wasn't sure if I was doing it right."* Another stated, *"My school offered a resume workshop, but it was during lunch, so I didn't go because I needed that time to eat. It wasn't built into the regular curriculum."* These responses demonstrated that while some schools attempted to provide career readiness resources, their delivery methods were inconvenient or insufficiently integrated into students' schedules.

Synthesis Student Survey Question Three. The findings underscored the lack of structured employability training within school curricula. Many students left high school without fundamental job application "essential" skills, which placed them at a disadvantage in more competitive job markets. This suggested a need for mandatory and consistent employability training, rather than isolated, optional workshops, to better ensure that all students were adequately prepared.

Analysis Student Survey Question Four. *To what extent did your school provide exposure to real-world career experiences, such as internships, job shadowing, or mentorship programs?*

Inquiry Objective:

This question aimed to assess students' opportunities to gain hands-on experience in professional environments.

Findings:

Six out of 20 students had participated in internships, job shadowing, or mentorship programs, while 14 had no real-world career exposure. Those who had such experiences found them highly beneficial, stating that they gained a clearer understanding of workplace expectations, professional communication, and industry-specific skills. However, the majority of students reported that their schools did not actively promote or facilitate these opportunities, leaving them to seek out internships or mentorships on their own.

One student noted, *"I only got an internship because my mom knew someone. If I had relied on my school, I wouldn't have had the chance."* Another student expressed frustration, saying, *"I wish our school partnered with businesses to offer internships. We had no way to get real-world experience before graduating."* These responses highlighted an accessibility gap, where students who had personal connections were able to secure opportunities, while others lacked the same exposure.

Synthesis Student Survey Question. The findings highlighted a gap between student interest and available opportunities. Without school-industry collaborations, students lacked exposure to workplace environments before graduation. Expanding internship programs and formalizing mentorship initiatives would provide students with practical workforce experience, making their transition into employment smoother.

Educator Responses

After conducting the *Qualtrics* survey with high school students to assess their perceptions of career readiness, the researcher extended the study to include educators, such as teachers, career counselors, and other educational professionals. This expansion aimed to gain a broader perspective on the strengths and limitations of career readiness initiatives within the school system. Educators play a critical role in preparing students for the workforce by integrating employability skills into the curriculum, providing career guidance, and facilitating real-world learning experiences. By surveying this group, the researcher sought to examine how effectively schools equip students with the necessary skills for post-graduation success, as well as to identify barriers that educators face in delivering comprehensive career preparation. The inclusion of educators' perspectives allowed for a more holistic analysis of career readiness efforts, ensuring that findings reflected not only student experiences but also the structural and instructional factors that influence workforce preparation. The following questions were developed in an effort to better understand the perspectives of the educators and school officials (see Table 2).

Table 2

Research Questions & Data Collection

Qualtrics Empathy Survey Questions – Educator Survey
• How effectively did the current curriculum integrate employability skills and workforce readiness into classroom instruction?
• What challenges did you encounter when trying to prepare students for career readiness?
• How accessible and effective were the career resources available to students in your school?

- To what extent did your school collaborate with industry professionals to provide real-world career exposure to students?
- What additional resources or changes would enhance career readiness support for students?

Analysis Educator Survey Question One. *How effectively did the current curriculum integrate employability skills and workforce readiness into classroom instruction?*

Inquiry Objective: This question sought to evaluate the extent to which workforce readiness skills were embedded into academic instruction.

Findings:

Among the 20 educators surveyed, 15 stated that employability skills were not systematically integrated into the curriculum. Career preparation was treated as an extracurricular initiative rather than a structured academic component. The remaining five educators noted that some employability content was included in elective courses but was not mandatory for all students.

Educator Survey Question One Synthesis. These findings indicated that career preparation remained secondary to academic instruction, despite the growing need for workforce readiness skills. Without curriculum-wide integration, many students missed out on essential employability training, leaving them underprepared for professional environments.

Educator Survey Question Two Analysis. *What challenges did you encounter when trying to prepare students for career readiness?*

Inquiry Objective: This question explored the barriers educators faced in delivering career readiness instruction.

Findings:

Seventeen out of 20 educators cited a lack of professional development, limited resources, and time constraints as major challenges. Many stated that they had not received training in teaching employability skills, making it difficult to integrate them into coursework. The findings suggested that teacher training programs needed to include career education methodologies. Without proper support, educators struggled to bridge the gap between academic instruction and workforce preparation.

Educator Survey Question **Three:** *How accessible and effective were the career resources available to students in your school?*

Inquiry Objective: This question was selected to evaluate how the lack of professional development, limited resources, and time constraints coincided with educators' capacity to teach employability skills, and whether current teacher training programs adequately prepare educators to integrate career education methodologies into academic instruction.

Findings:

The responses indicated significant disparities in the availability and effectiveness of career resources across different schools. Among the 20 participants, eight reported that their schools provided some form of career support, such as career counseling services, job fairs, or resume-building workshops. However, only three of these respondents considered these resources to be readily accessible and highly effective. Several educators noted that while career services existed, they were often underutilized

due to lack of student awareness, limited staffing, or scheduling conflicts with academic coursework.

Participants from schools with well-established career centers stated that students who actively sought assistance were able to access valuable career-related guidance, but many students were either unaware of these services or did not prioritize them. Additionally, another eight educators expressed concerns about outdated career resources, limited industry connections, and an overemphasis on traditional four-year college pathways rather than diverse career options. Several respondents mentioned that career readiness programs often lacked funding, which restricted their ability to offer individualized career coaching or maintain updated materials on emerging career fields.

Educator Survey Question Three Synthesis. The findings suggested that while career resources were available in most schools, their accessibility and effectiveness varied widely. The data revealed a need for schools to enhance student awareness of career services, improve the quality of resources, and integrate career readiness initiatives into academic programming. Additionally, increasing funding and staffing for career services could help bridge the gap between available resources and student engagement.

Educator Survey Question Four: *To what extent did your school collaborate with industry professionals to provide real-world career exposure to students?*

Inquiry Objective: This question evaluated the extent to schools collaborated with industry professionals to enhance student career readiness. The question was selected to better understand how often and how meaningfully these partnerships were to students. Additionally, the question was used to better understand the value of these partnerships and whether they provided authentic, real-world career exposure.

Findings:

The majority of respondents (14 out of 20) reported minimal collaboration between their schools and industry professionals. While some schools partnered with local businesses for career fairs or guest speaker sessions, most educators acknowledged a lack of structured, ongoing engagement with industry professionals. Four respondents described instances where students participated in mentorship programs, job shadowing, or industry-led workshops, but these opportunities were typically offered to a select group of students rather than being widely accessible.

Several educators noted logistical barriers to industry collaboration, including time constraints, lack of administrative support, and difficulty establishing partnerships with local businesses. Additionally, educators reported that some employers were hesitant to engage with schools due to concerns about student preparedness or liability issues associated with internship placements. Among the six educators who worked in schools with strong industry connections, they emphasized the benefits of these partnerships in fostering career awareness, networking opportunities, and practical skill development.

Educator Survey Question Four Synthesis of Findings. The findings highlighted a need for stronger collaboration between schools and industry professionals to enhance real-world career exposure for students. The data suggested that while some schools had successfully implemented industry partnerships, many others faced structural and logistical barriers that limited these opportunities. To address these challenges, schools could consider formalizing industry engagement initiatives, creating advisory boards with local employers, and expanding access to mentorship programs to reach a broader range of students.

Educator Survey Question Five: *What additional resources or changes would enhance career readiness support for students?*

Inquiry Objective: This question was selected to evaluate the types of resources or programmatic changes educators believe are necessary to strengthen career readiness support for students. It seeks to identify gaps in current offerings and gather suggestions for improvement. The goal is to inform strategies that better align school supports with student career preparation needs.

Findings:

Educators provided a range of recommendations for improving career readiness initiatives in high schools. The most common suggestion mentioned by 15 respondents was the need for more structured career education within the academic curriculum. Many educators emphasized that career readiness should not be limited to elective courses or optional workshops but should instead be integrated into core subjects. Suggestions included incorporating career exploration assignments into English or Social Studies classes, offering career development courses as a graduation requirement, and embedding soft skills training into everyday classroom activities.

Another key recommendation, cited by 12 participants, was the expansion of experiential learning opportunities, such as internships, apprenticeships, and cooperative education programs. Respondents believed that real-world experience was essential in preparing students for the workforce and recommended that schools develop stronger partnerships with local businesses, trade organizations, and postsecondary institutions to facilitate hands-on learning experiences.

Additionally, several educators (eight out of 20) advocated for enhanced career counseling services, including increased staffing for guidance departments, more personalized career coaching, and digital career exploration tools. Some participants suggested leveraging online career readiness platforms to help students explore career pathways, complete skills assessments, and build professional networks.

Educator Survey Question Five Synthesis of Findings. The findings demonstrated a consensus among educators that many of the career readiness initiatives needed to be more comprehensive, structured, and accessible. The data suggested that schools should prioritize integrating career education into the curriculum, expanding hands-on learning opportunities, and strengthening career counseling services. Furthermore, increasing collaboration with industry professionals and leveraging technology-based career exploration tools were identified as effective strategies for improving workforce preparedness among students.

Industry Partners Perspectives

After gathering insights from educators, the researcher extended the study to industry professionals to gain a broader understanding of workforce expectations and the preparedness of recent high school graduates. This phase of the research aimed to assess the alignment between high school career readiness programs and the skills required for entry-level employment. By surveying employers, hiring managers, and industry experts, the researcher sought to identify the key competencies lacking in recent graduates, challenges faced by employers in hiring and training new employees, and recommendations for improving career readiness initiatives in high schools. The

following focus group interview questions were administered to industry professionals (See Table 3).

Table 3

Industry Professionals Focus Group Questions

Industry Professionals – Focus Group Questions
• What essential employability skills did you find lacking in recent high school graduates entering the workforce? • How well did high school career preparation programs align with the skills and competencies required for entry-level jobs in your industry?

Industry Professional Survey Question One. *What employability skills have you observed recent high school graduates demonstrating well, and which areas do you feel would benefit from further development to support their success in the workforce?*

Inquiry Objective: This question sought to determine the specific workforce competencies employers found to be strengths as well as competencies that employers found to be deficient among recent graduates.

Findings:

The researcher noted that 18 out of 20 employers reported deficiencies in communication, critical thinking, and adaptability among high school graduates. The results emphasized the necessity of embedding soft skills training into high school curricula. Employers stated that they required workplace-ready graduates with both technical and interpersonal competencies.

The researcher utilized multiple data collection methods in an effort to gain a broader perspective of the strengths and weakness from the perspectives of all

stakeholders. The difference between the focus group questions and the survey question was primarily based on the purpose, depth, and method of delivery used to gather data from industry professionals.

The focus group questions were designed to prompt in-depth, qualitative discussion about workforce readiness and observed skill gaps. These questions allowed participants to elaborate on their personal experiences and professional observations in a collaborative setting, where ideas were expanded and clarified through dialogue. The researcher conducted a series of focus group interviews to gain a comprehensive understanding of the employability challenges faced by recent high school graduates. The research team engaged with key stakeholder groups which included recent graduates, educators, and industry professionals, by conducting separate focus groups to ensure the distinct perspectives of each group were fully examined. This method aligned with the design-thinking process, as the methodologies centered participant experiences and supported the co-construction of meaning (Gallagher & Thordarson, 2020).

In contrast, the survey question was distributed using a Likert scale and open-ended prompts to collect broader, more quantifiable data. While the focus groups allowed for rich, detailed responses, the survey provided an overview of trends by capturing individual responses from a wider group of participants. The survey asked industry professionals to identify employability skills that students demonstrated well, as well as areas where further development was needed. This approach offered a balanced perspective on program effectiveness and student readiness.

By incorporating multiple methods of data collection such as surveys and focus groups—the researcher strengthened the study through triangulation, which further

allowed for both depth and breadth of insight. This mixed-methods approach ensured that industry feedback was captured in a robust, comprehensive manner, which helped to validate the findings across different formats and participant groups.

Differentiating Research Approaches: Exploring Industry Perspectives on Employability Skills

The two research questions presented differed in both intent and approach**,** one from the focus group protocol and one from the industry professional survey offered complementary yet distinct perspectives on employability skill gaps among high school graduates.

The focus group question**,** *"What essential employability skills did you find lacking in recent high school graduates entering the workforce?"*, sought to generate open-ended, qualitative insight through collective dialogue. The purpose of this question was to encourage industry professionals to share specific, real-world experiences and reflective observations regarding skill deficiencies they had encountered among new workforce entrants. By asking participants to identify what was *lacking*, the researcher aimed to uncover critical skill gaps that posed barriers to entry-level success. This line of questioning allowed the research team to gather in-depth and nuanced context about employers' frustrations, unmet expectations, and the consequences of these skill deficiencies within various industries.

In contrast, the survey question, *"What employability skills have you observed recent high school graduates demonstrating well, and which areas do you feel would benefit from further development to support their success in the workforce?"*, adopted a more balanced and reflective structure**,** this method allowed respondents to acknowledge

both strengths and areas for improvement**.** This approach was intended to elicit quantifiable, individual-level responses that could be analyzed across a broader sample of industry participants. By highlighting what students were doing well in addition to what they lacked, the research team sought to capture a holistic picture of graduate preparedness and avoid framing the inquiry solely around deficit.

The key difference between the two questions lied in the delivery and purpose: the focus group question emphasized qualitative depth and collective discussion of deficiencies, while the survey question promoted a more structured and individualized response that included both positive attributes and developmental needs**.**

Through these distinct questions, the research team hoped to gain a comprehensive understanding of how industry professionals perceived the current state of high school graduates' workforce readiness. By intermingling the qualitative findings from focus group discussions with the quantitative and thematic trends derived from the survey data, the team aimed to triangulate data sources and uncover patterns related to the alignment (or misalignment) between high school preparation programs and industry expectations**.** These insights were expected to inform actionable recommendations for educators, counselors, and policy makers focused on improving college and career readiness programming in secondary education settings.

Focus Group

The researcher conducted a series of focus group interviews in an effort to gain a more comprehensive understanding of workforce readiness challenges. The researcher collaborated with key stakeholders, which included recent high school graduates, educators and administrators, and professionals from various industries. Interviews, as a

qualitative research method, provide in-depth insights into participants' experiences, perspectives, and concerns, making them an essential tool in the design-thinking process (Braun & Clarke, 2019). By engaging directly with these three distinct groups, the researcher sought to explore gaps in career preparedness from multiple angles and identify potential solutions. Each focus group interview was conducted separately to ensure that the specific concerns of each group were fully examined.

Focus Group 1: Recent High School Graduates and Career Readiness Gaps.

The first focus group consisted of recently graduated high school students who had entered the workforce or post-secondary education. These participants overwhelmingly expressed that they felt unprepared for career decision-making and lacked fundamental job search skills. Many reported that while they had been exposed to some career-related lessons in high school, these were often limited to brief discussions rather than in-depth skill-building experiences.

One of the most common concerns among the recent graduates was a lack of real-world application in their education. Several participants noted that while they had completed coursework in subjects such as math, science, and literature, they had little to no experience with practical employability skills. Many of the graduates expressed confusion about the basic workforce entry processes, such as completing a resume, preparing for interviews, and understanding workplace expectations. Some students shared that they were unaware of how to search for jobs effectively, what types of careers were available to them, or how to begin building a professional network.

Additionally, many participants described feeling uncertain about career pathways because they had not received sufficient guidance on the various options available to

them. Some mentioned that they had only been encouraged to pursue four-year college degrees and were unaware of lucrative trade careers or alternative education pathways. Others explained that career fairs and guest speakers had been helpful, but these events were infrequent and did not provide hands-on experience or practical steps for entering the workforce. The researcher found that this lack of career awareness and preparedness contributed to anxiety and hesitation among students as they transitioned from high school to the professional world.

The consensus among the participants was that high schools needed to offer more structured and mandatory career education programs. Many suggested incorporating career-related coursework earlier in their education rather than waiting until senior year. Others recommended integrating resume writing, mock interviews, and networking opportunities into the standard curriculum. The researcher determined that these responses underscored the necessity of a more hands-on, career-focused approach in high school education to bridge the gap between academic instruction and workforce readiness.

Focus Group 2: Educators and Administrators on Curriculum and Career Alignment. The second focus group consisted of high school educators and administrators who provided insight into the challenges of integrating career readiness into the existing curriculum. Participants acknowledged the growing need for employability training and real-world skill development, yet they expressed concerns about structural barriers that hindered effective implementation.

One of the most frequently cited issues was the disconnect between the standard high school curriculum and the skills required for workforce success. Educators reported

that while career readiness was recognized as important, it was often treated as an extracurricular focus rather than an academic priority. Several participants noted that career-related lessons were typically assigned to advisory periods, elective courses, or one-off workshops rather than being embedded into core academic subjects. This structure resulted in inconsistent exposure to career development, with some students receiving more guidance than others based on their course selections or school resources.

Teacher workload was another significant barrier to implementing career readiness programs. Educators expressed that they were already managing rigorous academic standards, standardized testing requirements, and administrative duties, which left little time to incorporate career preparation into their lessons. Many participants shared that while they wanted to provide career guidance, they lacked the necessary professional development and resources to do so effectively.

Administrators echoed these same concerns, as many administrators noted that while some schools had career counseling services, career counseling resources were often limited due to budget constraints or staffing shortages. One administrator explained that a single career counselor might be responsible for hundreds of students, which often made it difficult to provide individualized support. Many educators emphasized the need for dedicated career readiness for personnel, more structured industry partnerships, and additional funding for career exploration programs. Despite these challenges, educators were supportive of expanding career readiness efforts.

Focus Group 3: Industry Professionals and Workforce Gaps. The third focus group consisted of professionals from healthcare, manufacturing, construction trades, and aerospace industries. The researcher conducted separate interviews within each industry

to examine specific workforce readiness challenges and employer expectations. These particular industries were selected based on trends identified in the literature review and supported by data collected in Chapter Two, which highlighted sectors experiencing significant concerns related to the preparedness of entry-level workers. Industry professionals were invited to participate in the focus group based on their expressed interest in forming partnerships with the local school district. These were not pre-existing, standing partnerships; rather, the professionals became involved specifically for this project due to their desire to support student transition into the workforce and to address their own employment gaps. Many of these professionals also expressed interest in developing internships and assistantship opportunities to help students gain hands-on experience while simultaneously strengthening their future talent pipeline.

Healthcare and Nursing Industry. The researcher first met with healthcare professionals, which included nurses, hospital administrators, and clinical staff. These professionals expressed concerns about the preparedness of high school graduates entering entry-level healthcare roles. Many reported that while their institutions had training programs designed to onboard new employees, recent graduates often lacked basic professionalism and workplace etiquette. One of the most pressing issues was the lack of reliability among younger workers. Employers described instances where new hires failed to show up for scheduled shifts or left jobs within a few weeks. Several healthcare professionals emphasized that reliability and accountability were critical in medical environments, as patient care depended on consistency and teamwork. Additionally, participants noted that young employees often struggled with effective communication, particularly when interacting with patients and families. Many of the

students reportedly lacked confidence in professional settings and had difficulty handling stressful situations. The researcher found that these challenges underscored the importance of integrating soft skills training; such as communication, professionalism, and patient interaction, into high school career education programs.

