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ABSTRACT

PETER B. LICATA: 21st Century Workforce Readiness Skills–

How Are Students Being Prepared

Throughout history, schools have strived to prepare students for future educational and workplace success. This is made evident through the many federal and state policies enacted. While the specific skills required for careers have changed, the goals of the educational system have not. The 21st Century international workplace requires a generation of skilled workers with specific attributes. To prepare students for gainful employment and to combat the high percentage of high school students who drop out of school unprepared for the workforce, school districts across the country have instituted Career and Technical Education and Industry Certification programs. These programs strive to prepare students for both career and college readiness.

In The School District of Palm Beach County, Florida, the 11th largest school district in the country, each high school offers varying programs to assist students in their preparation for future educational opportunities and successful careers. Through the lens of The Southern Regional Education Board and Steinberg, several of these programs are evaluated. This study replicates and extends research by Tyrone Bennett (2012) and Kane (2012). The study evaluates the effectiveness in preparing students for the 21st Century workforce by interviewing and surveying District leaders, school-based administrators, teachers and employers. Both career specific skills and general skills necessary for workplace success are evaluated. It is the goal of the researcher that the results of this study be used to guide district-wide improvement of programs to prepare students for the 21st Century workforce.

Order Number: _____

**21st CENTURY WORKFORCE READINESS SKILLS-
HOW ARE STUDENTS BEING PREPARED**

Licata, Peter B., PhD

Lynn University

2014, by Licata, Peter B.

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UMI

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I would like to thank Dr. Korynne Taylor-Dunlop for her patience and persistence throughout this process. I would also like to thank Dr. Kelly Burlison and Dr. William Leary for their assistance in completing this process.

DEDICATION

I would like to dedicate this work to my wife, Judith Kern-Licata as without her, this would never have been completed.

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CHAPTER 1: INTRODUCTION

Purpose of the Study

The purpose of this study is to examine the alignment of national, state and district policies, curriculum, Common Core State Standards, and employer expectations in preparation of students for career and college readiness. This study will focus on the effectiveness of The School District of Palm Beach County's high schools to incorporate 21st century career readiness skills into their academic and career academy programs.

The questions that will guide this study are:

1. How have district and school leaders defined workforce readiness in the selected program?
2. How have district and school leaders incorporated these workforce readiness skills in the selected program?
3. How are these workforce readiness skills being assessed?

This study is a replication and extension of work completed by Tyrone Bennett (Bennett, 2012) and Alice Kane (Kane, 2012).

Statement of the Problem

Florida's federal graduation rate is approximately 74%. According to a survey of Postsecondary Plans of Florida High School Completers 28% have no postsecondary education plans (Bennett, 2013). It is the duty of our educational system to prepare all students for the future beyond high school. Race to the Top funds have placed an additional emphasis on readiness for career and college. As stated by U.S. Secretary of Education Arne Duncan, a major goal of Race to the Top funds is to ensure that students are prepared for their next level of school or career without remediation.

In today's society, workers need more than traditional academic skills to succeed. Many professions require specialized training that may not be part of a college program. Critical thinking skills, communication, collaboration and problem solving have become the some of the relevant workforce skills that employers are seeking. These skills have been shown to be as vital as academic and ever changing technical skills (ACTE, 2013). Career academies and Career and Technical Education programs strive to instill these skills to prepare students for career and/or college success.

Background

In an increasingly competitive 21st century students will need to master more than the traditionally tested academic subjects. The Partnership for 21st Century Skills (www.p21.org) states that it is time that students embraced the 4C's – communication, collaboration, critical thinking and creativity. In conjunction with core academic subjects, life and career skills, and information, media and technology skills, these 4C's will be of the utmost importance for 21st century workers.

A report titled *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce* (2006) found that:

Young people need a range of skills, both basic academic skills as well as the ability to apply these skills and knowledge in the workplace. The survey results indicate that far too many young people are inadequately prepared to be successful in the workplace. At the high school level, well over one-half of new entrants are deficiently prepared to be successful in the most important skills – oral and written communications, professionalism/work ethic, and critical thinking/ problem solving (pg. 7).

These high demand skills are necessary for all students regardless of their future plans and will impact their ability to be competitive in the future workforce (Casner-Lotto, 2006).

The Association for Career and Technical Education asserts that programs that educates students on not only technical skills but also workforce skills that make students competitive in the current and future job markets (ACTE, 2008). This is a common theme throughout educational reform. In a report published in 1988 known as *The Forgotten Half*, data showed that over half of the United States' high school graduates did not attend college. This began a shift towards a focus to preparing all students for success in life (Perry & Wallace, 2012). Although The School-to-Work Opportunities Act of 1984 expired in 2001, its philosophical groundings of work-based competencies and business and postsecondary partnerships are still evident in current approaches (Perry & Wallace, 2012).

The Common Career Technical Core (CCTC) is a state-led initiative that has developed a set of rigorous, high-quality standards that states can voluntarily adopt. The CCTC includes standards for each of the 16 Career Cluster (NASDCTEc, 2012). Much like the Standards for Mathematical Practice in the Common Core State Standards, the CCTC includes a group of overarching standards that apply to every program. The Career Ready Practices are career-ready skills that educators should seek to develop in their students. These practices should be taught at increasingly higher levels of complexity as students advance through a program of study (NASDCTEc, 2012). Table 1-1 shows the Career Ready Practices.

Table 1-1

<p>1. Act as a responsible and contributing citizen and employee.</p>	<p>Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>
<p>2. Apply appropriate academic and technical skills.</p>	<p>Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications and they make correct insights about when it is appropriate to</p>

	apply the use of an academic skill in a workplace situation.
3. Attend to personal health and financial well-being.	Career-ready individuals understand the relationship between personal health, workplace performance and personal well-being; they act on that understanding to regularly practice healthy diet, exercise and mental health activities. Career-ready individuals also take regular action to contribute to their personal financial well-being, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.
4. Communicate clearly, effectively and with reason.	Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/ or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice and organization and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
5. Consider the environmental, social and economic impacts of decisions.	Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment. They are aware of and utilize new technologies, understandings, procedures, materials and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and profitability of the organization.
6. Demonstrate creativity and	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their

<p>innovation.</p>	<p>organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>7. Employ valid and reliable research strategies.</p>	<p>Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use a reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices. They use an informed process to test new ideas, information and practices in their workplace situation.</p>
<p>8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem. They thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>9. Model integrity, ethical leadership and effective management.</p>	<p>Career-ready individuals consistently act in ways that align to personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a</p>

	<p>team or organization, and they apply insights into human behavior to change others' actions, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morale and organizational culture.</p>
<p>10. Plan education and career path aligned to personal goals.</p>	<p>Career-ready individuals take personal ownership of their own educational and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the educational and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors and other experts to assist in the planning and execution of career and personal goals.</p>
<p>11. Use technology to enhance productivity.</p>	<p>Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks -- personal and organizational -- of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>12. Work productively in teams while using cultural/global competence.</p>	<p>Career-ready individuals positively contribute to every team whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

To meet the changing demands of the 21st century workforce the state of Florida has embraced career and technical education. Career academies, business partnerships, career clusters, and industry certifications are all in effect to provide the greatest opportunities for all students in the state. The focus the state has put on career readiness is evidenced by the state's most recent informational publications.