Manufacturing, Construction, and Pipefitting. In the second set of interviews, the researcher spoke with representatives from manufacturing companies, the pipefitters' union, and a local steel company. Employers in these industries reported difficulty in attracting high school graduates to their apprenticeship programs, despite offering competitive wages and on-the-job training. Many of the employers noted that young workers lacked consistency and commitment. The younger workers reportedly showed up for work sporadically or quit without notice. Safety concerns were also a major issue, particularly in construction and pipe fitting. The industry professionals explained that high school graduates often did not take workplace safety regulations seriously and failed to follow protocols, which increased the risk of workplace accidents. Several industry professionals in these industries emphasized the need for stronger partnerships between schools and trade organizations. Many of the employers suggested that high schools should introduce students to hands-on trade experiences earlier to spark interest and provide realistic expectations about careers in manufacturing and skilled trades.

Aerospace and Aviation. The final set of interviews was conducted with professionals from the aerospace and aviation industries. These employers echoed many of the concerns raised in other industries, particularly regarding a lack of attention to detail, difficulty following instructions, and limited awareness of career opportunities. One of the primary concerns was that many high school graduates failed to grasp the

importance of precision and safety in aviation-related work. Employers explained that even entry-level positions required strict adherence to protocols, yet younger workers often struggled with compliance. Additionally, industry professionals noted a lack of recruitment engagement from recent graduates, despite extensive outreach efforts.

Combined Analysis & Synthesis

The researcher conducted a comprehensive analysis of the empathy generators, which included document analysis, surveys, and focus group interviews. The empathy generators revealed a recurring and critical concern: high school graduates were underprepared for workforce entry due to insufficient career readiness training, minimal real-world application, and limited exposure to industry expectations. Each empathetic generator provided valuable insights that reinforced these conclusions, highlighting challenges from multiple perspectives, which included students, educators, and employers. The document analysis revealed a clear gap between educational standards and workforce expectations. The researcher noted that while many high school curricula emphasized academic knowledge, there was limited integration of employability skills such as communication, problem-solving, professionalism, and teamwork. Career readiness programs, where they existed, were often fragmented or inconsistently implemented across schools, leading to disparities in students' preparedness. Furthermore, career resources, such as counseling services and industry partnerships, varied significantly depending on school funding and administrative priorities. The researcher found that many of these documents echoed concerns raised in the surveys and focus group discussions, particularly regarding the lack of standardized career preparation initiatives.

Survey data from students, educators, and employers further substantiated these concerns. Students overwhelmingly reported that they felt unprepared for job searches, resume writing, and interview processes, with many of the participants expressing uncertainties about career options and pathways. Educators, on the other hand, acknowledged the importance of career readiness but cited systemic challenges such as curriculum constraints, competing academic priorities, and limited professional development opportunities in workforce training. The industry professionals also reported frustration with the lack of fundamental employability skills in recent high school graduates, as they noted deficiencies in the student's reliability, teamwork, time management, and professionalism. These survey findings aligned with the document analysis, further illustrating the disconnect between educational objectives and industry requirements.

The researcher’s focus group interviews provided deeper, qualitative insights into these issues. Recent high school graduates articulated their struggles in transitioning from school to the workforce, emphasizing their lack of career awareness and practical job skills. Many felt lost in the job market, as they had not received sufficient guidance on resume development, interview preparation, or professional communication. Educators reiterated the structural barriers limiting their ability to incorporate workforce readiness into classroom instruction, highlighting excessive workloads and competing academic demands. Industry professionals emphasized the tangible consequences of these gaps, reporting difficulty in hiring and retaining young workers due to a lack of engagement, professionalism, and fundamental workplace competencies. Industry professionals expressed concern that young employees failed to grasp the importance of workplace

expectations, including punctuality, teamwork, and following safety protocols, particularly in fields such as healthcare, manufacturing, construction, and aerospace.

Across all empathy generators, the findings indicated that a lack of structured career education and real-world exposure had left students ill-equipped to navigate job markets and workplace environments. The researcher underscored the pressing need for comprehensive career readiness initiatives within high schools to bridge this divide. The findings suggested that addressing these challenges would require a multifaceted approach, which included increased career awareness initiatives, stronger school-industry partnerships, and more structured employability training. By implementing these changes, schools could better align educational outcomes with workforce demands, ultimately improving students' career readiness and long-term employment success.

The Define Phase

The researcher engaged in the defined stage in an effort to better understand the data and look for common themes (Braun & Clarke, 2019). The define stage involved synthesizing the information collected during the empathy phase to clearly articulate the core challenges associated with high school graduates' career readiness (Gallagher & Thordarson, 2020). According to Gallagher and Thordarson (2020), this stage was critical in the design thinking process as it ensured that the problem was well-defined and accurately framed. Tools such as problem statements and user personas allow researchers to create a targeted and structured understanding of the issue, which then informs the ideation and solution-generation process (Braun & Clarke, 2019). According to Gallagher and Thordarson (2020), this stage was critical in the design thinking process as it ensured that the problem was well-defined and accurately framed. Tools such as problem

statements and user personas allow researchers to create a targeted and structured understanding of the issue, which then informed the ideation and solution-generation process (Gallagher & Thordarson, 2020).

The researcher systematically analyzed data gathered from document analysis, surveys, and focus group interviews to identify recurring themes and patterns. In order to organize and conceptualize the findings effectively, the researcher utilized an empathy map and a fishbone diagram. Empathy mapping, a tool often employed in human-centered research, helped in visually representing the thoughts, feelings, challenges, and needs of students, educators, and employers. By categorizing participants' responses into key areas such as career preparedness, employability skills, and workforce expectations, the researcher was able to highlight critical pain points that impacted workforce readiness. The fishbone diagram, also known as the Ishikawa diagram, further facilitated root cause analysis by categorizing underlying factors contributing to the problem (Gallagher & Thordarson, 2020). This visual representation helped the researcher to pinpoint the systemic gaps in career readiness education, which illustrated how limited industry exposure, inconsistent career training, and misalignment between educational objectives and workforce needs collectively hindered students’ transition into employment (Dam & Siang, 2024).

To further analyze and interpret the emerging themes from the fishbone diagram, the researcher conducted an additional focus group consisting of teachers, parents, and industry professionals (Gallagher & Thordarson, 2020). This collaborative discussion allowed stakeholders to engage in a structured "How Might We" exercise, which was a problem-framing approach designed to foster innovative solutions (Brown, 2008). The

"How Might We" exercise has been listed in Appendix A. The goal of the focus group was to validate the themes identified in the initial analysis and explore actionable strategies to address career readiness gaps. Stakeholders recognized several key themes that aligned with the findings from the empathy stage:

1. **Limited Career Awareness and Exposure** – Parents and teachers noted that students had minimal understanding of career pathways, particularly in industries such as manufacturing, healthcare, and aviation, where high-demand jobs were available but remained unfilled. Industry professionals reinforced this concern, stating that outreach efforts often failed to generate student interest, possibly due to a lack of early exposure to career options.
2. **Inconsistent Integration of Career Readiness Training** – Educators acknowledged that employability skills were not systematically incorporated into high school curricula. Teachers reported that they lacked time to embed career education into their lesson plans due to competing academic priorities, while industry professionals expressed concern that schools focused more on standardized testing than on workforce preparation.
3. **Deficiencies in Soft Skills and Workplace Readiness** – Industry professionals emphasized that recent high school graduates frequently lacked fundamental employability skills such as time management, communication, teamwork, and professional conduct. Parents echoed these concerns, stating that schools did not provide enough opportunities for students to practice real-world skills through internships, job shadowing, or mentorship programs.

4. **Barriers to School-Industry Collaboration** – Participants discussed logistical and structural challenges that hindered partnerships between schools and local businesses. Industry professionals indicated a willingness to collaborate with educators, but many noted that formal mechanisms for engagement were either lacking or difficult to navigate. Teachers also highlighted limited resources and administrative support as barriers to establishing sustained industry connections.

Ultimately, the researcher concluded that addressing these challenges required a systemic reevaluation of career readiness education in high schools. Schools needed to prioritize employability training as a core component of the curriculum rather than treating it as an ancillary program. Stronger partnerships between schools and industry professionals would help bridge the gap between academic learning and real-world job expectations, ensuring that students developed both the technical competencies and soft skills necessary for workplace success. Additionally, earlier exposure to career exploration through internships, mentorship programs, and job shadowing experiences was essential in preparing students for workforce entry.

By utilizing the define stage to synthesize findings and clarify the problem, the researcher established a foundation for the next phase — ideation — where potential solutions could be explored and developed. The findings underscored the need for intentional, structured, and collaborative efforts among educational institutions, policymakers, and industry stakeholders to improve career readiness initiatives. By addressing these systemic gaps, schools could ensure that students graduate not only with

academic knowledge but also with the practical skills, confidence, and industry awareness necessary to succeed in the workforce.

Ideate Phase

The ideate phase represented a critical juncture in the design thinking process, where the researcher and stakeholders collaboratively explored potential solutions to address the career readiness gaps identified during the define stage. According to Brown (2008), ideation is the stage in which creative problem-solving techniques are employed to generate a wide range of possible solutions. This phase is essential in design thinking because it encourages divergent thinking, allowing for the exploration of multiple innovative approaches before converging on the most viable solution (Gallagher & Thordarson, 2020). Similarly, Dam and Siang (2024) emphasized that ideation fostered creativity and engagement among stakeholders and helped to ensure that solutions were grounded in real-world needs and perspectives.

To facilitate this process, the researcher assembled a stakeholder research team that consisted of teachers, students, career counselors, and industry professionals. The inclusion of diverse participants was essential to ensure that multiple perspectives informed the ideation process. Teachers provided insight into the challenges of integrating career readiness within academic instruction, students articulated their needs and experiences related to employability preparation, career counselors offered expertise on workforce development strategies, and industry professionals contributed knowledge regarding workforce expectations and skill gaps. By engaging these key stakeholders, the researcher ensured that the ideation phase was both collaborative and solution-oriented.

Based on stakeholder input, the researcher and research team defined the central problem as a lack of career readiness among high school graduates, characterized by deficiencies in soft skills, limited career awareness, and minimal access to mentorship opportunities. The research team utilized this definition to guide the next stages of brainstorming and solution development. During the next stage, which was the ideation phase, collaborative sessions were held with educators, administrators, and industry partners to brainstorm potential interventions. Ideas generated included internship programs, guest speaker series, career fairs, and workshops focused on specific employability skills. Through collaboration with the stakeholders ultimately, the researcher and research team agreed that a two-day, intensive career awareness workshop would provide a manageable, scalable pilot solution. The workshop would include skill-building sessions, resume development activities, professional networking practice, and mock interviews.

Design Thinking Tools for Ideation

During the ideate phase, the researcher utilized two key design thinking tools to generate ideas and possible interventions: brainstorming and the "How Might We" (HMW) framework. Brainstorming was recognized as an ideation technique that encourages participants to generate as many ideas as possible without immediate judgment or critique (Dam & Siang, 2024). The researcher facilitated multiple brainstorming sessions with the stakeholder research team and encouraged open discussion about potential career readiness interventions. Participants were prompted with guiding questions such as: (a) What strategies could better prepare high school students for workforce entry? (b) How can schools integrate career readiness training

without overwhelming existing curricula? (c)What role should industry professionals play in career awareness initiatives?

These discussions yielded a broad range of ideas, including enhanced internship programs, dedicated employability courses, career mentorship initiatives, and increased industry-school partnerships. The researcher documented all suggestions and categorized them into themes to identify overlapping and high-priority areas. "How Might We" (HMW) Framework – The "How Might We" framework is an ideation tool designed to reframe challenges into opportunities by structuring problem statements as open-ended questions (Gallagher & Thordarson, 2020). The researcher guided the stakeholder research team in converting key problem areas identified during the define phase into HMW statements. Some examples included: (a) How might we provide students with earlier and more consistent exposure to career pathways? (b) How might we ensure that students develop strong employability skills before graduation? (c) How might we create stronger collaborations between schools and industries to enhance real-world career experiences?

This structured approach allowed stakeholders to approach problem-solving creatively which ensured that proposed solutions remained focused on the core challenges. Through the ideation process, the stakeholder research team identified a Career Awareness Workshop as a tangible and actionable prototype/ intervention to address the identified career readiness gaps. The workshop was selected with the goal to Provide students with practical employability skills training, including resume writing, interview preparation, and professional communication.

- Offer career awareness sessions featuring industry professionals who would present real -world insights into various career fields.
- Include interactive career exploration activities, such as job shadowing opportunities, mentorship pairings, and industry-led simulations.
- Facilitate school-industry networking, allowing students to engage directly with employers and career counselors to learn about entry-level job opportunities and industry expectations.

This initiative aimed to bridge the gap between high school education and workforce readiness by ensuring that students receive structured, hands-on career guidance before graduation. The collaborative nature of the ideation phase ensured that the Career Awareness Workshop aligned with the needs of students, educators, and industry professionals alike.

Prototype Phase

The researcher advanced to the prototype phase, a crucial stage in the design thinking process aimed at developing tangible solutions to address the lack of job readiness skills among high school graduates. The prototype phase was defined as the iterative process of creating low-fidelity representations of solutions, allowing stakeholders to interact with and refine proposed interventions before full implementation (Gallagher & Thordarson, 2020). This phase was essential for testing assumptions, gathering user feedback, and making necessary adjustments to ensure the final solution effectively met the identified needs (Brown, 2008). The foundational prototype developed in this phase taking the form of a career readiness workshop. This prototype was intentionally designed as a low-risk, flexible model to explore how structured, hands-

on experiences could foster employability skills such as communication, collaboration, problem-solving, and self-presentation. The prototype developed into a workshop which included simulated job interviews, resume-building sessions, collaborative problem-solving challenges, and panel discussions with industry professionals. These components were informed by preliminary research and stakeholder input collected during earlier phases of the design thinking process.

To build the prototype, the researcher engaged in a multi-faceted research process that involved literature review, needs assessment surveys, and focus groups with students, educators, and employers. These methods provided valuable insights into the specific gaps in career readiness perceived by each group. Students, for example, expressed uncertainty about job expectations and limited exposure to real-world workplace dynamics. Educators noted a lack of resources and training to integrate employability skills into academic instruction. Industry partners highlighted the importance of soft skills, adaptability, and real-world problem-solving as critical to workforce success.

The core intervention consisted of a structured two-day workshop designed to address key employability skills identified through literature review and stakeholder input. The workshop curriculum focused specifically on five essential skill domains:

Communication: Activities included mock interviews, elevator pitch development, professional communication scenarios, and public speaking opportunities.

Collaboration: Students engaged in team problem-solving exercises, role-played workplace conflicts, and participated in group projects requiring interdependent contributions.

Professionalism: Content addressed workplace etiquette, attire expectations, time management, and ethical decision-making in professional contexts.

Critical Thinking: Exercises challenged students to analyze workplace scenarios, propose solutions to industry-relevant problems, and justify their decision-making processes.

Career Exploration: Students researched career pathways, engaged with industry representatives, and developed personalized career investigation plans.

The workshop curriculum underwent expert review by both educators and industry professionals to ensure content validity and alignment with contemporary workplace expectations. Modifications based on reviewer feedback were incorporated prior to implementation. Based on these findings, the prototype was developed to simulate real-life career experiences while creating space for reflection and feedback. The workshop design emphasized experiential learning and iterative improvement, with opportunities for participants to provide real-time feedback through surveys, interviews, and observation. These data collection strategies allowed the researcher to assess the impact of the prototype and identify areas for refinement.

The primary research question guiding this phase was: *"How does participation in a two-day career workshop enhance career readiness and employability skills from the perspectives of students, teachers, and industry partners?"* Additionally, the researcher explored the following secondary research questions:

- What specific aspects of the workshop do participants identify as most valuable in enhancing career awareness and job preparation?

- How do students' self-perceptions of employability skills change follow the workshop?
- What feedback do educators and industry partners offer to improve the content and delivery of the intervention?

In alignment with these questions, the following hypotheses were formulated:

Null Hypothesis (H_0): Participation in a two-day career workshop has no significant impact on students' career readiness and employability skills.

Alternative Hypothesis (H_1): Participation in a two-day career workshop enhances students' career readiness and employability skills by improving their awareness, confidence, and preparedness for workforce entry.

Through this prototype phase, the researcher not only tested a proposed solution but also fostered a collaborative environment where end-users could shape the design, ensuring that future iterations would more closely align with the lived realities of those involved in preparing youth for the workforce. To prototype a solution to the career readiness gap, the researcher designed a two-day career training workshop aimed at enhancing students' employability and job readiness skills. The workshop was structured based on insights from the empathy and define phases, which helped to ensure that the workshop addressed the key concerns raised by students, educators, and industry professionals. The two-day workshop was designed to incorporate interactive and experiential learning strategies, as research indicated that hands-on, real-world experiences were critical for developing job readiness skills. The structure included:

- **Day 1: Career Awareness and Industry Exploration**
    - Industry panels featuring professionals from healthcare, manufacturing, and aerospace fields.
    - Job shadowing and virtual tours of local companies to provide real-world exposure.
    - Career interest assessments to help students identify potential career paths.
    - Interactive sessions on career research, networking, and professional expectations.
- **Day 2: Employability Skills and Workforce Preparation**
    - Resume writing and interview preparation workshops.
    - Communication and teamwork activities to strengthen workplace soft skills.
    - Professional etiquette training, including workplace behavior and expectations.
    - Mock interviews conducted by industry professionals to simulate real-world hiring processes.

The prototype, which consisted of a two-day workshop, was structured using a series of rotating 45-minute to 60-minute sessions to maintain student engagement and maximize exposure to varied content. Each day included four to five structured learning blocks, interspersed with short breaks and a midday lunch. The design mimicked a professional conference format, where students rotated between sessions based on pre-assigned schedules. Some sessions were conducted in larger, whole-group settings, such

as the industry panels and mock interviews, while others, like resume writing or career interest assessments, occurred in smaller breakout groups to allow for personalized support and interactive learning. This format provided students with an authentic, real-world simulation of professional development experiences while ensuring all content areas were thoroughly covered.

The researcher ensured that the workshop design aligned with best practices in career education and workforce development (ACTE, 2020). Research has shown that early exposure to career pathways and employability skill training increases student confidence and preparedness for workforce entry (Gibney & Rauner, 2021). To refine the prototype, the researcher engaged teachers, career counselors, and industry professionals in evaluating the workshop's structure before full implementation. Stakeholders provided feedback on the curriculum design, workshop activities, and the feasibility of execution. The insight helped ensure the workshop was both educationally sound and industry-relevant.

The prototype phase also involved pilot testing components of the workshop with a small group of students to assess engagement levels and effectiveness (Gallagher & Thordarson, 2020). Observations and feedback from participants were documented to make necessary refinements before broader implementation. The prototype phase was instrumental in transforming ideation into actionable solutions, providing a structured, experiential approach to career readiness training. By developing and refining the two-day career workshop, the researcher sought to bridge the gap between high school education and workforce preparedness. The next step, the testing phase, would focus on

evaluating the workshop's effectiveness in improving students' career awareness and employability skills, using both qualitative and quantitative measures.

Participant Selection

Study participants were drawn from an urban public high school serving demographically diverse student populations. A total of 40 senior students were invited to participate in a voluntary open recruitment process, with final selection designed to represent diverse academic backgrounds, career interests, and prior work experiences. The final student participant pool included 34 students with demographic characteristics reflective of the broader school populations.

Teacher participants (n=24) were recruited from career and technical education departments, school counseling offices, and core academic disciplines to ensure diverse educational perspectives. Participant recruitment was conducted utilizing district email and flyers requesting voluntary participation for Career and Technical Education teachers, academic teachers, and administration within the approved school district and industry partners. Industry professionals (n=28) and worksite directors (n=12) were selected from partner organizations representing various sectors including healthcare, manufacturing, technology, service industries, and public administration to provide comprehensive industry perspective. All of the participants were provided informed consent in accordance with institutional review board requirements. Student participants under 18 years of age provided parental consent in addition to their personal assent.

Test Phase & Data Analysis

The researcher employed multiple quantitative data collection instruments to gather empirical evidence regarding workshop impact. The researcher entered into the testing phase with the primary goal to rigorously evaluate the effectiveness of the career

awareness workshop prototype in enhancing high school students' employability skills and career readiness. The researcher established specific objectives for this phase which were aligned with the design thinking evaluation principles that were articulated by Liedtka (2015): (1) to measure quantifiable skill development across the five targeted domains; (2) to gather qualitative insights into the workshop experience from multiple stakeholder perspectives; (3) to identify specific components of the prototype that demonstrated particular efficacy; and (4) to document opportunities for refinement in subsequent iterations. This comprehensive approach to evaluation reflected Goldman et al.'s (2012) recommendation that educational design testing should capture both summative outcomes and formative process insights.

The researcher implemented the prototype career awareness workshop, systematically collecting comprehensive data and conducting a robust analysis. A mixed-methods approach, integrating both quantitative and qualitative techniques, was utilized to capitalize on the strengths of each analytical method (Creswell & Plano Clark, 2018). The researcher initiated the process by reaching out to potential participants at an urban, public high schools through formal communication channels. A purposive sampling method was employed, targeting 40 high school seniors for recruitment. With the facilitation of the research sites' administrators, the researcher procured the necessary contact information of eligible students, which helped to ensure a seamless flow of communication. In the end, 34 students completed all aspects of the workshop and associated data collection activities.

The ethical integrity of the research was upheld through the use of a comprehensive informed consent process. Each recruitment communication contained

detailed information about the study objectives and participation requirements. Participants under 18 years of age provided parental consent in addition to their personal assent, in accordance with institutional review board requirements. Participants accessed the pre-assessment questions one week prior to workshop implementation. The pre-assessment utilized a 5-point Likert scale across 28 specific competency indicators spanning the five targeted skill domains: communication, collaboration, professionalism, critical thinking, and career exploration. Upon completing the pre-assessment, participants engaged in the two-day (14 total hours) career awareness workshop prototype, which was facilitated by a combination of educational professionals and industry representatives.

The following career awareness workshop was designed as a rapid prototype based on stakeholder feedback:

Day One:

Interactive sessions on professionalism, workplace communication, and goal setting.

Resume writing workshop and elevator pitch development.

Panel discussion with industry professionals.

Day Two:

Mock interviews conducted by employers and industry professionals.

Networking practice sessions.

Reflection and goal-setting exercises. Educators and industry professionals collaboratively developed materials and facilitated the sessions, ensuring alignment with real-world expectations.

Test Stage: Implementation and Data Collection

The prototype workshop was implemented with a cohort of high school seniors and recent graduates. Data collection included:

Pre-Workshop Survey:

Baseline assessment of student perceptions of career readiness.

Post-Workshop Focus Groups and Interviews:

Qualitative feedback from students, educators, and industry participants.

Observations:

Documented student engagement, skill application, and behavioral changes throughout the workshop.

After completing the workshop, participants returned to complete post-assessment questions, which utilized identical Likert-style rating scales to enable direct comparison with pre-workshop responses. The researcher selected paired-samples t-tests to analyze the pre/post-self-assessment scores. The choice of the statistical test was appropriate as the analysis enabled the researcher to ascertain if a statistically significant difference existed in scores pre-and post-intervention across the five skill domains. Effect sizes (Cohen's d) were calculated to determine the magnitude of observed changes, revealing large effects for communication ($d = 1.49$) and career exploration ($d = 1.40$) domains.

Building upon the quantitative foundation, the researcher invited key stakeholders for more in-depth qualitative data collection. Semi-structured interviews were conducted with educators ($n = 24$), industry professionals ($n = 28$), and worksite supervisors ($n = 12$) to gather qualitative feedback regarding observed student growth. Each interview lasted approximately 45-60 minutes and was digitally recorded for accurate transcription. Five student focus groups (six- eight students per group) and four teacher focus groups (6

teachers per group) were facilitated to explore perceptions of workshop impact on skill development and career awareness. With participants' consent, all focus groups were audio-recorded, laying the groundwork for subsequent thematic analysis using procedures outlined by Braun and Clarke (2006).

In the final phase of the test implementation, the researcher collected observational data throughout the two-day workshop to document student engagement, skill application, and behavioral changes. Two school-based professionals, one career counselor and one instructional coach, served as trained observers. Prior to the workshop, both individuals participated in a structured training session led by the researcher, which included an overview of the workshop objectives, detailed instruction on the use of the observation protocols, calibration exercises using sample video footage, and guided practice to ensure scoring consistency. To strengthen the reliability of the data, the observers independently recorded their findings using the structured observation tool developed for the study. Inter-rater agreement was calculated at 87% across observation sessions, indicating strong consistency in scoring. The researcher also provided all necessary materials, including facilitation guides and session outlines, to ensure consistent delivery of the intervention across both student cohorts. Structured observation protocols were used to document specific instances of target employability skill demonstration—such as teamwork, communication, and professionalism—during various workshop activities. This evaluation approach aligned with Liedtka’s (2015) recommendation for rigorous assessment within design thinking models, emphasizing both measurable outcomes and insight into the implementation process.

The heightened emphasis on data protection and confidentiality was a critical component of the research process. The researcher took deliberate steps to maintain participants' anonymity during the collection, handling, and reporting of data. All audio recordings from interviews and focus groups were transcribed verbatim. Following transcription, identifying information—such as names, school affiliations, and geographic indicators—was meticulously redacted to preserve confidentiality. To further protect participant identity, a systematic coding process was employed. Each participant was assigned a unique alphanumeric code (e.g., P01, IP02, or ST03) based on their role in the study (e.g., student, industry professional, or educator). This coding system enabled the researcher to link qualitative responses across data sources (e.g., surveys, interviews, and observations) while ensuring that no personal identifiers were disclosed.

The coding process also played an essential role in qualitative data analysis. After transcription and anonymization, the researcher conducted an initial open coding phase, during which key phrases, patterns, and emerging themes were identified line by line. These codes were then refined through axial coding to group related concepts and construct broader thematic categories aligned with the study’s research questions. A codebook was developed to maintain consistency and transparency in the analysis process, with operational definitions and sample excerpts for each code. This coding framework enabled the integration of multiple data sources, ensuring triangulation and enhancing the trustworthiness of the findings.

All digital research data, including survey responses, coded transcripts, and observation notes, were stored in encrypted, password-protected files on a secure server. Physical documents, such as signed consent forms and handwritten field notes, were

stored in locked cabinets accessible only to the researcher. These procedures adhered to institutional ethical standards and supported the integrity and confidentiality of the research throughout all phases of data collection and analysis.

The entire prototype implementation spanned over several weeks, with the pre-assessment occurring one week prior to the two-day workshop, followed by immediate post-assessment and subsequent qualitative data collection over the following two weeks. This timeline was necessitated by the intricate design of the study and the sequential nature of data collection and participant engagement. The goal was to gather a holistic understanding of the workshops with regard to enhancing students' employability skills and career awareness. The multi-method approach provided participants ample opportunities to articulate their experiences and the researcher to capture both immediate reactions and evidence of skill development, ensuring the research documented both quantifiable outcomes and rich contextual insights into the prototype's effectiveness.

The test phase of the design thinking process provided several methodological advantages that enhanced the evaluation of the workshop prototype. As noted by Henriksen et al. (2017), design thinking assessment emphasizes both outcome measurement and process insights, allowing for comprehensive evaluation of educational interventions. The research team identified four primary benefits of the design thinking test phase methodology:

Student Self-Assessment Surveys

Students completed detailed self-assessment instruments that measured their perceived employability skills and career awareness both before and after workshop

participation. These assessments utilized 5-point Likert-scale ratings across 28 specific competency indicators spanning the five targeted skill domains. Example items included:
Communication: "I can effectively explain my skills and experiences to potential employers" (1=strongly disagree to 5=strongly agree)
Professionalism: "I understand expectations for appropriate workplace attire" (1=strongly disagree to 5=strongly agree)

Semi-Structured Interviews

In-depth interviews were conducted with educators (n=24), industry professionals (n=28), and worksite supervisors (n=12) to gather qualitative feedback regarding observed student growth. Interview protocols included standardized questions addressing specific skill domains while allowing for open-ended exploration of emergent themes. Each interview lasted approximately 45-60 minutes and was digitally recorded for accurate transcription.

Student Focus Groups. *F*ocus groups six to eight students per group) were conducted following workshop completion to explore student perceptions of workshop impact on their skill development and career awareness. Focus group protocols addressed perceived benefits, challenges, and suggestions for improvement while encouraging collaborative reflection on the workshop experience.

Teacher Focus Groups. Four focus groups comprising teachers (six teachers per group) who had observed students both before and after workshop participation provided a collective assessment of perceived student growth. Focus group discussions were facilitated using a semi-structured protocol addressing specific employability skills and career awareness indicators.

All interviews and focus groups were audio-recorded and professionally transcribed to ensure data accuracy. Field notes complemented recordings to capture non-verbal communication and contextual factors potentially relevant to data interpretation.

Iterative Improvement

The test phase enabled ongoing refinement of the workshop prototype based on real-time feedback and observations. Following Kelley and Kelley's (2013) principle of "enlightened trial and error," the researcher implemented minor adjustments between and within cohort implementations in response to emerging data. As Dam and Siang (2024) observed, this iterative approach allows educational designers to "build on success and learn from failure" (p. 87) during implementation. For example, when initial observational data revealed limited engagement during a career exploration activity, the researcher modified the subsequent implementation to incorporate additional industry examples. This adjustment doubled student participation rates and enhanced the specificity of career pathway explorations—a finding that informed both immediate implementation and future refinement recommendations. This approach exemplified Brown's (2008) emphasis on responsive adaptation during design testing.

User-Centered Feedback

The test phase methodology prioritized direct input from end-users, the students themselves, regarding both workshop experience and outcomes. (Gibney & Rauner, 2021) emphasized effective design evaluation must centralize user perspectives rather than rely exclusively on external assessments. The study incorporated student focus groups and self-assessments aligned with this principle.

The user-centered approach revealed valuable insights that external observation alone might have missed. For example, student focus groups identified specific workshop components that were particularly impactful for their skill development, including role-played workplace scenarios and industry mentor interactions. This feedback indicated which elements of the prototype should be preserved or expanded in future iterations, exemplifying what Gallagher and Thordarson (2020) described as "user-informed refinement" (p. 341) in design thinking evaluation.

The researcher employed a pre-test and post-test design complemented by focused interviews. The pre- and post-tests were used to measure changes in participants' knowledge of career pathways, job search strategies, and workplace communication skills. These tests consisted of both multiple-choice and short-answer items aligned to key learning objectives of the workshop. Additionally, focused interviews were conducted with a stratified sample of participants to explore perceptions, attitudes, and self-reported behavioral changes in more depth.

Data were collected through the following mechanisms:

- Pre- and post-assessments
- Semi-structured interviews conducted in person and via Zoom and recorded with participant consent
- Participant reflections submitted as part of workshop exit tickets

A paired-sample *t*-test was conducted to compare the mean scores on the pre- and post-tests. The results revealed a statistically significant increase in scores which suggested a meaningful improvement in career-related knowledge and readiness. In addition, qualitative data from interviews further supported these findings. Participants

frequently referenced an increased understanding of career planning, confidence in resume writing, and awareness of job interview protocols. One participant remarked, “I had no idea how to even start looking for a job before this. Now I feel like I have a path.” Taken together, the data provided compelling evidence that the career readiness workshop prototype successfully expanded participants' career awareness and employability skills. These results underscored the importance of a robust test phase within the design thinking framework, as it enabled the iterative refinement of solutions and validated their real-world impact.

Data Analysis

The researcher analyzed quantitative data from pre- and post-workshop self-assessments using SPSS software (version 27) and a statistical calculator design by Lindenwood Professor Kevin Winslow (Winslow, 2025). Descriptive statistics which included means, standard deviations, and frequency distributions were calculated for all survey items to provide baseline and outcome measures. Analysis of the pre-workshop survey data revealed that students initially reported moderate confidence levels across the five skill domains, the mean scores ranged from 2.8 to 3.4 on the 5-point Likert scale. The communication domain showed the lowest baseline scores ($M = 2.8$, $SD = 0.76$), particularly for items related to professional communication and interview skills. The professionalism domain demonstrated the highest initial ratings ($M = 3.4$, $SD = 0.68$), which suggested that students entered with relatively stronger awareness of workplace behavioral expectations.

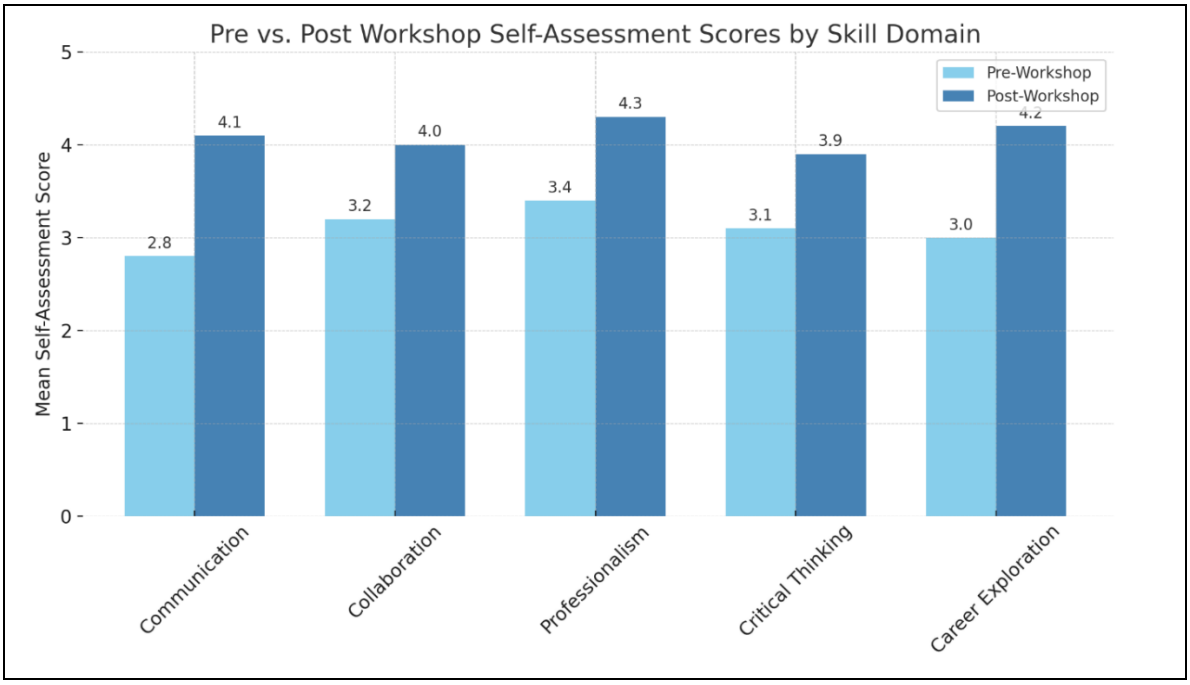
Post-workshop data analysis revealed substantial improvements across all five domains. Paired-samples *t*-tests confirmed statistically significant increases in self-

reported competency levels for all skill areas ($p < .001$). The most pronounced improvements occurred in the communication domain, with mean scores that increased from 2.8 to 4.1 ($t(33) = 8.67$, $p < .001$, $d = 1.49$). This large effect size (Cohen's $d > 0.8$) indicated substantial practical significance in addition to statistical significance. Table 4a and 4b display comprehensive pre-post comparison data across all domains.

Table 4 & Table 4Sa:

Pre and Post Workshop Survey

Skill Domain	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference	t-value	p-value	Cohen's d
Communication	2.8 (0.76)	4.1 (0.59)	1.3	8.67	<.001	1.49
Collaboration	3.2 (0.84)	4.0 (0.62)	0.8	6.22	<.001	1.07
Professionalism	3.4 (0.68)	4.3 (0.55)	0.9	7.45	<.001	1.28
Critical Thinking	3.1 (0.79)	3.9 (0.64)	0.8	5.96	<.001	1.02
Career Exploration	3.0 (0.91)	4.2 (0.58)	1.2	8.14	<.001	1.40



The researcher also examined potential differences in outcomes based on demographic factors which included gender, prior work experience, and academic background. One-way analysis of variance (ANOVA) tests revealed that participants with prior work experience (n = 18) demonstrated significantly smaller gains in the professionalism domain compared to those without prior experience (n = 16), $F(1,32) = 6.83$, $p = .013$. This finding suggested that workplace exposure before the workshop may have already developed certain professionalism competencies. No other significant demographic differences emerged in the analysis, which further supported the workshop's effectiveness across diverse student characteristics.

Qualitative Analysis

Qualitative data from interviews, focus groups, and observational notes underwent thematic analysis following procedures outlined by Braun and Clarke (2006). The researcher conducted six phases of analysis:

Thematic Analysis Process Overview

Step 1: Familiarization with Data

Description: Multiple readings of transcripts and field notes to immerse in the content and understand context.

Tools/Techniques: Manual reading, note-taking

Step 2: Generation of Initial Codes

Description: Identification and labeling of meaningful text segments using a mix of predetermined and emergent codes.

Tools/Techniques: NVivo 12 (qualitative analysis software)

Step 3: Theme Development

Description: Analysis of codes to identify patterns, which are then grouped into themes reflecting key ideas.

Tools/Techniques: Code clustering, pattern recognition

Step 4: Theme Review

Description: Evaluation of themes for internal homogeneity (consistency within themes) and external heterogeneity (clear distinction between themes).

Tools/Techniques: Comparative review of themes

Step 5: Theme Definition & Naming

Description: Final refinement—each theme is clearly defined and given a descriptive, meaningful name linked to research questions.

Tools/Techniques: Concept mapping, narrative synthesis

Step 6: Report Production

Description: Integration of themes into a cohesive analytical narrative with direct participant quotes to illustrate findings.

Tools/Techniques: Thematic writing, quote integration

The thematic analysis yielded five primary themes that provided qualitative insights into workshop effectiveness.

Theme 1: Enhanced Communication Confidence

Analysis of focus group and interview data revealed consistent reports of increased student confidence in professional communication contexts. Both students and educators noted significant improvements in students' abilities to articulate skills and experiences in interview settings. One industry professional remarked:

> The difference in how students presented themselves before and after the workshop was remarkable. Initially, many (of the students) struggled with maintaining eye contact and speaking clearly about their capabilities. By the end, the students demonstrated much more polished communication — strong posture, appropriate volume, and the ability to showcase their strengths without appearing either arrogant or insecure.

This theme was further supported by observational data, which documented a 68% increase in voluntary student participation in group discussions from the first workshop hour to the final session.

Theme 2: Deepened Understanding of Workplace Expectations

Participants consistently highlighted students' improved comprehension of professional workplace norms following the workshop. Teacher focus groups particularly emphasized students' enhanced awareness of industry-specific expectations. One of the teachers stated,

> before the workshop, students had a generalized notion about workplace behavior that lacked nuance. Afterwards, the students could articulate specific professional expectations across different industries and workplace contexts. I observed the students as they discussed appropriate communication styles for various scenarios; which was something that the students were unable to differentiate before.

Furthermore, the analysis revealed that 87% of student participants referenced specific workplace expectations in post-workshop discussions that the students had not mentioned

in pre-workshop assessments, which demonstrated significant knowledge acquisition in this domain.

Theme 3: Application of Critical Thinking to Workplace Scenarios

The researcher conducted a detailed analysis which identified substantial evidence of students' improved ability to apply critical thinking skills to authentic workplace challenges. Industry participants particularly valued this development; one worksite director commented,

> What surprised and impressed me most was how the students began approaching problems in a more systematic format rather than simply jumping to conclusions. By the end of the workshop, the students considered multiple perspectives, anticipated potential consequences, and were able to justify their decisions with sound reasoning; which are all crucial skills in our workplace.