Florida's State Board of Education's Strategic Plan's Roadmap for Florida's Education Community states that in the best interest of our children, "Florida students must know that they can graduate from high school and be prepared to compete for jobs, join a global workforce, make their dreams a reality – and become the strong leaders that we know they can be" (FLDOE Strategic Plan). The state will evaluate its strategic plan annually using the following performance indicators:

1. Highest student achievement
2. Seamless articulation and maximum access
3. Skilled workforce and economic development
4. Quality efficient services

In 2013 the Florida Senate passed Senate Bill 1076 which modified high school graduation requirements and put in place a standard diploma with scholar and merit designations available. To earn a merit designation, students must meet all the requirements for a standard diploma and attain one or more established industry certification.

Table 1-2 illustrates the graduation requirements for students entering grade 9 in 2013-2014 (Stewart, 2013).

Subject Area	Graduation Requirements		
	24-Credit Program	ACCEL Program/Diploma Designations	
English/ Language Arts (ELA)	<ul style="list-style-type: none"> 4 credits in ELA 1, 2, 3, 4 ELA honors, AP, AICE, IB, and dual enrollment courses may satisfy this requirement (must pass the Grade 10 ELA Common Core assessment; must take ELA Grade 11 Common Core assessment when implemented) 	ACCEL Program (18 credits minimum) <ul style="list-style-type: none"> Physical education is not required 3 elective credits Online course is not required All other graduation requirements for a standard diploma must be met (per s. 1003.4282(3)(a)-(e), F.S.). 	
		Scholar Designation In addition to meeting the standard high school diploma requirements: <ul style="list-style-type: none"> Pass the ELA Grade 11 Common Core assessment once implemented 1 credit in Algebra 2 (must pass Algebra 2 EOC) 1 credit in statistics or an equally rigorous mathematics course Pass the Biology 1 EOC 1 credit in chemistry or physics 1 credit in a course equally rigorous to chemistry or physics Pass the U.S. History EOC Assessment 2 credits in the same world language Earn at least one credit in AP, IB, AICE or a dual enrollment course. 	
Mathematics	<ul style="list-style-type: none"> 4 credits, one of which must be Algebra 1 and one of which must be geometry (Algebra 1 EOC results count 30% of the final course grade; must pass to earn a standard diploma; geometry EOC results count 30% of the final course grade) If Algebra 2 is selected, Algebra 2 Common Core assessment results count 30% of the final course grade when implemented Industry certification courses that lead to college credit may substitute for up to 2 mathematics credits 	Merit Designation In addition to meeting the standard high school diploma requirements: <ul style="list-style-type: none"> Attain one or more industry certifications from the list established (per s. 1003.492, F.S.). 	
Science	<ul style="list-style-type: none"> 1 credit in Biology 1 (Biology EOC results count 30% of the final course grade) 2 credits in equally rigorous science courses 2 of the 3 required science credits must have a laboratory component Industry certification courses that lead to college credit may substitute for up to 1 science credit 		
Social Studies	<ul style="list-style-type: none"> 1 credit in world history 1 credit in U.S. history (U.S. history EOC results count 30% of the final course grade) .5 credit in U.S. government .5 credit in economics (must include financial literacy) 	Merit Designation In addition to meeting the standard high school diploma requirements: <ul style="list-style-type: none"> Attain one or more industry certifications from the list established (per s. 1003.492, F.S.). 	
World Languages	Not required for high school graduation, but required for admission into state universities		
Fine and Performing Arts, Speech and Debate, or Practical Arts	1 credit in fine or performing arts, speech and debate, or practical arts (eligible courses specified in the Florida Course Code Directory)		
Physical Education	1 credit in physical education to include the integration of health		
Industry Certification	Not required		
Electives	8 credits		
Grade Point Average (GPA)	Cumulative GPA of 2.0 on a 4.0 scale		
Online Course	1 course within the 24 credits, excluding a driver education course		
Special Notes: EOC, End-of-Course Assessment; AP, advanced placement; AICE, Advanced International Certificate of Education; IB, International Baccalaureate.			

In addition to adding the merit designation, students are able to enroll in and complete industry certification courses that can be substituted for up to two mathematics credits and one science credit. In accordance with § 1003.4282, F.S., Requirements for a Standard High School Diploma, industry certification courses that lead to college credit may substitute for up to two mathematics credits and one science credit. The intent of the legislation is that students earn an actual industry certification with an existing statewide articulation agreement to the associate in science or associate in applied science degree level (also known as Gold Standard Career Pathways Industry Certification Articulation Agreements) offered in the Florida College System (Stewart, 2013).

To further illustrate the emphasis Florida is placing on career and college readiness the following middle school requirement has been put into place. Pursuant to section 1003.4156, Florida Statutes (F.S.), students must complete a course in career and education planning to satisfy middle grades promotion requirements. At a minimum, the course must be Internet-based, easy to use and customizable to each student, and include research-based assessments to assist students in determining educational and career options and goals. The current Florida CHOICES career-planning program is available to districts free of charge and meets the above requirements. However, districts may use any resource that meets the criteria. The career and education planning course must result in a completed personalized academic and career plan for the student, must emphasize the importance of entrepreneurship skills, must emphasize technology or the application of technology in career fields and, beginning in the 2014-2015 academic year, must provide information from the Department of Economic Opportunity's economic security report as described in § 445.07, F.S. (Laws of Florida, 2012).

Definitions

To facilitate the understanding of this study the following definitions are provided:

Academic Rigor: Sustained, substantial projects that arise from the life or work of the community. These projects have the potential of sparking student interest leading to an exploration of key concepts and skills (Steinberg, 1998).

Adult Support/Guidance: A strong guidance and advisement system to assist students in planning career-focused programs of study and preparing for a range of post secondary options (Southern Regional Education Board, 2009).