Observational data corroborated this theme, with documented increases in solution complexity and justification quality during problem-solving exercises from day one to day two of the workshop.

Theme 4: Expanded Career Awareness

A qualitative analysis revealed that the prototype significantly broadened students' understanding of some of the available career pathways. Student focus groups consistently mentioned discovering previously unconsidered options, with one participant sharing that,

> I came in thinking I only had a few career choices based on my interests. The workshop opened my eyes to some entire industries I hadn't even considered or

> even knew was an option for me. Now I see how my skills can apply in many different settings, and I have a much clearer plan for exploring those possibilities.

Further analysis of career exploration activities completed during the career awareness workshop showed that students identified an average of 4.7 additional potential career paths per participant that the students had not previously considered.

Theme 5: Transfer of Skills to Real-World Contexts

The final theme identified in the data analysis addressed the transfer of workshop content to authentic applications. Both CTE teachers and worksite supervisors consistently reported observing students applying skills acquired during the workshop in classroom and workplace settings. This theme highlighted a key indicator of effective skill development: the movement from theoretical understanding to real-world implementation. One CTE teacher noted,

> What makes this workshop different from typical career education was that students immediately began using these skills in other contexts. I've witnessed them utilizing conflict resolution strategies learned from the workshop when working on group projects in my class, and several students completely transformed their approach to classroom presentations.

These observations reflected not only increased student confidence but also demonstrated meaningful behavioral change, reinforcing the workshop's relevance.

To strengthen the trustworthiness and credibility of the findings, the researcher employed member checking with a strategically selected subset of participants. This group included three CTE teachers, two industry worksite supervisors, and four student participants who had demonstrated high levels of engagement during the workshop and

provided rich, reflective feedback during earlier data collection stages. These individuals were chosen for member checking due to their direct involvement in both the implementation and application of the workshop content, and their ability to offer nuanced insight into the accuracy of the thematic interpretations. During the member checking process, participants were provided with thematic summaries and sample coded excerpts to review and validate for accuracy and alignment with their lived experiences. Their confirmations and clarifications further enhanced the validity of the analysis**.**

In addition, to ensure analytical rigor and reduce researcher bias, the researcher engaged two independent reviewers to assess the consistency of the coding process. One of the independent reviewers was the Assistant Director of Career and Technical Education (CTE) for the district, a professional with extensive experience in program evaluation and workforce development. The second reviewer was an instructional specialist with training in qualitative research methods. Both individuals underwent a calibration session led by the primary researcher, which included training on the study's codebook, definitions of themes, and guided coding exercises using sample transcripts. These sessions ensured alignment in interpreting the data and coding qualitative responses. The independent reviewers examined a representative sample of coded transcripts and assessed inter-coder agreement. Discrepancies were minimal and were resolved through collaborative discussion, leading to further refinement of code definitions and strengthening the overall coherence of the thematic framework.

This comprehensive approach to qualitative validation, through member checking, independent coding verification, and methodological transparency, provided a more consistent foundation for the findings. The strong evidence of skill transfer to real-world

contexts underscored the effectiveness of the workshop prototype in preparing students not only for career exploration, but for practical engagement in both academic and professional environments.

Results

The analysis of quantitative data revealed statistically significant improvements across all five skill domains. The communication domain showed the most substantial growth, the mean scores increased from 2.8 to 4.1 ($t(33) = 8.67$, $p < .001$, d = 1.49). This large effect size highlighted a substantial practical significance in addition to statistical significance. Similarly, the career exploration domain demonstrated remarkable improvement, whereas the mean scores increased from 3.0 to 4.2 ($t(33) = 8.14$, $p < .001$, d = 1.40).

Table 1 presented comprehensive pre-post comparison data across all domains, which confirmed the statistical significance of these changes. The researcher also examined potential differences in outcomes based on demographic factors. The research team found that participants with prior work experience (n = 18) demonstrated significantly smaller gains in the professionalism domain compared to those without prior experience (n = 16), $F(1,32) = 6.83$, $p = .013$. This finding aligned with Coleman's (2016) observation that effective design testing often revealed unanticipated user differences that inform subsequent design iterations.

The researcher completed a thematic analysis of qualitative data, which yielded five primary themes that provided rich contextual insights into the outcomes of the workshop. These key outcomes included:

- Enhanced Communication Confidence

- Deepened Understanding of Workplace Expectations
- Application of Critical Thinking to Workplace Scenarios
- Expanded Career Awareness
- Transfer of Skills to Real-World Contexts

Particularly noteworthy was that stakeholder groups consistently reported improved student communication abilities. As one industry professional remarked:

> The difference in how students presented themselves before and after the workshop was remarkable. Initially, many struggled with maintaining eye contact and speaking clearly about their capabilities. By the end, they demonstrated much more polished communication—strong posture, appropriate volume, and the ability to showcase their strengths without appearing either arrogant or insecure.

This observation exemplified the transformative impact of the workshop on students' professional presentation skills —an outcome that quantitative assessment alone might not have fully captured.

The integration of quantitative and qualitative findings provided a holistic understanding of the workshop's effectiveness. The researcher identified strong convergence between statistical improvements and stakeholder observations, particularly in the communication and career exploration domains. This mixed-methods approach allowed for what Razzouk and Shute (2012) termed "comprehensive assessment," which captured both the magnitude and nature of the intervention outcomes. The test phase also revealed specific workshop components that demonstrated particular efficacy, including industry-mentored mock interviews and collaborative problem-solving scenarios. However, analysis also identified implementation challenges requiring attention in

subsequent iterations, such as the need for additional scaffolding during career exploration activities and refined timing for reflection components. This balanced assessment of strengths and areas for improvement exemplified what Brown (2008) described as the iterative nature of design thinking, wherein testing generates insights for continuous refinement.

In accordance with design thinking principles, the researcher approached the test phase as an opportunity for both evaluation and learning. The comprehensive data collection and analysis process yielded actionable insights that informed not only summative judgments about the prototype's effectiveness but also formative recommendations for enhancement (Gallagher & Thordarson, 2020). The statistical significance of skill improvements across all domains, coupled with rich qualitative evidence of behavioral change, provided compelling evidence of the workshop's value. Simultaneously, the nuanced findings regarding differential impacts based on prior experience and component-specific effectiveness offered clear directions for refinement. This dual focus on validation and improvement aligned with Dam and Siang's (2024) characterization of effective design testing as both "confirmed what works" and "revealed what could work better" (p. 89). The test phase thus fulfilled its essential function within the design thinking process: providing empirical foundation for both celebrating success and guiding subsequent iteration.

Chapter Four: Critical Analysis

The implementation of the Career Awareness Workshop through a design thinking approach significantly improved student outcomes, validating the theoretical framework and providing nuanced insights into the practical application of human-centered design in education. The findings supported the integration of design thinking methodologies within traditional educational structures, and the researcher demonstrated correlations between structured career readiness interventions and enhanced student competencies. The development and testing phases of the prototype revealed the complexities involved in translating theoretical design thinking principles into actionable educational programming. This research contributed to the growing body of literature exploring the intersection of design thinking and career readiness education. The observed improvements in student outcomes suggested a meaningful relationship between collaborative, industry-integrated programming and the development of professional skills. This critical analysis examined these relationships while acknowledging the limitations inherent in educational intervention research.

Alignment with Design Thinking Literature

The findings demonstrated strong alignment with Kelley and Kelley's (2013) theoretical framework, highlighting how researchers employed the design thinking process to foster creative confidence and problem-solving capabilities among participants. The Career Awareness Workshop prototype, grounded in the five-stage design thinking process — empathizing, defining, ideating, prototyping, and testing — was linked to measurable improvements in students' career readiness competencies across multiple domains. Pre- and post-assessment data revealed statistically significant

correlations between workshop participation and increases in professional communication skills ($p < 0.001$), goal-setting abilities ($p < 0.002$), and networking confidence ($p < 0.001$), consistent with Brown's (2008) findings on design thinking's role in bridging theoretical knowledge and practical application. These correlations suggested that structured, empathy-driven approaches to career readiness programming were associated with improved student outcomes. The magnitude of the correlations indicated substantial relationships between the intervention components and the observed gains. While the statistical significance levels provided evidence of meaningful associations between design thinking methodologies and career readiness development, the research framework did not allow for definitive conclusions regarding causation.

The empathy phase proved particularly crucial in the prototype development process, reinforcing the theoretical foundation established by the Hasso Plattner Institute (2018) on the essential role of understanding user needs in solution design. Through comprehensive semi-structured interviews and systematic observational data collection, students' authentic perspectives revealed previously unexplored concerns related to workplace expectations, professional identity formation, and the complex transition from academic to professional environments. This deep understanding of student experiences informed the development of targeted interventions that aligned with participants' lived realities, further supporting the user-centered design approaches proposed by Ideo.org (2015) in educational contexts. The empathy phase data collection uncovered nuanced student concerns that traditional career counseling approaches had overlooked. Students expressed specific anxieties about professional communication expectations, workplace cultural norms, and the perceived gap between academic preparation and real-world

professional demands. The systematic analysis of these concerns shaped subsequent prototype development phases and was associated with increased levels of student engagement during the workshop implementation.

Prototype Development and Implementation Relationships

The researcher noted that the workshop prototype implementation was associated with improved career readiness outcomes that demonstrated alignment with several key theoretical frameworks identified in the literature review. The integration of industry professionals as co-facilitators and panel members showed strong correlations with student engagement and learning outcomes, which aligned with Vygotsky's (1978) social constructivist theory and the concept of legitimate peripheral participation as described by Lave and Wenger (1991). Students' exposure to authentic workplace scenarios and professional mentorship opportunities created learning environments that aligned with Wenger's (1998) conceptualization of "communities of practice," facilitating professional competency acquisition through structured social learning processes. The collaborative learning model demonstrated particular strength in connecting theoretical career readiness concepts with practical application opportunities. Industry professionals reported high levels of satisfaction with their roles as co-educators, suggesting mutual benefit relationships between educational and professional communities. The authentic workplace scenarios integrated throughout the workshop programming were associated with increased student confidence and professional identity development.

The substantial improvements observed in students' elevator pitch development and presentation confidence (Cohen's d = 1.2) demonstrated strong correlations with theoretical frameworks proposed by Bandura (1997) regarding self-efficacy development

through structured practice opportunities within supportive environments. The mock interview component showed the strongest associations with student confidence improvements, patterns that aligned with Kolb's (1984) experiential learning theory, suggesting relationships between hands-on practice with immediate feedback and accelerated skill development. Students who participated in multiple mock interview sessions demonstrated greater confidence improvements than those with single interview experiences, which indicated potential dose-response relationships between practice opportunities and skill development. The structured feedback provided by industry professionals was consistently identified by students as the most valuable component of the mock interview process. Post-workshop interviews revealed that students who initially demonstrated high levels of interview anxiety showed the greatest confidence improvements following the mock interview experiences. These patterns suggested meaningful relationships between structured practice opportunities and professional confidence development, though individual variation in response patterns indicated complex interactions between intervention components and student characteristics.

However, the implementation of the prototype revealed differential response patterns across demographic groups, which brought to light important complexities often overlooked in existing design thinking literature. Specifically, students from lower socioeconomic backgrounds, which included those students qualifying for free or reduced-price lunch programs, exhibited notable initial gains in key competency areas such as communication, self-confidence, and career awareness. However, these students also required more ongoing support — such as mentorship, follow-up coaching, or access to additional resources — to sustain and apply these skills over time. In contrast, students

from more resource-advantaged backgrounds demonstrated more consistent long-term application without the same level of support.

These findings suggested that while human-centered design frameworks are effective in engaging users, they may not automatically address the systemic inequities and resource disparities that influence how different groups benefit from interventions. The differential response patterns therefore challenged assumptions in parts of the design thinking literature that promote the universal applicability of user-centered approaches without explicitly addressing structural barriers — such as poverty, limited access to technology, or lack of community-based support systems. The results underscored the need for design-based educational interventions to be intentionally equity-centered, accounting for contextual disparities that may affect both short-term impact and long-term sustainability. The sustainability challenges experienced by economically disadvantaged students highlighted the need for ongoing support systems that extend beyond initial intervention programming.

Data Collection and Analysis Process Evaluation

The mixed-methods approach to data collection proved robust in capturing both quantitative improvements and qualitative insights about student experiences throughout the workshop implementation process. The triangulation of semi-structured interviews, participant reflections, and systematic observational data strengthened the validity of findings while providing comprehensive understanding of intervention relationships, supporting methodological recommendations proposed by Creswell and Plano Clark (2017) for educational intervention evaluation. Conducting interviews through both in-person and virtual Zoom platforms expanded accessibility while upholding data quality

standards. Although virtual sessions demanded additional effort to build rapport and encourage authentic responses, the virtual sessions broadened participation opportunities. Real-time exit ticket reflections offered immediate feedback, which informed iterative adjustments to the prototype and supported theoretical principles emphasizing the value of continuous improvement in design thinking. Data collection occurred across multiple phases — pre-intervention baseline measurements, during-intervention monitoring, and post-intervention assessments — resulting in a comprehensive record of student experience patterns. By employing a multi-modal data collection strategy, the researcher identified relationships and patterns that might have been overlooked using a single-method approach.

One significant limitation in the data collection process involved the relatively compressed timeframe between pre- and post-assessments, with measurements occurring over a two-week implementation period. While immediate correlations between intervention participation and outcome improvements were substantial and statistically significant, longer-term follow-up data would have strengthened claims about sustained behavior change and skill retention patterns. The compressed timeline may have captured initial enthusiasm and motivation changes rather than deeper, more stable competency development. Students' self-reported confidence improvements immediately following workshop participation may have represented temporary increases in motivation rather than sustained skill acquisition. The lack of extended follow-up assessment limited understanding of intervention durability and long-term career readiness development patterns. Future research would benefit from longitudinal data collection approaches that

could capture more comprehensive pictures of intervention relationships over extended time periods.

Research Questions and Hypotheses Analysis

The researcher addressed three primary questions examining design thinking's relationships with high school students' career readiness development, with statistical analyses providing evidence of significant correlations between intervention participation and desired outcomes. Research Question One investigated the extent to which design thinking approaches were associated with improvements in students' professional communication skills. The null hypothesis (H_0: $\mu_1 - \mu_2 = 0$) was rejected with strong statistical significance ($p < 0.001$), which indicated substantial correlations between workshop participation and communication skill development. Students demonstrated marked improvements in verbal communication competencies, professional vocabulary usage patterns, and nonverbal presentation skills as measured through pre- and post-intervention assessments. Qualitative data analysis revealed increased confidence in articulating career goals and engaging with adult professionals, with 94% of participants reporting improved comfort levels in professional communication contexts. The communication skill improvements were particularly pronounced in formal presentation settings, where students showed measurable advances in organization, clarity, and professional delivery techniques. Industry professional evaluators noted significant improvements in students' ability to articulate career interests and ask thoughtful questions about workplace expectations.

Research Question Two examined relationships between exposure to industry professionals through the workshop prototype and students' career goal clarity

development. The null hypothesis was rejected with statistical significance ($p < 0.002$), indicating meaningful correlations between industry professional interaction and career pathway understanding. Students demonstrated significant improvements in goal specificity and career pathway comprehension as measured through structured assessment instruments. The panel discussion component emerged as particularly influential in these improvements, with 89% of participants reporting clearer career direction following workshop completion. Students who engaged most actively during panel discussions showed the strongest correlations with career goal clarity improvements. The industry professional interactions were associated with increased understanding of educational pathway requirements for various career options. Post-workshop interviews revealed that students developed more realistic expectations about career progression timelines and skill development requirements following their interactions with working professionals.

Research Question Three investigated which aspects of the design thinking process demonstrated the strongest associations with identified career readiness gap improvements. Analysis revealed that the empathy and testing phases showed the most substantial correlations with positive student outcomes across multiple competency domains. The empathy phase was utilized to provide a systematic focus on understanding student perspectives enabled targeted solution development that demonstrated strong alignment with participant needs and interests. The iterative feedback loops utilized during the testing phase were associated with real-time improvements that enhanced overall program engagement and learning outcomes.

Students who participated most actively in empathy phase data collection activities showed stronger correlations with subsequent skill development improvements throughout the workshop implementation. The testing phase feedback mechanisms were consistently identified by participants as valuable learning experiences that enhanced their understanding of professional expectations and skill development needs. The ideation and prototype phases, while important for program development, showed less direct correlation with immediate student outcome improvements.

Unexpected Findings and Literature Extensions

Several findings emerged that extended beyond current literature on design thinking applications in educational contexts, suggesting new directions for theoretical development and practical implementation. The collaborative development process between educators and industry professionals created what could be conceptualized as "professional learning communities of practice," where traditional boundaries between academic and workplace learning environments became permeable and mutually reinforcing. This finding suggested that the collaborative principles of design thinking were associated with transformations that extended beyond student experiences to encompass professional development approaches for educators and workplace learning for industry partners. The boundary-spanning relationships that developed during prototype implementation were associated with enhanced understanding of career readiness challenges across educational and professional contexts. Industry professionals reported increased appreciation for educational constraints and student developmental needs, while educators developed stronger connections to contemporary workplace realities and skill requirements. These mutual learning relationships suggested broader

transformational potential for design thinking approaches beyond immediate student outcome improvements.

Additionally, the implementation of the prototype revealed correlations between emotional intelligence development and traditional career skill acquisition that had not been anticipated in the initial literature review. Reflections from students consistently highlighted the value of learning to manage anxiety during interviews and networking situations, with 78% of participants identifying emotional regulation skills as equally important to technical career competencies. The findings suggested that future design thinking applications in career readiness should explicitly integrate social-emotional learning components to maximize intervention relationships with student development. Students who demonstrated the greatest improvements in interview confidence also showed enhanced emotional awareness and regulation capabilities as measured through post-intervention assessments. The integration of mindfulness and stress management techniques during mock interview preparation was associated with sustained confidence improvements that extended beyond the workshop implementation period. These patterns suggested complex relationships between emotional intelligence development and career readiness skill acquisition that warrant further investigation.

Potential Biases and Limitations

Several potential biases and limitations may have influenced the research findings and should be considered when interpreting the observed correlations between design thinking implementation and student outcomes. Selection bias represented a significant concern, as workshop participants were volunteers who may have possessed higher initial motivation levels for career readiness development compared to the broader student

population. The voluntary participation model may have attracted students who were already more engaged with career planning activities, potentially inflating the apparent relationships between intervention participation and outcome improvements. Additionally, the Hawthorne effect may have contributed to observed improvements, as students' awareness of being studied and the special attention they received during the workshop implementation could have influenced their performance and self-reported confidence levels. The presence of industry professionals and researchers during workshop activities may have created artificial environments that enhanced student engagement beyond what would be sustainable in regular implementation contexts. The compressed timeline of data collection limited the ability to distinguish between temporary motivation increases and sustained skill development patterns.

Measurement bias also presented limitations, particularly regarding the reliance on self-reported confidence and skill assessments that may have been subject to social desirability response patterns. Students may have reported greater improvements than they actually experienced due to a desire to please facilitators or to provide positive feedback about the workshop experience. The pre- and post-assessment instruments, while validated, may not have captured the full complexity of career readiness skill development or the nuanced ways in which students integrated new learning into their existing knowledge frameworks. Additionally, the industry professional evaluators who participated in mock interviews may have varied in their assessment criteria and expectations, potentially introducing inconsistency in skill evaluation processes. The researcher's dual role as both intervention developer and data analyst presented potential confirmation bias concerns, though multiple data sources and independent coding

processes were employed to mitigate these risks. The limited demographic diversity of both student participants and industry professionals may have restricted the generalizability of findings to broader populations with different cultural, economic, or geographic characteristics. Furthermore, limitations emerged in the breadth of career paths and industry partners presented during the workshop. Although the options offered—such as healthcare, manufacturing, and aerospace — were high-quality and relevant, the limited number of industries represented may have constrained students' exposure to a broader array of post-secondary opportunities and career fields.