Applied Learning: The ability to solve unstructured or semi-structured problems by applying learned concepts/skills (Steinberg, 1998).

Authentic Assignments: A sequence of well-developed instructional tasks that embed essential college- and career-readiness standards. These standards must be met using authentic, challenging learning experiences that motivate students to master academic and technical knowledge (Southern Regional Education Board, 2009).

Career Academy: A small learning community providing a college-prep curriculum with a career theme that employs partnerships with employers, the community, and higher education (Taylor, 2012).

Career Readiness: Career readiness involves three major skill areas: core academic skills, employability skills, and technical, job specific skills (ACTE, 2013).

Career and Technical Education: CTE programs provide academic and technical instruction in the instruction to help our nation meet the challenges of economic development, student achievement and global competitiveness (Southern Regional Education Board, 2009).

Career Clusters: These clusters represent distinct grouping of occupations and industries based on the knowledge and skills they require. Florida has adopted these clusters and added an energy cluster.

- Agriculture, Food and Natural Resources
- Architecture and Construction
- Arts, A/V Technology and Communications
- Business Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution and Logistics (CTE, Career Clusters)

Industry Certification: federal or state regulatory agency-developed assessment instrument leading to licensure (FAA, Dept. of Health, DBPR); industry-developed

assessment instrument leading to industry certification (ASE, HVAC Excellence); industry-developed end-of-program assessments (NATEF); proprietary company-developed assessment instrument leading to certification or proficiency in one or more company product (Microsoft, CISCO); and third-party-developed assessment instrument (NOCTI, ASK Institute, Brainbench) (Taylor, 2012).

Twenty-first Century Skills: the essential skills that our children need to succeed as citizens and workers in the 21st century. These skills are detailed in table 1-3(The Partnership for the 21st Century Skills, 2010).

Table 1-3 Elements of 21st Century Skills

Elements	Included in Elements
1. Core Subjects	<ul style="list-style-type: none"> • English, reading or language arts • mathematics • science • foreign languages • civics; government; economics • arts • history • geography.
2. Twenty-first Century Content	<ul style="list-style-type: none"> • Global awareness • Financial, economic, business and entrepreneurial literacy • Civic literacy • Health and wellness awareness • Environmental literacy
3. Learning and Thinking Skills	<ul style="list-style-type: none"> • Critical Thinking and Problem Solving Skills • Communication Skills • Creativity and Innovation Skills • Collaboration Skills • Information and Media Literacy Skills • Contextual Learning Skills
4. ICT Literacy	Information and communications technology (ICT) literacy is the ability to use technology to develop twenty-first

	century content knowledge and skills in support of twenty-first century teaching and learning.
5. Life Skills	<ul style="list-style-type: none"> • Leadership • Ethics • Accountability • Adaptability • Personal Productivity • Personal Responsibility • People Skills • Self Direction • Social Responsibility
6. Twenty-first Century Assessments	To be effective, sustainable and affordable, assessments must use modern technologies to increase efficiency and timeliness. Standardized tests alone can measure only a few of the important skills and knowledge students should learn. A balance of assessments, including high-quality standardized testing, along with effective classroom assessments, offer students a powerful way to master the content and skills central to success.

Research Questions

The central question of this study is:

How are Career Academies and Career and Technical Education appropriately addressing both the technical and workplace readiness skills employers report are lacking?

The following research questions will guide this study:

1. How have district and school leaders defined workforce readiness in the selected programs?
2. How have the district and school leaders incorporated these workforce readiness skills in the selected programs?
3. How are these workforce readiness skills being assessed?

Significance of the Study

The reported gaps between college/career readiness and the expectations of postsecondary education and employers must be narrowed. In a study conducted by The Conference Board (Achieve, 2012) the following skill gaps were reported by employers and college faculty:

- 72% of employers rate new entrants with only a high school diploma as “deficient” in writing, 54% rate them as “deficient” in mathematics and 38% rate them “deficient” in reading comprehension.
- 70% of employer respondents rate new entrants with only a high school diploma as “deficient” in critical thinking/ problem solving (skills that 58% of employers rate a very important to on-the-job success).
- 39% of employers are unhappy with recent high school graduates’ ability to apply what they learn to solve real-world problems.
- 38% of employers believe that the graduates are inadequately prepared for the quality of writing that is expected, and 34% are unhappy with graduates’ oral communication skills.
- About three-quarters of postsecondary writing, reading, mathematics and science professors say incoming students are “very poorly” or “poorly” prepared for college-level work in their content areas.

In an effort to improve this situation and reform education, the state of Florida has adopted the Common Core State Standards. The Common Core State Standards (CCSS) are defined as “providing a consistent, clear understanding of what students are expected to learn... reflecting the knowledge and skill that our young people need for success in college and careers” (Achieve, 2012). The content of the standards is specifically spelled out and many of the skills are reflected throughout

the standards and the CCSS-aligned instruction. All skills necessary for students to succeed in are not covered in the CCSS nor are they designed to be. Table 1-4 is a summary of skills in the CCSS (Achieve, 2012).

Table 1-4 Summary of Skills in the Common Core State Standards

Skills strongly reflected in the CCSS	Skills requiring an academic foundation articulated by the CCSS with technical elements outside the scope of the CCSS	Skills that could be reflected in CCSS-aligned instruction	Skill not covered by the CCSS
<ul style="list-style-type: none"> • Communication skills • Teamwork/ collaboration skills • Problem-solving skills • Reasoning skills • The application/ extension of core content in various situations • Use of data • Research skills • Time management 	<ul style="list-style-type: none"> • External and internal work-based communication skills • Job-seeking skills • The application/extension of core content in nonroutine ways 	<ul style="list-style-type: none"> • Motivation/self discipline skills • Study skills • Adaptability skills • Enjoyment of learning • Recognizing strengths and weaknesses 	<ul style="list-style-type: none"> • Conflict resolution skills • Technology-based project management skills • Mentoring skills • Career planning and exploration • Ethical reasoning • Quality control systems and practices

skills <ul style="list-style-type: none"> • Use of technology (ELA/literacy) 			<ul style="list-style-type: none"> • Workplace safety and health • Emergency procedures and response techniques
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The gaps in these skills is to a large degree are addressed in The Common Career Technical Core (CCTC) which states can choose to adopt.

The researcher plans to utilize the information gleaned from this study to effect necessary changes within the School District of Palm Beach County and to inform district and state level stakeholders.

Limitations

This study is limited to selected programs in Palm Beach County, Florida. The criteria for career academies vary from program to program.