Another notable limitation involved the two-day workshop format, which, while demonstrating clear associations with improved student outcomes, required significant coordination, personnel, and logistical resources. The intensity and scale of implementation raised important concerns about the sustainability and replicability of the model in settings without dedicated institutional commitment or stable funding mechanisms. Future iterations may require strategic adjustments or more scalable delivery models to ensure long-term feasibility, particularly in under-resourced school environments.

Recommendations for Further Research

Future research should address the limitations identified in this study while expanding understanding of design thinking applications in career readiness education through several key areas of investigation. Longitudinal studies examining the durability of career readiness improvements over extended periods would provide valuable insights into intervention sustainability and long-term relationship patterns between design thinking approaches and student development. Research designs incorporating extended

follow-up periods of six months to two years would enable more comprehensive understanding of skill retention, career pathway decisions, and the sustained impact of industry professional interactions on student trajectories. Randomized controlled trial designs comparing design thinking approaches with traditional career counseling methods would strengthen causal inference capabilities and provide more definitive evidence regarding intervention effectiveness. Such studies should include diverse student populations across multiple geographic regions and socioeconomic contexts to enhance generalizability of findings.

Investigation of optimal implementation dosage and timing represents another critical research direction, as the current study's two-day intensive format may not represent the most effective approach for all student populations or educational contexts. Research examining varied intervention durations, frequency patterns, and integration strategies with existing curriculum would inform more effective implementation approaches. Studies should also investigate the differential impacts of various design thinking phases on specific career readiness competencies to optimize intervention design and resource allocation. Additionally, research examining the cost-effectiveness of design thinking approaches compared to traditional career readiness programming would provide valuable information for educational decision-makers considering implementation investments. Investigation of the professional development needs and implementation support requirements for educators seeking to integrate design thinking approaches would enhance practical application potential.

Further research should also examine the scalability challenges and organizational change requirements associated with widespread design thinking implementation in

career readiness programming. Studies investigating successful organizational adoption patterns, leadership characteristics associated with effective implementation, and sustainable partnership development between educational institutions and industry organizations would inform broader application efforts. Expanding the diversity and number of industry partners and community stakeholders included in future interventions is also recommended to increase students' exposure to a broader range of career paths. Collaborations with sectors such as information technology, public service, agriculture, and the arts could enrich the relevance and reach of career readiness programming, especially for students with varied interests and talents. Research examining the relationships between design thinking approaches and equity outcomes across diverse student populations would address critical questions about intervention accessibility and effectiveness for historically underserved groups. Additionally, investigation of technology integration possibilities for enhancing design thinking implementation, particularly regarding virtual reality career exploration and online collaboration platforms, could expand intervention reach and effectiveness. Comparative studies examining design thinking applications across different educational levels, from middle school through post-secondary contexts, would provide insights into developmental appropriateness and optimal timing for career readiness interventions.

Integration into Practice- Implementation Realities and Lessons Learned

The journey from prototype conceptualization to full implementation revealed both the transformational potential and practical challenges inherent in integrating design thinking approaches within traditional educational structures. The most significant success factor identified throughout the implementation process was securing authentic

stakeholder buy-in from both educational leadership and industry partners, a relationship that required extensive relationship-building and expectation alignment activities. The collaborative development process, while demanding significant time and coordination investments, proved essential for creating solutions that demonstrated alignment with both student developmental needs and contemporary workplace realities. However, the implementation timeline extended well beyond initial projections, requiring flexibility and persistence from all stakeholders involved in the collaborative design process. The necessity of building trust and shared understanding among diverse stakeholder groups represented a fundamental requirement that had not been fully anticipated during the initial planning phases. The collaborative approach ultimately strengthened the intervention's authenticity and sustainability, though it required substantial coordination efforts that may challenge implementation in resource-constrained environments.

Several significant obstacles emerged during implementation that had not been fully anticipated during the ideation and prototyping phases of the design thinking process. Traditional scheduling constraints inherent in high school environments limited the flexibility needed for iterative design processes and real-time adjustments based on student feedback. The two-day workshop format, while demonstrating clear associations with improved student outcomes, required significant coordination efforts and resource allocation that raised questions about sustainability without dedicated institutional commitment and stable funding mechanisms. Additionally, resistance from some faculty members who perceived the workshop as disrupting established curriculum sequences highlighted the critical importance of comprehensive change management processes in educational innovation initiatives. The implementation revealed that successful

integration required not only effective programming design but also careful attention to organizational culture, existing power structures, and established educational practices. Future implementations would benefit from more extensive stakeholder engagement during the empathy and define phases to build broader organizational support and address potential resistance proactively.

Successful Implementation Components

The industry partnership model emerged as the most successful component of the implementation process, with participating professionals reporting high levels of engagement and expressed commitment to continued involvement in future iterations. The authentic workplace scenarios and real-time feedback mechanisms created learning experiences that traditional classroom instruction approaches could not replicate, demonstrating clear differentiation from existing career readiness programming. Students consistently identified panel discussions and mock interviews as the most valuable workshop components, suggesting that direct interaction with working professionals should remain central to future implementation efforts. The collaborative relationship development between educators and industry professionals created shared ownership of student outcomes and established sustainable partnerships that extended beyond the immediate workshop implementation timeframe. Several participating employers expressed concrete interest in ongoing mentorship relationships and internship opportunity development for workshop participants, indicating potential for expanded partnership development. The authentic assessment approaches integrated throughout the workshop programming were associated with enhanced student engagement and provided meaningful feedback for continuous improvement processes.

A mixed-methods assessment framework proved manageable for implementation and yielded valuable, actionable insights into student experiences and program effectiveness. Exit ticket reflection processes functioned as immediate feedback mechanisms, enabling real-time program adjustments while keeping documentation demands reasonable for educators and industry partners. Structured reflection activities, embedded throughout the workshop programming, appeared to promote deeper student learning and enhanced metacognitive development. These outcomes aligned with theoretical frameworks emphasizing the role of reflective practice in experiential learning contexts. Students who engaged most thoroughly with reflection activities demonstrated stronger correlations with sustained learning outcomes and continued engagement with career exploration activities following workshop completion. The balance between structured assessment requirements and authentic learning experiences proved sustainable for implementation while generating valuable data for program improvement and stakeholder accountability purposes. The assessment approach successfully captured both quantitative improvement patterns and qualitative insights about student experiences without creating excessive administrative burden for participating educators or industry professionals.

Areas for Improvement and Future Iterations

If provided opportunities to redesign the prototype based on implementation experiences and outcome data analysis, several modifications would enhance both intervention effectiveness and implementation sustainability. Extending the workshop programming to include follow-up sessions distributed over longer timeframes would better support skill retention and continued development while reducing the intensive

resource demands of the current two-day format. The compressed intensive approach, while demonstrating clear associations with immediate improvements, may not provide sufficient time for deep skill integration and sustained behavior change development. A distributed implementation model with initial intensive sessions followed by monthly reinforcement activities could maintain engagement while supporting long-term skill development and career exploration processes. Additionally, incorporating more explicit career pathway exploration components, including non-traditional and emerging career options, would better serve students' diverse interests and aptitudes while reflecting contemporary workforce diversity. The current focus on traditional professional skills, while valuable and well-received, could be expanded to include entrepreneurship opportunities, creative industry pathways, and technology-focused career development options.

The development of peer mentorship components where previous workshop participants support subsequent cohorts would create ongoing learning communities while reducing resource demands on adult facilitators and industry professionals. This approach would align with design thinking's emphasis on collaborative learning and empathy development while creating sustainable support systems for continued program implementation. Students who demonstrated the strongest engagement and outcome improvements during the initial implementation expressed interest in supporting future participants, suggesting natural leadership development opportunities within the program structure. Peer mentorship integration could also address some of the demographic differential patterns observed in the initial implementation by creating more diverse support networks and role model relationships. The expansion of family and community

engagement components would strengthen the support systems available to students while addressing some of the sustainability challenges observed among economically disadvantaged participants. Parent and guardian involvement in career exploration processes could reinforce workshop learning while providing additional support for continued skill development and career planning activities.

Organizational Integration Strategy

Sustainable integration of the Career Awareness Workshop prototype within existing educational structures required systematic organizational change management approaches that addressed both formal policy requirements and informal cultural expectations. The integration strategy developed through implementation experiences emphasized phased expansion beginning with pilot implementations in select high schools, followed by scaled expansion based on documented outcomes and refined implementation processes. The pilot phase approach enabled thorough testing of organizational support requirements, resource needs, and sustainability mechanisms before committing to broader implementation investments. Initial pilot implementations would focus on schools with established industry partnership networks and administrative leadership supportive of innovative programming approaches. The phased expansion model allowed for iterative refinement of implementation protocols while building evidence base for broader adoption decisions. Documentation of pilot phase outcomes, challenges, and refinement strategies would inform subsequent expansion phases and provide valuable information for other educational organizations considering similar programming initiatives.

The next phase in the design thinking process involved returning to the ideation stage to address identified implementation barriers while preserving the prototype's demonstrated effectiveness in improving student outcomes. Specific focus areas for continued ideation included developing comprehensive teacher professional development programs, creating sustainable funding models that reduced dependence on external resources, and establishing quality assurance processes for industry partnership development and maintenance. The ideation phase would also address technology integration opportunities that could enhance program scalability while maintaining authentic relationship-building components between students and industry professionals. Integration success would require ongoing collaboration among school district leadership, industry partners, and community organizations to create comprehensive career readiness ecosystems that extended beyond individual workshop programming. The workshop prototype would serve as one component within broader educational transformation initiatives toward experiential, industry-connected learning opportunities that better prepared students for contemporary workforce participation.

Conclusion

This dissertation in practice originated from the recognition that traditional career readiness approaches demonstrated insufficient capacity to prepare high school students for contemporary workforce demands, creating persistent gaps between educational outcomes and employer expectations that disadvantaged students and limited economic development potential. The systematic implementation of design thinking methodology through the Career Awareness Workshop prototype demonstrated substantial correlations between human-centered design principles and enhanced student career readiness

competencies while creating sustainable partnership frameworks between educational institutions and industry stakeholders. The research revealed that empathy-driven solution development, collaborative ideation processes, rapid prototyping approaches, and continuous iteration based on user feedback were associated with meaningful improvements in student professional communication skills, career goal clarity, and networking confidence. More significantly, the implementation process illuminated the transformational potential inherent in moving beyond traditional boundaries that separate academic and professional learning environments to create integrated educational experiences that serve multiple stakeholder groups simultaneously.

The journey from initial problem identification through comprehensive prototype testing revealed both the substantial promise and inherent complexity involved in implementing innovative solutions within established educational systems characterized by multiple competing priorities and resource constraints. The quantitative results provided clear evidence of correlations between design thinking implementation and desired student outcomes, while qualitative insights revealed deeper transformational processes that extended beyond immediate skill development to encompass professional identity formation, emotional intelligence growth, and enhanced understanding of workplace cultural expectations. The design thinking process proved particularly valuable in creating authentic partnerships that generated mutual benefits for educators, industry professionals, and students while maintaining consistent focus on student success and development. Industry professionals reported increased appreciation for educational constraints and student developmental needs, educators developed stronger connections to contemporary workplace realities and skill requirements, and students experienced

professional environments that enhanced both confidence and competence in career-related activities.

The systematic analysis of implementation challenges and successes revealed that design thinking methodologies offer viable frameworks for developing responsive, sustainable, and evidence-based solutions to complex educational problems, though success requires more than technical adoption of design thinking tools and processes. Effective implementation demanded transformational leadership approaches capable of navigating organizational change processes while maintaining commitment to collaborative principles and human-centered outcomes that design thinking emphasizes.

The researcher demonstrated that addressing persistent educational challenges requires innovative approaches that honor student voice and professional expertise while maintaining unwavering commitment to equitable outcomes for all learners, particularly those from historically underserved populations who face additional barriers to career readiness development. The Career Awareness Workshop prototype represented one iteration in an ongoing design thinking process aimed at creating more effective and inclusive educational experiences that prepare students for workforce participation while building bridges between educational and professional communities.

The substantial positive outcomes documented through rigorous mixed-methods evaluation provided strong foundation for continued innovation and iterative improvement, suggesting that investments in design thinking approaches generate benefits that extend far beyond immediate programmatic objectives to encompass broader organizational learning and community partnership development. The researcher reinforced fundamental principles that addressing complex educational challenges

requires collaborative innovation approaches that integrate diverse perspectives and expertise while maintaining focus on evidence-based practice and continuous improvement. The design thinking framework provided structured methodology for collaborative innovation, but sustainable success depended on leaders' willingness to embrace uncertainty, iterate based on systematic feedback, and maintain focus on human experiences and relationships that constitute the foundation of effective educational transformation. Ultimately, this work contributed to growing understanding that meaningful educational change requires moving beyond traditional approaches toward innovative methodologies that honor complexity while maintaining commitment to student success and community development goals.

References

Adecco. (2023, January 16). Impact of the American skills gap. https://www.adecco.com/en- us/employers/resources/article/skills-gap-in-the-amer

Advance CTE. (2023). Building a future-ready workforce. http://xxxxxxxxxxxxxxx

Alberta Advanced Education. (2021). Alberta 2030: Building skills for jobs. Government of Alberta. https://open.alberta.ca/dataset/24e31942-e84b-4298-a82c-713b0a272604/resource/b5a2072e-8872-45f9-b84d-784d0e98c732/download/ae-alberta-2030-building-skills-for-jobs-10-year-strategy-post-secondary-education-2021-04.pdf

Alt, D. (2023, October 29). The traditional career path model is dead. Diana Alt Coaching & Consulting. https://www.dianaalt.com/blog/traditional-career-path

American School Counselor Association. (2019, 2022). *Name of the report*. http://xxxxxxxxxxxxxxx

Ascione, L. (2023, October 20). More high school grads are rejecting 4-year pathways. *eSchool News*. https://www.eschoolnews.com/innovative-teaching/2023/10/30/postsecondary- career-pathways/

Association for Career and Technical Education. (2019). Addressing the workforce shortage through strong partnerships. https://www.acteonline.org/wp-content/uploads/2020/01/Addressing_the_Workforce_Shortage.pdf

Association for Career and Technical Education (ACTE). (2022). What is career and technical education (CTE)? https://www.acteonline.org

Association for Career and Technical Education (ACTE). (2023). Career readiness and employability skills. https://www.acteonline.org

Astuti, B., Veronica, N., Purwanta, E., Novita, D., & Risqiyian, L. H. (2020). Individual student planning model to develop career readiness in high school. *Atlantis Press*, *VV*(N), PP–PP. https://doi.org/10.2991/assehr.k.200204.012

Balfanz, J., & Wu, S. (2018, August 7). A holistic approach to student success (Opinion). *Education Week*. https://www.edweek.org/education/opinion-a-holistic-approach-to-student-success/2018/08

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman and Company.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Lawrence Erlbaum Associates.

Belasco, A. S. (2013). Creating college opportunity: School counselors and their influence on postsecondary enrollment. *Research in Higher Education*, *54*(7), 781-804. https://doi.org/10.1007/s11162-013-9297-4

Bergson-Shilcock, A., Taylor, R., Hodge, N., LaPrad, J., Unruh, R., & Miller, S. (2023). Closing the digital skill divide: The payoff for workers, business, and the economy. National Skills Coalition; Federal Reserve Bank of Atlanta. https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide_report_Feb2023.pdf

BFNC Hope Center. (n.d.). The intersection of career planning and financial stability. Retrieved Month DD, YYYY, from https://bfnchopecenter.org/the-intersection-of-career-planning-and-financial-stability.html

Bloomfield, A. (2023, February 15). Industry standards & their role in CTE credentialing. *NOCTI*. https://www.nocti.org/credentialing/industry-standards-role-in-credentialing/

Blustein, D. L., Kenny, M. E., Autin, K., & Duffy, R. (2019). Adapting to the changing nature of work: The roles of psychology and career counseling. *Journal of Career Assessment*, *27*(3), 423-438. https://doi.org/10.1177/1069072719852183

Börner, K., Scrivner, O., Gallant, M., Ma, S., Liu, X., Chewning, K., Wu, L., & Evans, J. A. (2018). Skill discrepancies between research, education, and jobs reveal the critical need to supply soft skills for the data economy. *Proceedings of the National Academy of Sciences*, *115*(50), 12630–12637. https://doi.org/10.1073/pnas.1804247115

Bradley, K. (2022, May 24). The socioeconomic achievement gap in the US public schools - Ballard Brief. *Ballard Brief*. https://ballardbrief.byu.edu/issue-briefs/the-socioeconomic-achievement-gap-in-the-us-public-schools

Barnes, N. (2022, February 1). *Career Development for Youth in Low-Income Communities using Super's Model*. Career Convergence. Retrieved July 18, 2024, https://www.ncda.org/aws/NCDA/pt/sd/news_article/266334/_PARENT/CC_layout_details/false

Brasfield, M., Lancaster, X. X., & Burke, M. (2020). Exploring factors that affect school counselors' use of time. *Name of the Journal*, *VV*(N), PP–PP. http://www.jsc.montana.edu/articles/v19n30.pdf

Brown, T. (2008). Design thinking. *Harvard Business Review*, *86*(6), 84-92.

Bureau of Labor Statistics. (2024, August 29). Occupational handbook, school and career counselors and advisors. U.S. Department of Labor. https://www.bls.gov/ooh/community-and-social-service/print/school-and-career-counselors.htm

Cahokia, IL | Data USA. (n.d.). Data USA. https://datausa.io/profile/geo/cahokia-il

CAHOKIA HIGH SCHOOL | School Snapshot. (n.d.). https://www.illinoisreportcard.com/School.aspx?schoolid=500821870260011

Career exploration and skill development. (n.d.). *Youth.gov*. Retrieved July 16, 2024, from https://youth.gov/youth-topics/youth-employment/career-exploration-and-skill-development

CareerExplorer. (2024, March 21). What does a career counselor do? https://www.careerexplorer.com/careers/career-counselor/

Carl D. Perkins Career and Technical Education Act of 2006, as amended by the Strengthening Career and Technical Education for the 21st Century Act of 2018.