Organization of Study

This study is organized into five chapters. Chapter 1, the Introduction, includes the problem, background and significance. Chapter 2, Review of the Literature, will provide the rationale for studying the problem. Chapter 3, Methodology/Design, describes the major elements of the problem, subjects, setting, and data collection

methodology and analysis. Chapter 4, Findings, presents the finding based upon the data analysis. Chapter 5, Conclusions and Recommendations, reports findings from the study and provides recommendations for further study.

CHAPTER 2

LITERATURE REVIEW

This literature review will provide an overview of historical and current relevant literature in the fields of Career and Technical Education. The sections of this chapter will examine Historical Policies of Vocational Education, The Southern Regional Education Board (SREB), 21st Century Skills and Learning, Steinberg's *Real Learning Real Work/* Project-Based Learning, Career and Technical Education and Career Academies.

Historical Policy Review

Throughout America's recent history there has been debate regarding the education of our youth. In public education, vocational education was designed to prepare students for entry-level positions that did not require a college degree. Public vocational education has its roots in agricultural, trade and industry for boys and homemaking for girls (Friedel, 2011).

The Smith-Hughes Act, also referred to as the Vocational Act of 1917, PL 65-347, was the first national approval of vocational education in public education. This act provided funding for "1) Salaries of teachers, supervisors and directors of vocational education area, with federal funds paying half of the salaries and the states the other half; 2) Teacher preparation in agricultural, home economics, and trade and industrial subjects; and 3) Support for the activities of the Federal Board for Vocational Education" (Friedel, 2011). These funds were not to be spent on academic teachers, thus beginning the

separation of the academic and vocational tracks and funding for students. Vocational programs saw quickly growing enrollment from the 1920s through the 1970s.

Funding increased for vocational programs in the 1930s through the George-Reed Act, PL 70-702. Following a failed congressional effort to repeal the Smith-Hughes Act, vocational education was transferred from the Federal Board for Vocational Education to the U.S. Office of education linking vocational education to elementary and secondary education (Friedel, 2011).

The George-Ellzey Act, PL 73-245, in 1934 and The George-Deen Act of 1936, PL 74-673, added additional funding and the inclusion of marketing occupations to the vocational areas of focus of agricultural and home economics . The last of the George Acts, The George-Barden Act of 1946, PL 79-586, continued to increase federal support for vocational education. This Act also served to separate home economics from trade and industry in expanded the ways in which federal funding could be used (Friedel, 2011).

Designed to include specific groups who may have difficulty succeeding in regular vocational programs, The Vocational Act of 1963, PL 88-210, addressed the issues academic, socioeconomic, or other handicaps. This act also expanded vocational education to include occupational programs, such as business and health occupations (Friedel, 2011). The Vocational Act's Amendments allowed funds to include post-secondary students.

The Carl D. Perkins Vocational Act of 1984, PL 98-524 replaced and amended the Vocational Act of 1963 and its amendments. “Among the primary intents of the Carl D. Perkins Vocational and Applied Technology Education Act is the need to assist states in expanding, improving, modernizing, and developing quality vocational education programs in order to meet the needs of the nation’s existing and future workforce in the areas of marketable skills, improved productivity, and economic growth (United States Statutes, 1984 (U.S. Department of Education, 2012). Many significant reports of this time highlighted the need for employer involvement in developing curriculum and identify skills necessary to compete in a highly-skilled workforce (Friedel, 2011).

Changes in the global economy and a declining low-skill job market were addressed in The Carl D. Perkins Vocational and Applied Technology Act of 1990 (PL 101-392). This Act provided states with more flexibility in the use of funds and included strengthened services to the disadvantaged, disabled and limited English proficient. This act recognized the need for academics to work hand-in-hand with vocational programs. The need for a link between academics, high school and post-secondary readiness in preparing a skilled workforce for 21st century careers is addressed throughout (Friedel, 2011).

Perkins III, PL 105-332, which was enacted on October 31, 1998, repealed the Smith Hughes Vocational Act. This, in conjunction with the passage of the Workforce Investment Act, afforded states the opportunity to streamline the many job training programs offered through the federal government. While states were given greater flexibility in spending, greater accountability by special populations was required.

Perkins III includes preparation and support for “nontraditional training and employment, defined as occupations or fields of work, including careers in computer science, technology, and other emerging high skill occupations” (U.S. Department of Education, 2012).

The No Child Left Behind educational reform threatened to remove funding to career and technical education. Using the assertion that career and technical education had not been effective, the Bush administration recommended removing Perkins funding. The funds were to be used to increase the academic rigor in high schools and grants for college students (Friedel, 2011). In July 2006, Congress rejected the administration’s proposal and supported the Carl D. Perkins Career and Technical Education Act of 2006, PL 109-27. This act continues to emphasize the importance integration of academics with career and technical training and increased accountability (Friedel, 2011).

Most recently, President Obama laid out a blueprint for the Perkins Reauthorization.

Too many of our businesses report that they are having trouble finding workers for skilled jobs in fields such as healthcare, technology, and advanced manufacturing, even in times like today when unemployment is declining but still high. Strengthening all aspects of our education system and creating high-quality job-training opportunities are necessary to further our economic prosperity as a nation and to keep the American promise alive for all of our students.

Transforming career and technical education (CTE) is essential to this process. CTE represents a critical investment in our future. It offers students opportunities for career awareness and preparation by providing them with the academic and technical knowledge and work-related skills necessary to be successful in postsecondary education, training and employment. Employers turn to CTE as an important source of talent that they need to fill skilled positions within their companies (U.S. Department of Education, 2012).

Southern Regional Education Board: Ready for Tomorrow: *High Schools That Work*

The Southern Regional Education Board, SREB, (2009) has determined that if the United States wants to:

1. Reduce the high school dropout rate,
2. Secure a well-prepared 21st century work force,
3. Help schools have more students meet rigorous standards, and
4. Put more high school students on the path to success,

Our traditional thinking regarding college and career needs to change. There must be multiple pathways through high school to foster student success for each and every student (Southern Regional Education Board, 2009).

“We need to stop labeling students at the high school starting line so we can maximize their choices at the finish line” (Southern Regional Education Board, 2009). While college-preparatory academics will always have a place in high school, schools must also

offer pathways of equal status to prepare students for both college and career. One key to this end is real-world authentic problems linked to rigorous academic content (Southern Regional Education Board, 2009).

The two-track academic system of pure college preparatory verses the low-level academics often alienates many students from traditionally undeserved groups. These alienated students often dropout of high school. The 21st century economy job market will require some college or specialized training and certifications. State and school district leaders must create structures for change in the way students are taught and supported to ensure success (Southern Regional Education Board, 2009).