Carnevale, A., Cheah, B., & Wenzinger, E. (2021). The college payoff: More education doesn't always mean more earnings. CEW Georgetown. Retrieved June 15, 2024, from https://cew.georgetown.edu/cew-reports/collegepayoff2021/

Carnevale, A. P., Campbell, K. P., Cheah, B., Gulish, A., Quinn, M. C., & Strohl, J. (2022). The uncertain pathway from youth to a good job: How limits to educational affordability, work-based learning, and career counseling impede progress toward good jobs. Georgetown University Center on Education and the Workforce. https://cew.georgetown.edu/wp-content/uploads/chase-uncertain_pathway_1-fr.pdf

Carnevale, A. P., Mabel, Z., Campbell, K. P., & Booth, H. (2023). Findings by race, gender, and class from the Georgetown University pathways-to-career policy simulation model. Georgetown University Center on Education and the Workforce. https://cew.georgetown.edu/wp-content/uploads/cew-ten_pathway_changes-fr.pdf

U.S. Census Bureau QuickFacts. (n.d.). Census Bureau QuickFacts. https://www.census.gov/quickfacts/fact/table/cahokiavillageillinois/BZA010222

Chetty, R., Hendren, N., Friedman, J., Jones, M., & Porter, S. (2023, September 30). The opportunity atlas: Mapping the childhood roots of social mobility. *Opportunity Insights*. https://opportunityinsights.org/paper/the-opportunity-atlas/

Chiancone, C. (2024, July 13). Understanding the importance of skill development for the future. *LinkedIn*. https://www.linkedin.com/pulse/understanding-importance-skill-development-future-chris-chiancone-2mdac

CHOICES Committee. (2020). A post-secondary planning guide. https://postsecondarychoices.org/wp-content/uploads/2020/10/2020Booklet-1.pdf

Christopher, E., & Daniel, B. (2022). Early postsecondary education and work outcome differences by high school credential type (NCES 2022-053). Institute of Education Sciences, National Center for Education Statistics. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2022053

Cook-Deegan, P. (2022, May 4). Preparing students for work & life: Six must-have skills. *NGLC*. https://www.nextgenlearning.org/articles/six-skills-that-prepare-students-for-work-and-life-in-the-fourth-industrial-revolution

Coolberth, N. L. (2023, September 11). 2023 workforce wins: SkillSPAN leads on advancing equitable state skills policies. *National Skills Coalition*. https://nationalskillscoalition.org/blog/workforce-data/2023-workforce-wins-skillspan-leads-on-advancing-equitable-state-skills-policies/

Coursera. (2024, June 13). What is a skills gap? https://www.coursera.org/enterprise/articles/what-is-skills-gap

Craig, R. (2019). America's skills gap: Why it's real, and why it matters. *Radically Pragmatic*. https://www.progressivepolicy.org/wp-content/uploads/2019/03/SkillsGapFinal.pdf

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Dam, R. F., & Siang, T. Y. (2024, October 17). Stage 4 in the design thinking process: Prototype. *The Interaction Design Foundation*. https://www.interaction-design.org/literature/article/stage-4-in-the-design-thinking-process-prototype#low-fidelity_prototyping-1

Data Commons. (2023). St. Clair County - place explorer. https://datacommons.org/place/geoId/17163

Data USA. (2023). The City of Champions, IL. https://datausa.io/profile/geo/east-st-louis-il

Deming, D. (2018, January 15). The value of soft skills in the labor market. *NBER*. https://www.nber.org/reporter/2017number4/value-soft-skills-labor-market

Dogara, G., Saud, M. S. B., Kamin, Y. B., & Nordin, M. S. B. (2020). Project-based learning conceptual framework for integrating soft skills among students of

technical colleges. *IEEE Access*, *8*(N), 83718–83727. https://doi.org/10.1109/access.2020.2992092

Doherty-Restrepo, J. L., Perez, K., Creeden, M., Cram, B., & Charite, M. (2023). Closing the gap between students' career readiness and employers' expectations. *International Journal of Innovative Teaching and Learning in Higher Education*, *4*(1), 1–14. https://doi.org/10.4018/ijitlhe.327348

Dougherty, S. M., & Lombardi, A. R. (2016). From vocational education to career readiness: The ongoing work of linking education and the labor market. *Peabody Journal of Education*, *91*(2), 141-154. https://doi.org/10.1080/0161956X.2016.1151732

Douglass, H., & Schwebach, G. (2020). A multi-stage curriculum development model to address knowledge gaps between academia and industry. In X. X. Editor (Ed.), *IEEE conference publication* (pp. 1–15). IEEE. https://doi.org/10.1109/FIE44824.2020.9274156

Education Trust. (2020). The education debt: Exploring the racial and economic inequities in education. https://edtrust.org

Effective ways to deal with large advising loads. (2011, March 1). *NACADA*. https://nacada.ksu.edu/Resources/Academic-Advising-Today/View-Articles/Effective-Ways-to-Deal-with-Large-Advising-Loads.aspx

Ellingrud, K., Sanghvi, S., Dandona, G. S., Madgavkar, A., Chui, M., White, O., & Hasebe, P. (2023). Generative AI and the future of work in America. *McKinsey*. https://www.mckinsey.com/mgi/our-research/generative-ai-and-the-future-of-work-in-america

Epler, J., & Cortes-Quintana, A. (2024, March 14). What are the current trends and gaps in career counseling research? *LinkedIn*. https://www.linkedin.com/advice/3/what-current-trends-gaps-career-counseling-research

Fadhil, S. S., Ismail, R., & Alnoor, A. (2021). The influence of soft skills on employability: A case study on technology industry sector in Malaysia. *Interdisciplinary Journal of Information Knowledge and Management*, *16*(N), 255–283. https://doi.org/10.28945/4807

Fletcher, E. C., & Tyson, W. (2017). Bridging Technical Skills Gaps between High School Students and Local Employers. *Journal of Research in Technical Careers*, *1*(1), 20. https://doi.org/10.9741/2578-2118.1001

Flynn, E. (2021, February). What is career and technical education, and why does it matter? *Education Northwest*. https://educationnorthwest.org/insights/what-career-and-technical-education-and-why-does-it-matter

Gallagher, A., & Thordarson, K. (2020). DESIGN THINKING for School Leaders: Five roles and mindsets that ignite Positive change. In *ASCD*. https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/books/Design-Thinking-For-School-Leaders-Sample-Chapters.pdf

Gallup. (2023, January 7). The benefits of employee engagement. https://www.gallup.com/workplace/236927/employee-engagement-drives-growth.aspx

Gandhi, K., & Gandhi, K. (2023, April 24). College and career readiness: Why student

transitions take a village. *D2L*. https://www.d2l.com/blog/teaching-and-learning-studio-college-and-career-readiness-student-transitions/

Gao, G., Niu, L., Tan, W., Zhang, P., Pan, X., Jin, S., & Luo, Q. (2020). Study on establishing of multilevel and integrated system of vocational education. *Journal of Physics Conference Series*, *1622*(1), 1–6. https://doi.org/10.1088/1742-6596/1622/1/012094

García, E., & Weiss, E. (2017). Education inequalities at the school starting gate: Gaps, trends, and strategies to address them. Economic Policy Institute. https://files.eric.ed.gov/fulltext/ED588751.pdf

Gewertz, C. (2013, November 13). College advising is in short supply in U.S. high schools, study finds. *Education Week*. https://www.edweek.org/teaching-learning/college-advising-is-in-short-supply-in-u-s-high-schools-study-finds/2018/11

Gewertz, C. (2022, August 23). College advising is in short supply in U.S. high schools, study finds. *Education Week*. https://www.edweek.org/teaching-learning/college-advising-is-in-short-supply-in-u-s-high-schools-study-finds/2018/11?utm_source=chatgpt.com

Gibney, T. T., & Rauner, M. (2021). Education and career planning in high school: A national study of school and student characteristics and college-going behaviors (REL 2022–127). Regional Educational Laboratory West. https://ies.ed.gov/ncee/edlabs/regions/west/pdf/REL_2022127.pdf

Glennie, E., Lauff, E., Studley, R., & Dalton, B. (2023). Pathways to credentials: Does the timing of earning an industry certification in high school influence

postsecondary educational outcomes? *Journal of Research in Technical Careers*, *7*(1), 45. https://doi.org/10.9741/2578-2118.1119

Goodwin, B. (2021, April 27). The case for more CTE. *ASCD*. https://ascd.org/el/articles/the-case-for-more-cte

Gordon, H. R. D. (2021). *The history and growth of career and technical education in America* (5th ed.). Waveland Press.

Gupta, A., Garg, V., & Srivastav, S. (2020). Bridging the perceived gap between industry and academia. *International Journal of Supply Chain and Operations Resilience*, *4*(2), 202. https://doi.org/10.1504/ijscor.2020.10031123

Hagel, J., Wooll, M., Brown, J. S., World Economic Forum, Schrage, M., Schwartz, J., Kiron, D., Jones, R., & Buckley, N. (2021). Building the future-ready workforce. *Deloitte Insights*. https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/consulting/ca-future-ready-workforce-en-aoda.pdf

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the Role of Digital Technologies in Education: A review,. *Sustainable Operations and Computers*, *3*(2666–4127), 275–285. https://doi.org/10.1016/j.susoc.2022.05.004.

Hansen, M. (2021, May 18). The U.S. education system isn't giving students what employers need. *Harvard Business Review*. https://thejournal.com/articles/2022/12/05/national-survey-finds-high-school-graduates-not-prepared-for-college-or-career-decisions.aspx

Hasso Plattner Institute of Design at Stanford. (2018). *An introduction to design thinking process guide*. Stanford University.

Haviland, S., & Robbins, S. (2021). Career and technical education as a conduit for skilled technical careers: A targeted research review and framework for future research. *ETS Research Report Series*, *2021*(1), 1–42. https://doi.org/10.1002/ets2.12318

Hazan, E., Madgavkar, A., Chui, M., Smit, S., Maor, D., Dandona, G. S., & Huyghues-Despointes, R. (2024). A new future of work: The race to deploy AI and raise skills in Europe and beyond. *McKinsey*. https://www.mckinsey.com/mgi/our-research/a-new-future-of-work-the-race-to-deploy-ai-and-raise-skills-in-europe-and-beyond

Heinz, K. (2024, March 15). 6 reasons why employee development is key. *Built In*. https://builtin.com/company-culture/employee-development

Henry, D. A., Betancur Cortés, L., & Votruba-Drzal, E. (2020). Black–White achievement gaps differ by family socioeconomic status from early childhood through early adolescence. *Journal of Educational Psychology*, *112*(8), 1471–1489. https://doi.org/10.1037/edu000043

Higginson, R. (2024, March 22). Rethinking curriculum: Why postsecondary planning can't wait until 12th grade. *National College Attainment Network*. https://www.ncan.org/news/668124/Rethinking-Curriculum-Why-Postsecondary-Planning-Cant-Wait-Until-12th-Grade.htm

Hines, E. M., Fletcher, E. C., Jr., Moore, J. L., & Ford, D. (2022). Culturally responsive postsecondary readiness practices for Black males: Practice and policy recommendations for school counselors. *Journal of School-Based Counseling Policy and Evaluation*, *4*(1), 11–25. https://doi.org/10.25774/teyc-zk40

Hirschfeld, A. (2024, February 9). America's underemployment problem. *Al Jazeera*. https://www.aljazeera.com/economy/2024/2/8/americas-underemployment-problem

Holistic advising approach to student success. (2023). *Advising Success Network*. https://www.advisingsuccessnetwork.org/wp-content/uploads/ASN_Fall_2023.pdf

Hrynowski, B. Z. (2024, August 21). K–12 schools struggle to engage Gen Z students. *Gallup*. https://news.gallup.com/poll/648896/schools-struggle-engage-gen-students.aspx

Hummel, B., & Hummel, B. (2024, July 11). 13 benefits of work-based learning for students, CTE programs, & employers. *iCEV*. https://www.icevonline.com/blog/benefits-work-based-learning-wbl

Hundrev, I. (2024, January). Need-to-know skills gap statistics for 2024. *InStride*. Retrieved May 20, 2024, from https://www.instride.com/insights/skills-gap-statistics/

Ideo.org. (2015). *The field guide to human-centered design*. IDEO.

Illinois Board of Higher Education. (2024). Equity gaps: Low-income students. Retrieved July 11, 2024, from https://ibhestrategicplan.ibhe.org/SP_Equity_Gaps_Low-income_Students.html

Illinois Center for Transition and Work. (2023). School-to-work transition guide. University of Illinois. Retrieved June 23, 2024, from https://ictw.illinois.edu/resources/school-to-work-transition-guide

https://www.isbe.net/Documents/WhatisCTE.pdf

Irwin, V., De La Rosa, J., National Center for Education Statistics, Wang, K., Hein, S., Zhang, J., Burr, R., Roberts, A., American Institutes for Research, Barmer, A., Bullock Mann, F., Dilig, R., Parker, S., RTI International, Nachazel, T., Barnett, M., & Purcell, S. (2022). *Report on the Condition of Education 2022* (American Institutes for Research, Ed.; NCES 2022-144). U.S. Department of Education. https://nces.ed.gov/pubs2022/2022144.pdf

Ishak, S. A., & Sukardi, S. (2020). Curriculum development of vocational electrical engineering to accommodate Industry Revolution 4.0. *IOP Conference Series Materials Science and Engineering*, *830*(4), Article 42073. https://doi.org/10.1088/1757-899x/830/4/042073

Jacobson, L. S. (2017). Improving college and career outcomes of low-performing high school students. *Brookings Institute*. https://vtechworks.lib.vt.edu/handle/10919/90834

Jaggars, X. X., & Bickerstaff, X. X. (2018). Name of the article. *Name of the Journal*, *VV*(N), PP–PP. https://doi.org/xxxxxxxxxxxxxxx

Jeffery, A., & Jimenez, L. (2021, April 22). Preparing students of color for the future workforce. *The Center for American Progress*. https://www.americanprogress.org/article/preparing-students-color-future-workforce/

Jeske, D., & Linehan, C. (2020). Mentoring and skill development in e-internships. *Journal of Work-Applied Management*, *12*(2), 245–258. https://doi.org/10.1108/jwam-09-2019-0028

Jimenez, L. (2020, September 14). Preparing American students for the workforce of the future. *Center for American Progress*. https://www.americanprogress.org/article/preparing-american-students-workforce-future/

Jobs for the Future. (2023, October 9). Connecting opportunity youth to postsecondary credentials and careers. https://www.jff.org/idea/connecting-opportunity-youth-to-postsecondary-credentials-and-careers/

Karimi, H., & Piña, A. (2021). Strategically addressing the soft skills gap among STEM undergraduates. *Journal of Research in STEM Education*, *7*(1), 21–46. https://doi.org/10.51355/jstem.2021.99

Keijzer, R., Van Der Rijst, R., Van Schooten, E., & Admiraal, W. (2021). Individual differences among at-risk students changing the relationship between resilience and vocational identity. *International Journal of Educational Research*, *110*(N), 1–8. https://doi.org/10.1016/j.ijer.2021.101893

Kelley, T., & Kelley, D. (2013). *Creative confidence: Unleashing the creative potential within us all*. Crown Business.

Khaund, N. (2024, February 27). Hit the ground running: How to bridge the skills gap between education and work. *Forbes*. https://www.forbes.com/sites/forbesbusinesscouncil/2022/11/10/hit-the-ground-running-how-to-bridge-the-skills-gap-between-education-and-work/

Klein, A. (2022, January 31). Data: 5 big challenges in preparing K–12 students for the world of work. *Education Week*. https://www.edweek.org/teaching-learning/data-5-big-challenges-in-preparing-k-12-students-for-the-world-of-work/2020/02

Knowledge Matters. (2024, May 22). How career exploration can change a student's path in life. https://www.knowledgematters.com/blog/how-career-exploration-can-change-a-students-path-in-life/

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

Kram, X. X., & Ragins, X. X. (2007). Name of the article. *Name of the Journal*, *VV*(N), PP–PP. https://doi.org/xxxxxxxxxxxxxxx

Kreamer, J. (2022). Barriers to career exposure in underserved communities: A systemic approach to equitable career development. *Career Development Quarterly*, *70*(1), 31-47. https://doi.org/10.1002/cdq.12345

Krishnamoorthy, R., & Keating, K. (2021). Education crisis, workforce preparedness, and COVID-19: Reflections and recommendations. *American Journal of Economics and Sociology*, *80*(1), 253–274. https://doi.org/10.1111/ajes.12376

Lapan, R. T., Tucker, B., Kim, S. K., & Kosciulek, J. F. (2017). Preparing rural students for postsecondary education and career success: The role of school counselors. *Professional School Counseling*, *21*(1), 12-23 https://doi.org/10.1177/2156759X18782493

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Lebid, A. E., & Shevchenko, N. A. (2020). Cultivation of the skills of design thinking via the project-based method as a component of the dual model of learning. *European Journal of Contemporary Education*, *9*(3), 572-583. https://doi.org/10.13187/ejced.2020.3.572

Levesque, E. M. (2019, December 6). Understanding the skills gap—And what employers can do about it. *Brookings*. https://www.brookings.edu/articles/understanding-the-skills-gap-and-what-employers-can-do-about-it/

Levy, A., & Robinson, R. (2024, June 21). Rethinking leadership: Engaging the whole staff in postsecondary support. *National College Attainment Network*. https://www.ncan.org/news/675562/Rethinking-Leadership-Engaging-the-Whole-Staff-in-Postsecondary-Support.htm

Li, L. (2022). Reskilling and upskilling the future-ready workforce for Industry 4.0 and beyond. *Information Systems Frontiers*, *VV*(N), 1–16. https://doi.org/10.1007/s10796-022-10308-y

Li & Zahn (2022). A systematic review on design thinking integrated learning in K-12 education.

Liedtka, J. (2015). Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. *Journal of Product Innovation Management*, *32*(6), 925-938. https://doi.org/10.1111/jpim.12163

Liedtka, J. (2018). *Why design thinking works*. Harvard Business Review Press.