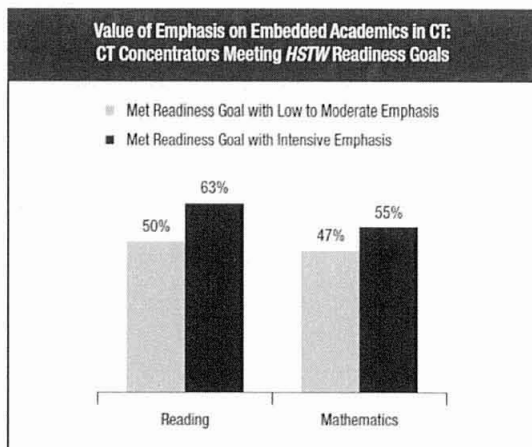
The Southern Regional Education Board's *High School That Work* has identified six key strategies to get students ready for college and 21st century careers (Southern Regional Education Board, 2009).

1. Provide students in every program of study with a rigorous academic core curriculum. All students, including those concentrating in career studies, should complete, at a minimum:

- Four college-prep English courses;
- Four mathematics courses, including Algebra I, geometry, preferably Algebra II and above;
- Three lab-science courses at the college-prep level;
- Three social studies courses; and
- Mathematics in the senior year.

The results of embedded academics can be seen in figure 2-1.

Figure 2-1



Source: 2008 HSTW Assessment

2. Insist on high-quality career/ technical course sequences that blend academic and technical content through challenging authentic assignments.

These courses must use authentic and intellectually challenging learning experiences that motivate students to master academic and technical knowledge and skills.

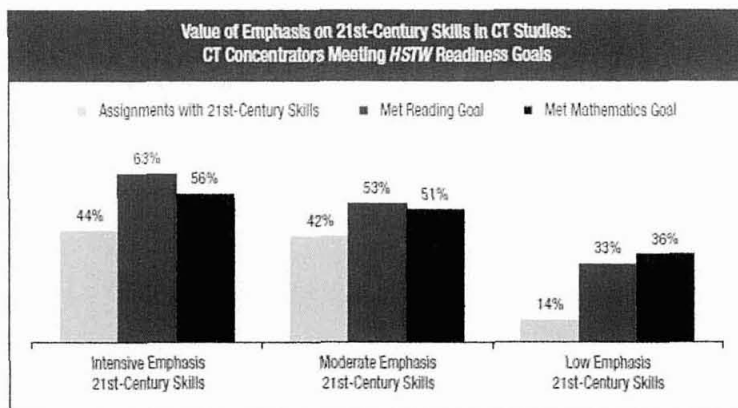
3. Equip all students with 21st century skills through high-quality career/ technical programs.

An examination of the 21st century skill defined by industry and business leaders reveals that neither pure academic knowledge nor basic technical skills alone will give many students the capacity to excel in college, careers and civic life.

Employers are eager to find employees who can solve problems, think critically, analyze data and communicate effectively.

Figure 2-2 illustrates the effect of emphasizing 21st century skills.

Figure 2-2

Source: 2008 *HSTW* Assessment

4. Expect every student to strive to meet standards in academic and career/technical classrooms.

Employers in every field want workers with a high degree of professionalism, a strong work ethic, and a commitment to doing quality work in a timely fashion.

Schools and classrooms that hold students to high expectations can develop these skills by giving students opportunities to redo substandard work.

Figure 2-3 demonstrates the effect of high expectations on reading and mathematics. Figure 2-3

**Value of Intensive Emphasis on High Expectations:
Gains in CT Concentrators Meeting *HSTW* Readiness Goals**

Career Area	Increase in Number of Students per 100 Meeting Readiness Goals	
	Reading	Mathematics
Agriculture	+17	+12
Architecture and Construction	+18	+10
Art, AV Technology and Communications	+15	+10
Business, Finance, and Marketing/Sales	+15	+8
Education, Government, and Law/Public Safety	+18	+12
Health Sciences	+14	+7
Hospitality/Tourism and Human Services	+10	+3
Information Technology	+8	No Gain
Manufacturing and Transportation	+14	+8
STEM	+14	+6

Source: 2008 *HSTW* Assessment

5. Guarantee students have the support needed to meet readiness standards for college, career training or both.

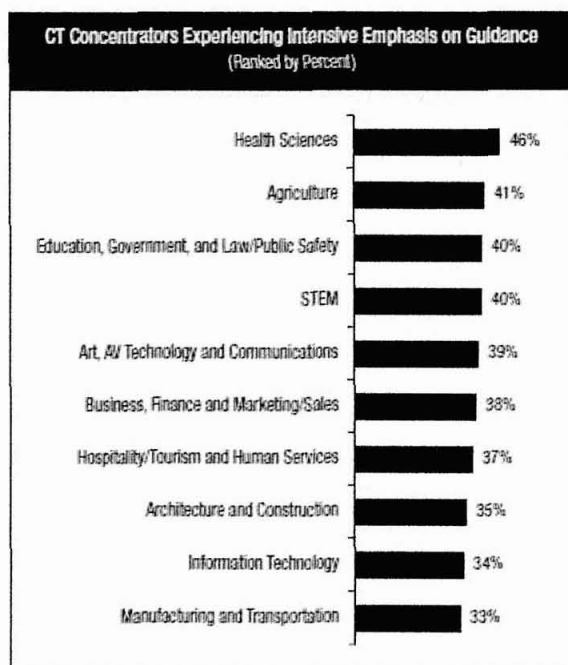
As schools urge more students to complete college-prep courses aligned with a career/ technical concentration, many students will need extra help and time to meet higher standards.

6. Connect every student to an adult advisor or mentor who has the time and skills to provide guidance and support.

A strong guidance and advisement system assists students in planning career-focused programs of study and preparing for a range of postsecondary options

Figure 2-4 shows the significant effect of guidance on students.

Figure 2-4



Source: 2008 *ISTW* Assessment

The above core principles are the basis for the *High Schools That Work* program. This program has been successfully tested and refined across 30 states in both rural and suburban high schools. Much success has been met using these practices when properly funded and implemented. While these programs have proven successful, there are many hurdles along the way. The common barriers as identified by Oakes and Saunders are (Southern Regional Education Board, 2009):

- School reform is difficult and scaling up successful reform models is challenging.
- Blending academic and CT education requires ambitious structural changes.
- Structural changes are necessary but insufficient.
- K-12 and postsecondary collaboration cannot be assumed.
- Partnerships with business and public entities may be difficult to establish.
- Investments in change are more controversial when impoverished communities and English-language learners are involved.
- Blended academic and CT education defies deep-seated cultural norms.
- Powerful resistance to change may come from many sources.