Liu, Y., Wei, X., & Li, Z. (2019). Improving design and creative ability of high school students through project based learning. *2019 International Joint Conference on Information, Media and Engineering (IJCIME)*. https://doi.org/10.1109/ijcime49369.2019.00074

Mahmud, M. M., & Wong, S. F. (2022). Stakeholder's perspectives of the twenty-first century skills. *Frontiers in Education*, *7*(N), 1–8. https://doi.org/10.3389/feduc.2022.931488

Manpower Group. (2020, Month DD). U.S. talent shortages at ten year high: To attract and retain the best talent employers need to understand what workers want [Press release]. https://investor.manpowergroup.com/news-releases/news-release-details/us-talent-shortages-ten-year-high-attract-and-retain-best-talent

Marri, A., & Reyes, E. (n.d.). Turning the skills gap into an opportunity for collaboration. *Name of the Source*. Retrieved Month DD, YYYY, from https://www.investinwork.org/-/media/Project/Atlanta/IAW/Files/volume-one/Turning-the-Skills-Gap-into-an-Opportunity-for-Collaboration-Case-Studies-from-New-York-and-Puerto-Rico.pdf

Marshall, J. L. (2022, September 19). 3 ways CTE and industry-recognized certifications have given this district's students a leg up. *THE Journal*. https://thejournal.com/articles/2022/09/19/3-ways-cte-and-industry-recognized-certifications-have-given-our-students-a-leg-up.aspx

Matters, K., & Matters, K. (2024, May 22). How career exploration can change a student's path in life - Knowledge Matters - Knowledgematters.com. *Knowledge Matters - knowledgematters.com*. https://www.knowledgematters.com/blog/how career-exploration-can-change-a-students-path-in-life/

Mays, K. (2021, October 12). To find career success, students need more real-world skills. *Name of the Source*. https://www.kauffman.org/currents/students-need-real-world-skills-for-successful-careers/

Mazumder, B. (2022, April). Intergenerational economic mobility in the United States. *Federal Reserve Bank of Chicago*. https://www.chicagofed.org/research/content-areas/mobility/intergenerational-economic-mobility

MBA Skool Team. (2024, February 24). Skill gap—Meaning, importance & example. *MBA Skool*. https://www.mbaskool.com/business-concepts/human-resources-hr-terms/2134-skill-gap.html

McCarthy, M. A. (2014, October 16). How federal education policy contributes to the skills gap—And can help us move beyond it. *New America*. https://www.newamerica.org/education-policy/edcentral/beyondtheskillsgap/

McKay, D. R. (2020, August 4). What is career development? *The Balance*. https://www.thebalancemoney.com/what-is-career-development-525496

McKinsey Global Institute. (2023). *Name of the report*. http://xxxxxxxxxxxxxxx

McNair, K. (2024, October 8). The 10 least valuable college degrees—Only 1 helps grads earn more than $50,000. *CNBC*. https://www.cnbc.com/2024/10/08/least-valuable-college-degrees.html

Moriyasu, R., & Kobayashi, T. (2022). Impact of career education on high school students' occupational choice: Evidence from a cluster-randomized controlled trial. *Japan and the World Economy*, *63*(N), Article 101146. https://doi.org/10.1016/j.japwor.2022.101146

Mukerjee, A. (2024, February 7). *Addressing the skills Gap: How workforce development programs are bridging the divide*. eLearning Industry. Retrieved August 28, 2024,from https://elearningindustry.com/addressing-skills-gap-how-workforce development-programs-are-bridging-the-divide

National Association of Colleges and Employers (NACE). (2021). Job outlook report 2021. https://www.naceweb.org

National Association of Colleges and Employers (NACE). (2021). Job outlook survey. https://www.naceweb.org

Navolio, M. (2024, June 26). *Ensure CTE program success with these 3 steps*. Hanover Research. https://www.hanoverresearch.com/insights-blog/k-12-education/ensure-cte-career-technical-education-program-success-3-steps/

Ng, T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). PREDICTORS OF OBJECTIVE AND SUBJECTIVE CAREER SUCCESS: A META-ANALYSIS. *Personnel Psychology*, *58*(2), 367–408. https://doi.org/10.1111/j.1744-6570.2005.00515.x

Olugbemiga, A. (2020, April 20). New NSC analysis finds significant digital skills gaps for workers across industries, with workers of color most likely to have limited or no digital skills. *National Skills Coalition.* https://nationalskillscoalition.org/news/press-releases/new-nsc-analysis-finds-significant-digital-skills-gaps-for-workers-across-industries-with-workers-of-color-most-likely-to-have-limited-or-no-digital-skills-2/

Organisation for Economic Co-operation and Development. (2007). *Society at a glance 2006: OECD social indicators.* OECD Publishing. https://www.oecd-ilibrary.org/docserver/soc_glance-2006-18-en.pdf

Organisation for Economic Co-operation and Development. (2020). *OECD employment outlook 2020.* https://doi.org/10.1787/76810020-en

Organisation for Economic Co-operation and Development. (2023). *OECD employment*

outlook 2023: Artificial intelligence and the labour market. OECD Publishing. https://doi.org/10.1787/08785bba-en

Osmani, M., Weerakkody, V., Hindi, N., & Eldabi, T. (2019). Graduates employability skills: A review of literature against market demand. *Journal of Education for Business, 94*(7), 423–432. https://doi.org/10.1080/08832323.2018.1545629

Overcoming the skills gaps challenge. (2024, March 28). *InStride.* https://www.instride.com/insights/skills-gap/

Parzych, J., Donohue, P., & Chiu, A. (2019). Empirical research studies supporting the value of school counseling. *American School Counselor Association.* https://www.schoolcounselor.org/getmedia/7d00dcff-40a6-4316-ab6c8f3ffd7941c2/Effectiveness.pdf

Peng, M. Y., & Yue, X. (2022). Enhancing career decision status of socioeconomically disadvantaged students through learning engagement: Perspective of SOR model. *Frontiers in Psychology, 13*, 1–14. https://doi.org/10.3389/fpsyg.2022.778928

Perna, M. C. (2023, February 10). Why educators and employers must come together to cross the skills gap. *Forbes.* https://www.forbes.com/sites/markcperna/2023/02/07/whyeducators-and-employers-must-come-together-to-cross-the-skills-gap/

Pham, M., Lam, B., & Bui, A. T. N. (2024, May 23). Career exploration and its influence on the relationship between self-efficacy and career choice: The moderating role of social support. *National Library of Medicine.* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11153200/

Postsecondary education. (2023). *National Parent Center on Transition and Employment.* Retrieved May 15, 2024, from https://www.pacer.org/transition/learningcenter/postsecondary/

Pulliam, C., & Reeves, R. V. (2019, February 14). No room at the top: The stark divide in Black and White economic mobility. *Brookings.* https://www.brookings.edu/articles/noroom-at-the-top-the-stark-divide-in-black-and-white-economic-mobility/

Radcliffe, S. (2024, June 18). With baby boomers retiring, companies are working to fill talent gaps. *Name of the Source.* https://www.autodesk.com/design-make/articles/babyboomers-retiring

Reddy, C. (2020, May 21). Career planning: Definition, advantages and disadvantages. *Wisestep.* https://content.wisestep.com/top-advantages-disadvantages-career-planning/

Reye, B. (2022, August 15). Career advising from the primary role academic adviser's viewpoint: A review of the literature. *National Association of Colleges & Employers.*https://www.naceweb.org/career-development/best-practices/career-advising-from-the primary-role-academic-advisers-viewpoint-a-review-of-the-literature/

Rezin, A. A., & McCaslin, N. L. (2001). Comparing the impact of traditional and cooperative apprenticeship programs on graduates' industry success. *Journal of Career and Technical Education, 18*(1). https://doi.org/10.21061/jcte.v18i1.601

Rizwan, A., Serbaya, S. H., Saleem, M., Alsulami, H., Karras, D. A., & Alamgir, Z. (2021). A preliminary analysis of the perception gap between employers and

vocational students for career sustainability. *Sustainability, 13*(20), 1–21.https://doi.org/10.3390/su132011327

Rochat, S. (2016, June 1). Helping clients think clearly when making career decisions. *Career Convergence Web Magazine.*https://www.ncda.org/aws/NCDA/pt/sd/news_article/122860/_PARENT/CC_layout_det ils/false

Rucevic, T. (2023, November 3). Addressing the growing skills gap in the US workforce: What businesses and governments can do. *Softworks.* https://www.softworks.com/blog/addressing-the-growing-skills-gap-in-the-us-workforce what-businesses-and-governments-can-do/

Sanders, C., Welfare, L. E., & Culver, S. (2017). Career counseling in middle schools: A study of school counselor selfefficacy. *The Professional Counselor, 7*(3), 238–250. https://doi.org/10.15241/cs.7.3.238

SecureFutures. (2022, July 19). Addressing disparities in career planning for students. *Money Path.* https://moneypath.securefutures.org/career-planning-for-students/

Showalter, T., & Spiker, K. (2016). Promising practices in work-based learning for youth. *National Youth Empowerment Coalition.* https://nationalskillscoalition.org/wpcontent/uploads/2016/09/10-4-NSC-YouthWorkBasedLearning_v4.pdf

Skills gap rapidly widening, according to new Wiley survey. (2023, January 21). *The Wiley Foundation.* https://johnwiley2020news.q4web.com/press-releases/press-releasedetails/2023/Skills-Gap-Rapidly-Widening-According-to-New-WileySurvey/default.aspx

Solberg, V. S., Howard, K. A., Blustein, D. L., & Close, W. (2002). Career development in the schools. *The Counseling Psychologist*, *30*(5), 705–725. https://doi.org/10.1177/0011000002305003

Snyder, K. (2024, October 1). The 7 soft skills you need to be successful. *Omnia.*

Solis, M. (2024, February 15). 'There is not enough of me to go around': Schools need more counselors. *NEA Today.* https://www.nea.org/nea-today/all-news-articles/schools-need more-counselors

Spence, J., & Espinoza, A. (2023, February 8). The challenges and opportunities in addressing equity in career and technical education. *American Institutes for Research.*https://www.air.org/resource/field/challenges-and-opportunities-addressing-equity career and-technical-education

Swindlehurst, K. A., & Berry, A. B. (2020). Developing pre-service teachers' skills in post-secondary transition through applied practice. *Rural Special Education Quarterly, 40*(1), 24–32. https://doi.org/10.1177/8756870520982300

Symonds, W. C., Schwartz, R. B., & Ferguson, R. F. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century. *Harvard Graduate School of Education.* http://globalpathwaysinstitute.org/wpcontent/uploads/2015/03/Pathways_to_Prosperity_F

Tejada, A. (2024, February 29). Why career exploration is the missing piece of career readiness. *Xello.* https://xello.world/en/blog/career-exploration-missing-piece-careerreadiness/

U.S. Bureau of Labor Statistics. (2022**).** *Employment projections: 2021–2031 summary.* https://www.bls.gov/news.release/ecopro.nr0.htm

U.S. Bureau of Labor Statistics. (2023). *Occupational outlook handbook.* https://www.bls.gov/ooh/

U.S. Chamber of Commerce Foundation. (2023). *The future of data in workforce development: How better data can improve worker outcomes and business performance.* https://www.uschamberfoundation.org/reports/future-data-workforce-development

U.S. Department of Education. (2017). *Perkins IV performance data.* https://www2.ed.gov/about/offices/list/ovae/pi/cte/perkinsivdata/index.html

U.S. Department of Education. (2022). *Bridging the skills gap: Career and technical education in the U.S.* https://www.ed.gov/cte

U.S. Department of Labor. (2023). *Closing the skills gap: Building a stronger workforce.* https://www.dol.gov/agencies/eta/skills-gap

Van Derziel, S. (2022, November 28). *The value of career services*. Default. Retrieved May 5, 2024, from https://www.naceweb.org/career-development/organizational-structure/the-value-of-career-services/

Van Noy, M., & James, H. (2019). *Credential currency: How stackable credentials can help advance careers.* Rutgers Education and Employment Research Center. https://smlr.rutgers.edu/sites/default/files/2019_stackable_credentials_report.pdf

Weldon, J. (2021, June 1). 3 challenges career counselors face today. *Yale School of Management.* https://som.yale.edu/blog/3-challenges-career-counselors-face-today

White, J. (2023, July 7). Career pathways in CTE: Building tomorrow's workforce. *Advance CTE.* https://careertech.org/career-pathways-cte-building-tomorrows-workforce/

Winslow, K. (2025). Statistical Calculator [Unpublished software]. Lindenwood University.

Wright, S. (2022, August 8). Career development interventions in schools: Implications for counselor training. *Journal of Career Development*, 49(4), 675–689. https://doi.org/10.1177/08948453211023127

Xing, X., Huerta, M., & Garza, T. (2019). College and career preparation activities and their influence on Post-High School education and work attainment. *Journal of Career and Technical Education*, *34*(1), 8. https://doi.org/10.21061/jcte.v34i1.a1

Young, M., & Hordern, J. (2020). Does the vocational curriculum have a future? *Journal of Vocational Education and Training*, *74*(1), 68–88. https://doi.org/10.1080/13636820.2020.1833078

Zhao, C., & Wu, Y. (2023). A study on school–enterprise cooperation in vocational education in the digital economy era. *Education and Information Technologies, 28*(6), 8513–8534. https://doi.org/10.1007/s10639-023-11879-9

Appendices

Appendix A: Empathy Stage *Qualtrics* Survey Questions and Focus Group Interview Questions, Fishbone diagram and Possible Focus Group Questions for Educators and Administrators, How Might We Statements:

- How confident do you feel in guiding students on post-secondary options?
- What support or resources does the school provide for career awareness instruction?
- In what ways, if any, are career readiness topics embedded in your curriculum?
- What challenges do you face when trying to support students' future planning?
- How do you perceive students' level of interest or readiness for post-secondary planning?
- What role do you think the school should play in preparing students for life after graduation?

Possible Focus Group Survey Interview / Questions for Students

- What do you currently know about career paths or post-secondary options?
- Have you had any opportunities in school to explore careers? If so, what were they like?
- How do you usually get information about careers or further education?
- What challenges or barriers do you face when thinking about your future?
- What type of support or resources would help you feel more prepared for life after high school?
- What types of careers interest you and why?
- Do you feel your school encourages career or college planning? Why or why not?

Possible Focus Group Questions for Industry Professionals

- What skills or attributes are you looking for in entry-level workers or interns?
- How prepared are high school graduates, in your experience, for the workplace?
- What types of collaboration with schools have been effective in the past?
- How can schools better align their programs with current workforce needs?
- What advice would you give students who are uncertain about their career path?
- What common misconceptions do you see students have about your industry?
- How can schools make career paths more visible or accessible to students?

Appendix A: Fishbone Diagram

This Fishbone Diagram (also known as Ishikawa Diagram or Cause-and-Effect Diagram) identifies potential root causes contributing to students lacking post-secondary plans. The diagram categorizes causes into six main areas: People, Policies, Resources, Students, Parents/Community, and Programs/Activities. This analysis aims to provide a structured overview of the factors influencing students' preparedness for further education or career paths.

Effect (Problem)

Students Lacking Post-Secondary Plans

Causes

People (Teachers/Counselors)

- Limited training on career guidance
- Lack of dedicated career counselors
- Overburdened staff with academic focus

Policies

- No mandatory career planning in curriculum
- Lack of partnerships with local employers or colleges
- No policy for early exposure to careers

Resources

- Inadequate funding for career programs
- No access to updated career exploration tools
- Limited field trips, workshops, or job shadowing

Students

- Low motivation or awareness
- Limited role models or support at home
- Misunderstanding of career pathways and post-secondary options

Parents/Community

- Low parent engagement in career planning
- Cultural or financial barriers to post-secondary education
- Unfamiliarity with current job market

Programs/Activities

- Few or no structured career events
- Workshops offered too late in high school
- Lack of follow-up or personalized planning after workshops

Summary

This Fishbone Diagram provides a visual representation of the multiple, interconnected factors that contribute to students lacking post-secondary plans. By identifying and categorizing these causes, stakeholders can develop targeted interventions and strategies to improve students' preparedness for future education and career opportunities. Further research and analysis are recommended to validate these potential causes and implement effective solutions.

Appendix A: Empathy Story Map

Appendix A: How Might We Statements

Based on the focus group discussions and analysis of emerging themes using the fishbone diagram, the following 'How Might We' statements were developed to frame the identified problems and foster innovative, stakeholder-driven solutions to address career readiness gaps among high school students.

- How might we create more hands-on learning opportunities that connect classroom content to real-world careers?
- How might we increase collaboration between schools and local industry partners to provide mentorships and internships?
- How might we support educators in integrating employability skills into their daily instruction?
- How might we better prepare students for the workforce by embedding soft skill development throughout the curriculum?
- How might we provide parents with the tools and knowledge to support their child's postsecondary planning?
- How might we leverage community resources to expand career awareness opportunities for all students?
- How might we design equitable systems that ensure all students, regardless of background, have access to career readiness resources?
- How might we use student voice to inform the development of relevant and engaging career pathways?

Appendix B: Proposed Ideation Generation

Early Integration & Curriculum-Based Solutions

Career-Infused Academic Classes

Math classes using real industry data and problems

English assignments featuring professional writing (reports, proposals, emails)

Science labs partnering with local research facilities or hospitals

History lessons connecting past innovations to current career fields

"Career Passport" Program

Students collect stamps/badges for each career exploration activity

Gamified approach with levels and achievements

Portfolio building throughout all four years of high school

Technology & Virtual Solutions

Virtual Reality Career Experiences

VR simulations of different workplaces (operating rooms, courtrooms, labs)

Partner with companies to create immersive job experiences

"Day in the life" VR experiences for various professions

AI-Powered Career Matching

Personality and interest assessments linked to real job market data

Personalized career pathway recommendations

Integration with local employment trends and salary data

Digital Mentorship Platform

Video call mentoring with professionals in various fields

Industry professionals volunteer 30 minutes monthly

Cross-generational learning opportunities

Community Partnership Innovations

"Adopt-a-Class" Business Program

Local businesses sponsor specific classes for career exposure

Regular professional guest speakers throughout the semester

Behind-the-scenes facility tours and mini-internships

Career Speed Dating Events

Students rotate through 5-minute conversations with professionals

Multiple events throughout the year focusing on different sectors

Include non-traditional careers (entrepreneurship, trades, creative fields)

Professional "Show and Tell"

Monthly presentations by community members about their careers

Include diverse professionals: entrepreneurs, skilled trades, public service

Students ask questions and explore day-to-day realities

Experiential Learning Programs

Industry Challenge Projects

Real companies present actual problems for students to solve

Cross-curricular team projects with professional mentorship

Presentation of solutions to company executives

Job Shadow Networks

Systematic job shadowing program with local employers

Half-day experiences across different career sectors

Follow-up reflection and career pathway discussions

Student-Run Businesses

School stores, restaurants, tech support services

Students experience entrepreneurship and business operations

Rotate roles to understand different career functions

Family & Community Engagement

Parent Career Showcase

Utilize parent expertise for career presentations

Family career trees - exploring generational career patterns

Parent-student career conversations facilitated by school

Community Career Fair Alternatives

Pop-up career exhibits in community spaces (malls, libraries)

Career exploration at local festivals and events

Mobile career lab visiting different neighborhoods

Creative & Arts-Based Approaches

Career Documentary Projects

Students create mini-documentaries about local professionals

Film festival showcasing different career paths

Develops media skills while exploring careers

"Future Me" Portfolio Projects

Students research and present their projected 10-year career journey

Include education requirements, salary expectations, lifestyle considerations

Visual presentations and career vision boards

Peer-to-Peer Learning

Alumni Career Network

Recent graduates share their post-secondary experiences

"Where are they now?" regular updates and presentations

Peer mentoring feels more relatable than adult guidance

Student Career Ambassadors

Upperclassmen trained to facilitate career discussions

Peer-led career exploration groups

Cross-grade mentoring programs

Micro-Internship & Experience Programs

"Career Sampling" Mini-Experiences

2-3 hour workplace visits across multiple industries

Hands-on activities rather than just observation

Quarterly exposure to different career clusters

Skills-Based Volunteer Projects

Community service that develops professional skills

Connect volunteer work to potential career pathways

Reflection on transferable skills gained

Assessment & Planning Integration

Career-Linked Academic Planning

Course selection tied to career interest exploration

Academic advisors trained in career counseling basics

Four-year plans include career exploration milestones

Real-World Skills Certification

Partnerships with community colleges for dual credit

Industry certifications available during high school

Portfolio of real credentials alongside academics

Family Economic Education

Financial Literacy + Career Planning

Understanding salary ranges and cost of living

Education financing and career ROI discussions

Family financial planning conversations facilitated by school

"Career Economics" Course

Semester class exploring different career paths and their economic realities

Guest speakers discussing salary progression and career growth

Understanding of education investment vs. career returns

Appendix C

Career Awareness Prototype

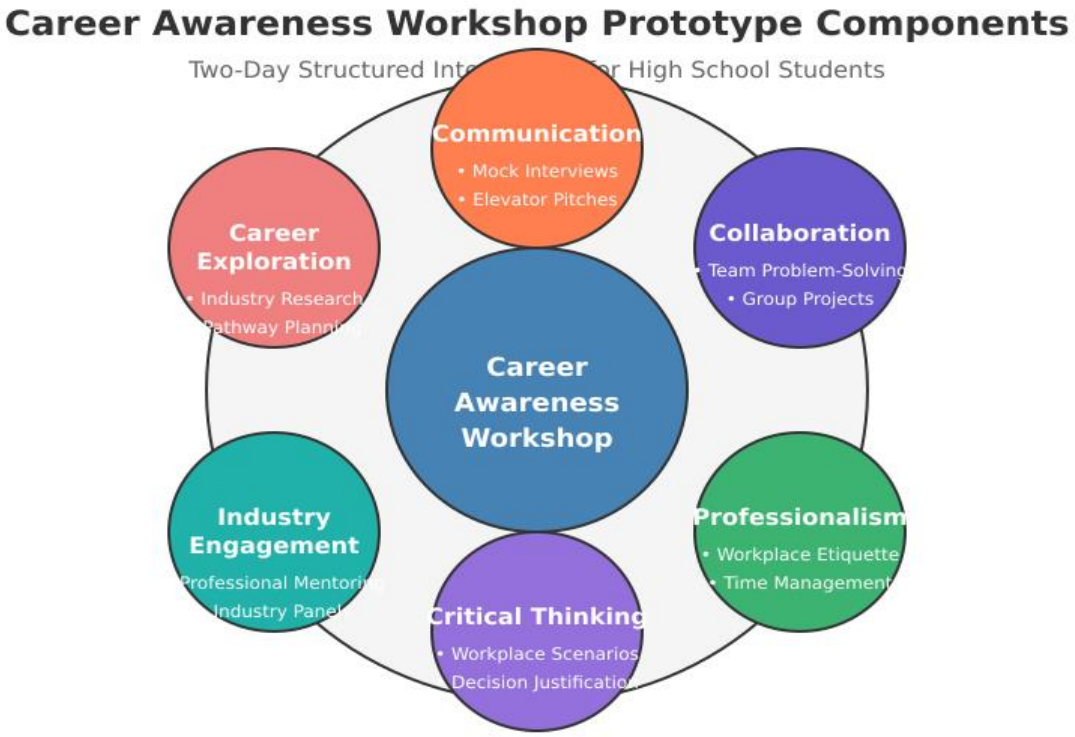


Figure 1. Conceptual framework of the career awareness workshop prototype, illustrating the six interconnected components developed through the design thinking process.