While these challenges may appear daunting, state, district, and school level leaders must be prepared to do the hard work to nurture the interests of all groups of students. Districts and schools will need tremendous support to create multiple pathways for student success (Southern Regional Education Board, 2009).

21st Century Skills and Learning

The Partnership for 21st Century Skills has created a Framework for 21st Century Learning. “This framework describes the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies” (Partnership for 21st Century Skills 2009). In addition to core academic knowledge, students must learn to think critically, problem solve, collaborate and communicate effectively to succeed in 21st century careers.

The table below adapted from the Partnership for 21st Century Learning describes the 21st Century outcomes students should master to succeed in work.

Table 2-1

Core Subjects	<ul style="list-style-type: none"> • English, reading or Language Arts • World languages • Arts • Mathematics • Economics • Science • Geography • History • Government and Civics
21 st Century Themes	<ul style="list-style-type: none"> • Global Awareness • Financial, Economic, Business and Entrepreneurial Literacy • Civic Literacy • Health Literacy • Environmental Literacy
Creativity and Innovation	<ul style="list-style-type: none"> • Think Creatively • Work Creatively with Others • Implement Innovations
Critical Thinking and Problem Solving	<ul style="list-style-type: none"> • Reason Effectively • Use Systems Thinking • Make Judgments and Decisions

	<ul style="list-style-type: none"> • Solve Problems
Communication and Collaboration	<ul style="list-style-type: none"> • Communicate Clearly • Collaborate with Others
Information Literacy	<ul style="list-style-type: none"> • Access and Evaluate Information • Use and Manage Information
Media Literacy	<ul style="list-style-type: none"> • Analyze Media • Create Media Products
Information, Communications and Technology Literacy	<ul style="list-style-type: none"> • Apply Technology Effectively
Flexibility and Adaptability	<ul style="list-style-type: none"> • Adapt to Change • Be Flexible
Initiative and Self-Direction	<ul style="list-style-type: none"> • Manage Goals and Time • Work Independently • Be Self-directed Learners
Social and Cross-Cultural Skills	<ul style="list-style-type: none"> • Interact Effectively with Others • Work Effectively in Diverse Teams
Productivity and Accountability	<ul style="list-style-type: none"> • Manage Projects • Produce Results
Leadership and Responsibility	<ul style="list-style-type: none"> • Guide and Lead Others • Be Responsible to Others

Steinberg's *Real Learning Real Work*/ Project-Based Learning

Steinberg believes the educational system must prepare students for the future with authentic experiences that are relevant to their studies and lives. John Dewey has been credited as an inspiration for much of Steinberg's work. Steinberg describes Dewey's notion of "education through occupations" did not mean "narrow training for specific occupations, but rather a broad, purposive education that would help student to develop the full range of their capacities and, ultimately, to find fulfilling lives" (Steinberg, 1998).

Dewey wrote that learning is the act of constructing meaning. Learners do not simply take in information, but create knowledge and understanding through active engagement with problems requiring solutions that alter the environment. The belief that students should be engaged in projects that encompass a wide variety of vocations and included exposure to strong, supportive adults is paramount. Classrooms should be a place where students could explore, problem solve and plan their own projects. Steinberg states that traditional schooling is primarily a passive activity for today's students. Students spend large amounts of their days listening to lectures with little or no interaction between the student and the teacher. This makes it difficult for students to see the relevance between the classroom and their future (Steinberg, 1998).

Steinberg points out that a major problem with current educational practices is that students have few opportunities to see how school connects to future career and life skills. Another issue is the way students are viewed and instructed. Schools view students as empty vessels waiting for new knowledge to be poured in. Students are learning through memorization and "skill and drill" tasks in preparation for high stakes testing. (Steinberg, 1998). Steinberg believes that Howard Gardner's support of apprenticeship as instruction can help address this problem. Gardner (2004) states knowledge and skills are acquired by children through simple observation and imitation of adults. According to Steinberg, Gardner concludes that apprenticeship can build effectively on the way students learn. In describing apprenticeship, Gardner lists the following features:

- Students work alongside adult professionals and establish personal bonds

- Develops sense of progress towards an end with interim steps of accomplishment
- Different levels of worker hierarchy giving learners directionality of advancement
- Learning is contextualized with reasons for procedures evident due to specific demand and use

Steinberg feels this contextualized learning is important because it allows students to link learning with tasks that occur in society. This differs from classrooms where tasks may appear to have no relevance. However, Steinberg points out two difficulties with apprenticeship that can make it hard to adapt to classrooms. Although the work in apprenticeships is both physical and tangible, it does not include the symbolic and conceptual levels of work. Much of work now includes problem solving and creative application of skills and apprenticeship may not address this. Secondly, it is not clear how to structure situations that mimic the urgency and authenticity of the workplace to the classroom.

Steinberg suggests that project-based learning, which provides student learning in real-world applications, can be an effective way to link classroom learning with career preparation. Project-based learning is student-driven and teacher-facilitated learning. Learners are provided the opportunity to inquire about tasks developed to pique their curiosity. Project-based learning provides students with opportunities to be self-reliant and organized. Through tasks students learn to collaborate and communicate effectively (Bell, 2010). Steinberg's six "A's" (Steinberg, 1998) provide a framework for designing effective project-based learning tasks:

- Authenticity
- Academic rigor
- Applied learning
- Active exploration
- Adult relationships
- Assessment

Authenticity should be a combination of simulation and reality to make the work feel “real enough” to the students. The task will be important to students if it resembles the work of adults. Students should see a purpose for what they are doing beyond getting a grade (Steinberg, 1998).

High schools have historically placed the highest importance on academic rigor. Steinberg believes that the primary value of project-based learning is that it leads students to acquire, build and apply knowledge across several disciplines. Students in problem-based learning situations must develop higher order thinking skills to solve problems as they arise. These skills are vital for college and career bound students. Project-based learning also does not limit students to information the teacher wishes to impart. Students need opportunities to be exposed to the same complexities of problems that they may face in college or careers. Steinberg (1998) states “it is possible that one of the reasons so many students experience difficulties (and leave) during the first year of college is due to the lack of exposure to complex problems” (p29). Project-based learning activities built around the “Six A’s” provide opportunities for students to explore different work identities while learning fundamental concepts and skills. Active exploration working in field-based projects develops communication and collaboration skills. Standardized testing only measures basic academic proficiency it does not

measure critical 21st century skills that are vital for student success (Bell, 2010). These real-work tasks also provide many opportunities for differentiated assessments (Steinberg, 1998).

Career Technical Education

In the past, vocational education did not involve college preparation. It was stated in the Smith-Hughes Act of 1917 that vocational education was provided for occupations not requiring college degrees. Current legislation requires more accountability for academic standards. In 2006 congress removed language restricting Career Technical Education (CTE) from preparing students for vocations that needed college degrees (Stern, Dayton, and Raby, 2010). CTE is now federally defined as “providing coherent and rigorous content aligned with challenging academic standards and relevant technical skills needed to prepare for further education and careers in current or emerging professions” (Stern, Dayton, and Raby, 2010). According to ACTE- CTE Today! Career and technical education:

- Encompasses 94% of all high school students and 12 Million postsecondary students.
- Includes high schools, career centers, community and technical colleges, four-year universities and more.
- Educates students for a range of career options through 16 Career Clusters and over 79 pathways.
- Integrates with academics in a rigorous and relevant curriculum.
- Features high school and postsecondary partnerships enabling clear pathways to certifications and degrees.
- Fulfills employers’ needs in high-skill, high-wage, high-demand areas.

- Prepares students to be college-and career-ready by providing core academic skills, employability skills and technical, job-specific skills (ACTE, 2013)

CTE improves student achievement in many ways. With a ratio of one CTE course for every two academic courses the risk of students dropping out is minimized. Students at schools with integrated academics and CTE perform in reading, mathematics, and science at a higher level. CTE students report developing problem-solving skills, communication skills, time management skills, and critical thinking skills during high school. Of significant note, 81% of surveyed high school dropouts say “more real-world learning” may have influenced them to stay in school (ACTE,2013).

CTE curriculums should now blend career and technical education with college preparatory academics in an effort to create multiple pathways for student success. The Florida Department of Education has recently identified CTE courses that are “equally rigorous” courses that can substitute for one of the three required science courses thereby further integrating CTE and academics. The list of CTE courses that are “equally rigorous” for mathematics is yet to be released, however SB 1076 allows for up to 2 mathematics credits to be earned through these CTE courses. The FDOE will not release a course listing that satisfies this requirement. The intent of the legislation is that students earn an actual industry certification with an existing statewide articulation agreement to the associate in science or associate in applied science degree level (also known as Gold Standard Career Pathways Industry Certification Articulation Agreements) offered in the Florida College System.

These agreements are approved by the State Board of Education and award college credit for a specified level of competency as validated by a third-party industry certification or professional licensure (Stewart, 2013).

Career Academies

Career academies were developed in the late 1960s with the focus to create small learning communities and create pathways between high school, postsecondary education and the workplace. There are now an estimated 8,000 high schools utilizing career academies across the country. The Florida Career and Professional Education Act (CAPE) was passed in 2007 to provide a statewide planning partnership between business and education communities, to expand a retain high-value industry, and sustain a vibrant state economy. The objectives of CAPE are:

- To improve middle school and high school academic performance by providing rigorous relevant curriculum opportunities;
- To provide rigorous and relevant career-themed courses that articulate to postsecondary-level coursework and lead to industry certification;
- To support local and regional economic development;
- To respond to Florida's critical workforce needs; and
- To provide state residents with access to high-wage and high-demand careers (Taylor, 2012).

A pivotal piece of this legislation is state approved industry certifications which are critical to Florida employers. The Agency for Workforce Innovation (AWI) provided the Department of Education with the following definition of Industry Certification:

A voluntary process, through which individuals are assessed by an independent, third-party certifying entity using predetermined standards for knowledge, skills and competencies, resulting in the award of a time-limited credential that is nationally recognized and applicable to an occupation that is included in the workforce system's targeted occupation list is determined to be an occupation that is critical, emerging or addresses a local need (Taylor, 2012).

The Florida Department of Education states that a career academy includes the following:

- A small learning community
- A college-prep curriculum with a career theme
- Partnerships with employers, the community, and higher education

(FLDOE)

Conceptual Rationale

This study will examine how district and school level leadership incorporate and support 21st century career and college readiness skills into their career and academic programs. This will be examined through the conceptual frameworks provided by both Southern Regional Education Board *High Schools That Work* (Southern Regional Education Board, 2009) and Steinberg (1998).

The Southern Regional Education Board's Actions States, School Districts and Schools Can Take to Prepare More Students for College and Career will be used as one guiding tool with which to study 21st century career readiness programs. These actions are outlined in table 2-2.

Table 2-2 Actions to Prepare More Students for College and Career

Action 1	Create career-focused programs of study in high-demand fields, leading to employer certification, an associate's degree or a bachelor's degree.
Action 2	Create structures and partnerships to connect academic learning to further study and the workplace and to recognize the different ways that academic learning can occur.
Action 3	Align Career Technical (CT) curricula to college- and- career readiness standards.
Action 4	Design CT courses with embedded academic standards that will fulfill academic and CT credits required for high school graduation.
Action 5	Prepare CT teachers to develop intellectually engaging assignments around real-world problems and to understand how to help students gain greater depth of knowledge from assignments.
Action 6	Provide extra help, time and ongoing support for students to meet standards and to make a successful transition to the next level.
Action 7	Eliminate disparities on the quality of school and classroom experiences to increase achievement of all groups of students and accelerate their progress toward post-high school goals.

Action 8	Allow CT concentrators to demonstrate mastery of state academic standards in subjects other than reading, writing and mathematics by passing alternative assessments, including rigorous, state-approved employer certification exams.
Action 9	Create a system of guidance and advisement to support students in completing programs of study customized to their unique talents, interests and abilities.

Steinberg's framework will also be utilized to analyze programs instructing students in 21st century workplace skills. Steinberg (1998) asserts that purposeful contexts for learning, based upon realistic tools and situations for workplace learning engages students in the learning process. This assertion is echoed in the Common Core State Standards and corresponding assessments currently being created through both Smarter Balanced and The Partnership for Assessment of Readiness for College and Careers (PARCC). Steinberg's "Six A's" and the corresponding questions (table 2-3) will be used to guide the observation of instruction and student engagement throughout this study.