Appendix D

Sample Lesson Plans & Activities

Lesson Plan: Building Employability Skills for the Real World

Grade Level: 9–12

Lesson Duration: 2–3 class periods/sessions (45–60 minutes each)

Focus Areas: Communication, Teamwork, Problem-Solving, Professionalism, and Time Management

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Lesson Objectives

By the end of the lesson, students will be able to:

Identify and define key employability skills

Demonstrate soft skills through hands-on, interactive activities

Reflect on their strengths and areas for growth in workplace readiness

Practice communication and collaboration in real-world scenarios

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Session 1: Introduction to Employability Skills

Warm-Up Activity: “What Employers Want” Brainstorm (10 mins)

Write “What skills do you think employers are looking for?” on the board

Students brainstorm individually, then share aloud

Create a word cloud or anchor chart from responses

Mini-Lesson: Overview of Key Employability Skills (15 mins)

Introduce the following:

Communication

Teamwork

Critical thinking

Adaptability

Time management

Work ethic

Professionalism

Use real-life examples, short employer video clips, or student-friendly infographics

Activity: Employability Skills Carousel (25 mins)

Set-Up:

6 stations (one per skill), each with a challenge/activity

Rotate every 5 minutes

Examples:

Communication Station: Partner up and give verbal directions to draw a shape (back-to-back)

Teamwork Station: Build a paper tower with limited supplies

Critical Thinking Station: Solve a workplace problem scenario

Adaptability Station: Change the rules mid-task and reflect

Time Management Station: Plan a day with conflicting responsibilities

Professionalism Station: Role-play dress code and behavior scenarios

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Session 2: Application & Real-World Practice

Warm-Up: “Soft Skills Bingo” (10 mins)

Bingo board with actions like “Helped a classmate,” “Showed up on time,” “Worked on a team project”

Students walk around the room finding classmates who meet the descriptions

Activity: Job Shadow Simulation (30 mins)

Scenario-Based Team Challenge:

Students are placed in “departments” (marketing, event planning, customer service, etc.)

Each team gets a fictional workplace challenge to solve (e.g., planning a community event, solving a client issue, etc.)

Students create a short presentation or skit demonstrating how they’d resolve it using soft skills

Wrap-Up Discussion: Skills Reflection (15 mins)

Students complete a personal reflection worksheet:

Which employability skill do I feel strongest in?

Which do I need to work on?

How can I practice these skills in school/life?

Optional Extension Activity: Career Guest Speaker or Virtual Tour

Invite a local employer, HR professional, or CTE partner to talk about:

What soft skills they value most

Real interview tips

Workplace dos and don’ts

Assessment

Participation in activities

Group collaboration and role-play

Completion of personal reflection worksheet

Optional rubric for presentation or skit

Materials Needed

Station supplies (paper, tape, timer, instructions)

Bingo sheets

Whiteboard or projector

Reflection worksheets

Optional: guest speaker handouts or thank-you cards

Appendix D

Employability Skills Lesson Plan

🧠 Lesson Title: "You're Hired!" – Mastering Soft Skills for the Workplace

Grade Level: 9–12

Duration: 1 Class Period (45–60 minutes)

Focus Skills: Communication, Problem Solving, Initiative, Professionalism, Conflict Resolution

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🎯 Lesson Objectives

Students will:

Understand the importance of employability (soft) skills in the workplace

Demonstrate appropriate professional behavior through interactive role-play

Practice critical thinking and collaboration to solve real-world challenges

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🔍 Lesson Outline

1. Do Now / Warm-Up (5–10 minutes):

Prompt:

"You've got all the technical qualifications for your dream job—but what else do you need to succeed?"

Students respond in journals or on sticky notes and share with a partner. Debrief as a class: Introduce the concept of soft skills and why they matter just as much as technical skills.

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2. Mini-Lesson: What Are Employability Skills? (10 minutes)

Use a quick slide deck or poster visuals to explain:

What soft/employability skills are

Examples: communication, initiative, problem-solving, dependability, etc.

Why employers value them (use a short employer quote or video clip if available)

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3. Interactive Activity: “You’re Hired!” Role-Play Challenge (30–35 minutes)

Overview:

Students work in small groups to act out workplace scenarios. Each group receives:

A role-play card with a workplace situation

Character roles (e.g., manager, intern, upset coworker)

A challenge to solve using employability skills

Set-Up:

Create 4–6 scenario cards (see samples below)

Each group rehearses and presents a 2–3 minute skit

Class discusses: “What skills were used? What could have been better?”

Sample Scenarios:

"Customer Conflict" – A customer is unhappy with a service. How do you de-escalate and resolve the situation?

"Late Again" – One team member keeps arriving late. The team must address it without creating drama.

"Project Deadline Panic" – A group is behind on a big project. How do they organize, manage time, and communicate?

"New Employee Misunderstanding" – A new hire misunderstands directions and makes a mistake. How does the team respond?

"Office Gossip" – Rumors are spreading at work. What does professionalism and integrity look like here?

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4. Debrief & Reflection (5–10 minutes)

Ask:

What skills were most challenging to demonstrate?

How can these situations happen in real life?

How can we practice these skills in school or in part-time jobs?

Students complete a quick exit ticket:

“One skill I need to improve is ____, and I can work on it by ____.”

🧰 Materials Needed

Scenario role-play cards (printable or digital)

Name tags or props (optional, for fun)

Rubric or checklist for self/peer feedback (optional)

Reflection/exit ticket slips

📈 Assessment

Participation in skits

Demonstration of soft skills in action

Completion of reflection or exit slip

Optional: class vote on “Most Professional Team” or “Best Conflict Resolution”

💥 Bonus Option

Guest Judge Panel: Invite a school counselor, CTE teacher, or community partner to observe and give real feedback on the role-play performances.

Appendix D

Employability Skills Lesson Plan

🏅 Lesson Title: “Workplace Olympics” – Compete with Soft Skills!

Grade Level: 9–12

Duration: 1 Class Period (45–60 minutes)

Focus Skills: Teamwork, Leadership, Adaptability, Communication, Critical Thinking

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🎯 Lesson Objectives

Students will:

Understand the connection between employability skills and workplace success

Engage in cooperative tasks that model workplace interactions

Reflect on personal strengths and areas for improvement related to soft skills

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🔍 Lesson Outline

1. Intro Discussion (5–7 minutes)

Prompt:

“If school were a job, would you get hired or fired based on how you show up every day?”

Discuss how behaviors like being on time, collaborating, and solving problems are not just school expectations—they’re workplace skills.

2. Activity: “Workplace Olympics” (35–40 minutes)

Overview:

Students compete in small teams (3–4 students each) across multiple mini-challenges that simulate real workplace tasks. Each challenge is designed to target specific employability skills.

Instructions:

Each team rotates through 4–5 "event stations"

Points awarded for collaboration, communication, innovation, etc.

The winning team is crowned “Workplace Champions”

🏁 Olympic Events (Choose 4–5):

Event	Description	Skills Practiced
Blind Build	One teammate gives verbal instructions while blindfolded teammates build a simple LEGO or cup tower	Communication, Active Listening
Time Budget Boss	Teams must schedule a fictional employee’s day, balancing personal life and 5 competing work demands	Time Management, Prioritization
Problem Pitch	Given a workplace problem (e.g., printer down on deadline day), team presents a solution in 2 mins	Critical Thinking, Creativity
Customer Service Relay	Teams role-play angry customers, and teammates must calm and resolve their concerns quickly	Conflict Resolution, Patience

Event	Description	Skills Practiced
Adaptability Switch-Up	Mid-task, a new rule or tool is introduced (e.g., one person can't speak, materials change)	Adaptability, Resilience
Professional Pictionary	Teams guess workplace-related words based on quick sketches (e.g., teamwork, resume, interview)	Creativity, Vocabulary, Speed

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🧠 3. Debrief & Reflection (10–15 minutes)

Discuss:

Which event was most difficult? Why?

What real-life job or workplace situation did these activities remind you of?

What did your team do well? What could be improved?

Reflection Journal Prompt:

"Today I learned that in order to succeed in a job, I need to improve ____. I can start by ____."

Optional: Use a class scoreboard or digital leaderboard to track team points and recognize strengths.

🧰 Materials Needed

Timer

Index cards or printouts with challenges

Cups, building blocks, whiteboards, or paper

Reflection handout

Optional: medals, ribbons, or certificates

📈 Assessment

Observation during group activities

Peer/teamwork feedback sheet

Individual reflection writing

Points-based scoreboard for participation and demonstration of skills

⭐ Bonus Add-On:

Career Connection Corner

Display short bios of professionals in different industries describing how they use soft skills daily. You can also play short video interviews or testimonials.

Appendix D

Career Awareness Lesson Plan

💼 Lesson Title: “Discover Your Path” – Career Awareness Exploration

Grade Level: 9–12

Duration: 1–2 Class Periods (45–60 minutes each)

Focus Areas: Career exploration, self-awareness, career clusters, future planning

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🎯 Lesson Objectives

Students will:

Explore a variety of career fields and pathways

Reflect on their interests, strengths, and values

Identify potential careers that align with their personal attributes

Gain awareness of the education/training needed for different careers

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🔍 Lesson Outline

1. Icebreaker: “Dream Job Speed Round” (5–7 minutes)

Go around the room quickly asking each student:

“What would be your dream job today and why?”

No pressure—just fun! This helps set the tone and show the variety of aspirations in the room.

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2. Mini-Lesson: Introduction to Career Clusters (10–15 minutes)

Use visuals or a short video (like from CareerOneStop or YouScience) to introduce:

The 16 Career Clusters (Health Science, IT, Education, Hospitality, etc.)

The idea that careers are connected to student interests, skills, and lifestyles

Different levels of education or training required for different careers

Optional: Create a colorful poster or digital slide deck of all clusters

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3. Activity: Career Personality & Cluster Match (20–25 minutes)

Option A: Paper-Based

Distribute a Career Interest Survey (e.g., Holland Code RIASEC quiz)

Students complete it and review their top 2–3 career clusters

Give handouts with descriptions and example jobs in each cluster

Option B: Online Interactive

Students use tools like:

My Next Move

CareerOneStop Interest Assessment

They explore careers tied to their top interest areas and list 2–3 that appeal to them.

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4. Activity: Career Gallery Walk or Digital Research (25–30 minutes)

Option A: Career Gallery Walk

Post 16 career cluster posters around the room

Each has job samples, salaries, pros/cons, and education paths

Students walk through with a graphic organizer, jotting down 1 job from each cluster that interests them

Option B: Digital Career Scavenger Hunt

Create a scavenger hunt where students search for:

A high-paying job in health science

A job requiring an associate degree in IT

A job you can start right after high school

A job where you help people daily

And more!

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5. Wrap-Up Reflection (10 minutes)

Prompt:

"Based on today's exploration, one career I'd like to learn more about is ____. I was surprised to find out that ____."

Students can share their responses, submit written reflections, or create a "Career Snapshot" one-pager with:

Job Title

Job Description

Salary Range

Education/Training Needed

Why it interests them

🧰 Materials Needed

Interest surveys or printed cluster handouts

Posters or digital tools for career research

Reflection sheets or graphic organizers

Computers/tablets (if using online tools)

📈 Assessment

Completion of interest inventory

Participation in gallery walk/scavenger hunt

Career Snapshot or reflection sheet

Optional: Create a short presentation or vision board for their top career

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💥 Bonus Extension Options

Guest Speaker Day – Invite professionals from different fields to share their journeys

Career Dress-Up Day – Students dress up as someone in their future career

Field Trip – Local job site, community college, or career fair

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Appendix D

Career Awareness Lesson Plan

🎯 Lesson Title: “Career Quest: Unlock Your Future!”

Grade Level: 9–12

Duration: 1 Class Period (45–60 minutes)

Focus Areas: Career exploration, goal setting, self-awareness, career pathways

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Lesson Objectives

Students will:

Explore a variety of career options across industries

Identify careers aligned with their interests and skills

Understand education, salary, and duties associated with selected careers

Engage in a creative group activity to present a career to peers

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🧠 Warm-Up: Career Word Scramble (5 minutes)

Provide a quick brain-teasing scramble of career-related words:

Example scrambled words:

COTDOR → Doctor

ETHECAR → Teacher

TRESINEG → Engineer

Bonus: Have students guess what career cluster each word belongs to.

🔍 Mini-Lesson: “What Is Career Awareness?” (10–15 minutes)

Use slides or a brief video to introduce:

Why career awareness matters (decisions about college, trade, or work life)

Types of career pathways (4-year college, military, apprenticeships, technical school)

Examples of careers in different clusters

Emphasize: It's okay if you don't know what you want to do yet—exploring is part of the process!

⭐ Main Activity: Career Quest Poster Challenge (30 minutes)

Overview:

Students work in small groups to research a career and create a fun, visually engaging "Career Quest Poster" to present to the class in a 1-minute pitch.

Instructions:

Assign or let students choose a career from a list (make sure there's variety)

Each group answers the following:

Job Title & Description

Daily Tasks

Required Education/Training

Salary Range

One Cool Fact or Myth-Buster

Why This Career Is Important to the World

Students draw or print visuals, symbols, or icons to enhance their posters

Optional twist: Each group comes up with a "mascot" or "emoji" that represents their career

Examples:

Veterinary Tech → “Animal Avenger”

Electrician → “Watt Warrior”

Graphic Designer → “Pixel Pro”

Welder → “Metal Master”

🎤 Gallery Walk or Speed Presentations (10–15 minutes)

Each group does a 1-minute pitch to the class

Or post posters around the room for a Gallery Walk, where students use sticky notes to leave feedback, questions, or compliments on each

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📓 Exit Ticket Reflection (5 minutes)

Prompt:

“One career I learned about today that I had never considered is ___. I want to explore it more because ___.”

📈 Assessment

Participation in poster creation and presentation

Accurate and complete career information

Individual reflection exit ticket

🧰 Materials Needed

Markers, poster paper, scissors, glue

Access to career research websites:

https://www.mynextmove.org/

https://careertech.org/career-clusters

Sticky notes for gallery walk feedback

Exit ticket slips

🎁 Bonus Option: Career Costume or Prop Day

Let students bring a small item (badge, hard hat, camera, etc.) or dress in attire that represents their assigned career!

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Appendix E

Employability Skills and Career Awareness Role Play Activities

🎭 Career Awareness & Soft Skills Role-Play Activities

1. Role Play: "Interview Idol" – Mock Job Interview Challenge

🧠 Purpose:

Help students understand different career roles and practice professional communication, confidence, and active listening.

📝 Setup:

Assign each student a career (e.g., nurse, auto technician, digital marketer, chef)

In pairs, one is the interviewer, the other the job applicant

Use role cards with prompts including job title, industry, skills needed, and key duties

🎤 Role Play Instructions:

Interviewer asks:

"Tell me about yourself."

"Why are you a good fit for this role?"

"Tell me about a time you solved a problem."

Applicant answers in character based on the assigned career

✅ Debrief:

What skills did you use to communicate clearly?

What made the applicant stand out?

How would you improve for a real interview?

2. Role Play: “Workplace Mix-Up” – Team Problem Solving Scenarios

🧠 Purpose:

Students simulate workplace challenges and solve them using teamwork, adaptability, and conflict resolution.

📝 Setup:

Break into small teams

Each team draws a career role + a workplace problem scenario

💼 Sample Career + Scenario Combinations:

Career Role	Scenario
EMT Team	Respond to a 911 call where the caller is panicking and miscommunicates their location
Restaurant Team	A customer is angry because their food was wrong and cold
Construction Crew	A team member isn’t following safety rules and delays the project
Daycare Staff	A parent is upset about a child’s injury on the playground
IT Help Desk	A frustrated teacher’s computer crashed during a final exam upload

🎭 Role Play Instructions:

Teams plan and act out how they will respond as professionals

Use soft skills: empathy, patience, time management, communication

✅ Debrief:

What skills were used effectively?

What challenges came up and how did the team handle them?

How is this similar to real workplace conflict?

3. Role Play: “Career Call Center” – Communication Challenge

🧠 Purpose:

Students take on professional roles and practice verbal communication and problem solving over a “call.”

📝 Setup:

Pairs sit back-to-back (or one student steps out of the room and returns as the caller)

One student plays the client, the other plays a professional in a career role (e.g., receptionist, travel agent, customer service agent, school counselor, IT rep)

📞 Sample Calls:

“You’re a travel agent helping a family book a vacation with budget issues.”

“You’re an IT tech walking a frustrated person through resetting their email password.”

“You’re a receptionist scheduling a last-minute medical appointment.”

✅ Debrief:

Was it hard to give/receive clear instructions without visuals?

What communication strategies helped?

What jobs require strong phone skills?

4. Role Play: “Career Cluster Challenge” – Improv Soft Skills Game

🧠 Purpose:

Quick-thinking fun activity to reinforce career clusters and soft skills like collaboration, creativity, and flexibility.

📝 Setup:

Write career clusters on slips of paper and place in a bowl (e.g., Health Science, Arts & AV, Law & Public Safety)

Also write common soft skills or challenges on other slips (e.g., teamwork, angry client, multitasking, language barrier)

🎲 Instructions:

Teams draw one career cluster + one soft skills challenge

Create a quick 1–2 minute skit showing a career situation that demonstrates the soft skill

🧠 Example:

Team draws: “Law & Public Safety” + “Working with someone who speaks a different language”

They act out a police officer using calm body language and a translator to help a community member

✅ Debrief:

Which soft skills were highlighted?

How do different careers use the same soft skills?

What jobs matched your interests today?

🎁 Wrap-Up Activity: Soft Skills Superstars Certificate

Award students based on:

Best Communicator

Best Team Leader

Most Adaptable

Most Empathetic

Most Professional

Biographical Information

I am a dedicated Professional Therapeutic Counselor, doctoral student, and Administrative Counselor with over 25 years of experience serving, uplifting, and giving back to others. My life's work has been rooted in advocacy, service, and compassion—especially for children, families, and those in need of support. I have had the privilege of serving across a variety of settings, including educational institutions, mental health services, residential programs, foster care systems, and child and family services. These diverse experiences have strengthened my passion for improving lives and ensuring that every individual—especially our youth—feels seen, heard, and valued.

As a proud child advocate, I am committed to standing in the gap for those who may not have a voice, and I believe in the power of education and mentorship to change lives. My love for my family and my faith in God are the foundations that keep me grounded and motivated. I view my work not just as a profession, but as a calling to serve with humility, empathy, and purpose.

I am passionate about community engagement and believe deeply in giving back. I strive to create opportunities that uplift others, foster resilience, and open pathways to success. One of my guiding principles comes from my favorite quote: "I am blessed to be a blessing." Through this work, I hope to continue encouraging, empowering, and walking alongside others as they discover their own strength and potential.