Table 2-3 Steinberg's "Six A's"

Authenticity	<p>1.Does the project emanate for a problem or question that has meaning to the student?</p> <p>2.Is it a problem or question that might actually be tackled by an adult at work or in the community?</p>
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	3. Do students create or produce something that has personal and/or social value, beyond the school setting?
Academic Rigor	4. Does the project lead students to acquire and apply knowledge central to one or more discipline or content area? 5. Does it challenge students to use methods of inquiry central to one or more discipline? (e.g. to think like a scientist) 6. Do students develop higher order thinking skills and habits of mind? (e.g. searching for evidence, taking different perspectives)
Applied Learning	7. Does the learning take place in the context of a semi-structured problem, founded in life and work in the world beyond school? 8. Does the project lead students to acquire and use competencies expected in high performance work organizations? (e.g. teamwork, appropriate use of technology, problem solving, communications) 9. Does the work require students to develop organizational and self-management skills?
Active Exploration	10. Do students spend significant amounts of time doing field-based work? 11. Does the project require the students to engage in real investigation, using a variety of methods, media and sources? 12. Are students expected to communicate what they are learning through presentations and performance?
Adult Relationships	13. Do students meet and observe adults with relevant expertise and experience? 14. Do students have an opportunity to work closely with at least one adult? 15. Do adults collaborate on the design and assessment of student work?
Assessment Practices	16. Do students reflect regularly on their learning, using clear project criteria that they have helped to set? 17. Do adults from outside the classroom help students develop a sense of the real world standards for this type of work?

18. Will there be opportunities for regular assessment of student work through a range of methods, including exhibitions and portfolios?
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The successful integration of 21st century skills requires collaboration between states, districts, schools and individual teachers. Throughout this study, the combination of The Southern Regional Education Board's Actions States, School Districts and Schools Can Take to Prepare More Students for College and Career and Steinberg's "Six A's" will be utilized to analyze career and college readiness skills.

CHAPTER 3: METHODOLOGY

Purpose of the Study

The purpose of this study is to examine the alignment of national, state and district policies, curriculum, Common Core State Standards, and employer expectations in preparation of students for career and college readiness. This study will focus on the effectiveness of The School District of Palm Beach County and specific selected schools to incorporate 21st century career readiness skills into their academic and career academy programs.

Research Questions

The central question of this study is:

How are Career Academies and Career and Technical Education appropriately addressing both the technical and workplace readiness skills employers report are lacking?

The following research questions will guide this study:

1. How have district and school leaders defined workforce readiness in the selected programs?
2. How have the district and school leaders incorporated these workforce readiness skills in the selected programs?
3. How are these workforce readiness skills being assessed?

Setting

Palm Beach County is located in southeast Florida. The Palm Beach County School District is the fifth largest school district in the state of Florida and the eleventh largest in the nation. Palm Beach County is the largest county in Florida in area and the third largest in population. According to the 2010 census, the estimated population of Palm Beach County in 2010 was 1,356,545 (United States Census, 2010).

The School District of Palm Beach County has 29 high schools with a total enrollment of 53,772 as of March 2012. The demographic breakdown is as follows: 40% White, 29% African American, 26% Hispanic, and 5% other. Thirty-seven percent of the student population qualifies for free or reduced lunch. Limited English Proficient students make up 6% of the population while 14% are classified for Exceptional Student Education (not including gifted). The absentee rate in 2012 was 4%. The In-School suspension rate is 10% and the Out-Of-School suspension rate is 9% (Gold Report, 2012).

The Federal Graduation Rate for Palm Beach County public high schools in 2012 was 77%. This is the highest rate for the state's large urban districts. The breakdown for student groups are as follows: Black students 64.8%, Hispanic students 72.2% and White students 86.6% (Gold Report, 2012). Students enrolled in career academies graduate at the much higher rate of 97.5%.

Subjects

Interviews will be conducted with district –level administrators, school-based administrators, career academy coordinators, teachers, and community Workforce

Alliance personnel. The participants in the surveys will be identified by gender, position, and years in position, and area of instruction/industry.

Data Collection Methodology

This study will be conducted using qualitative research. Qualitative research is a generic term for investigative methodologies described as ethnographic, naturalistic, anthropological, field, or participant observer research. It emphasizes the importance of looking at variables in the natural setting in which they are found. Interaction between variables is important. Detailed data is gathered through open ended questions that provide direct quotations. The interviewer is an integral part of the investigation (Smith, 1983). This differs from quantitative research that attempts to gather data by objective methods to provide information about relations, comparisons, and predictions and attempts to remove the investigator from the investigation (Smith, 1983). The methods of qualitative research for data collection in this research study will include interviews, group discussions, and observations. Archival data will be used to inform and guide group discussions and interviews.

The data regarding three guiding research questions this study will be gathered by conducting interviews with teachers, administrators and work force community leaders. These interviews will be conducted both individually and in focus groups. The collected data from the focus group and individual interviews with administrators, teachers, and work force community leaders will be categorized into the following conditions: Rigorous Academic Core, Authentic Assignments/Active Exploration, Applied Learning, Standards/Assessment Practices, College/Career Readiness, Adult

Support/ Guidance. Table 3-1 illustrates data collection for research question one, defining workplace readiness skills.

Table 3-1 How are workforce readiness skills defined in the selected program?

	Administrators (District-Level or School-Level)	Teachers	Work Force Alliance
Rigorous Academic Core			
Authentic Assignments/ Active Exploration			
Applied Learning			
Standards/Assessment Practices			
College/Career Readiness			
Adult Support/Guidance			

The following table will be used to collect data regarding research question two. The same conditions will be addressed as in research question one with the emphasis on the methods of incorporating workforce readiness skills into the selected programs.

Table 3-2 How are the following workforce readiness skills incorporated in to the selected program?

	Administrators (District-Level or School-Level)	Teachers
Rigorous Academic Core		
Authentic Assignments/ Active Exploration		
Applied Learning		
Standards/Assessment Practices		
College/Career Readiness		
Adult Support/Guidance		

Data collection for research question three will be categorized into the categories of: Applied Learning, Standards and Assessment Practices, and College and Career Readiness. Table 3-3 illustrates the assessment and performance of students in career academies.

Table 3-3 How are leaders assessing student performance?

	Administrators (District-Level or School- Level)	Teachers	Work Force Alliance
Applied Learning			
Standards/Assessment Practices			
College/Career Readiness			

Data Analysis

Research Question 1: How have district and school leaders defined workforce readiness in the selected programs?

Research Question 2: How have the district and school leaders incorporated these workforce readiness skills in the selected programs?

Research Question 3: How are these workforce readiness skills being assessed?

The focus group interview questions and corresponding research questions that will be used for this research are listed in Table 3-4.

Table 3-4 Focus Group Interview Questions

Research Question	Interview Question
How have district and school leaders defined workforce readiness in the selected programs?	<ol style="list-style-type: none"> 1. What is the background/history of your Career Academy Program? 2. What connections exist between Career Academy programs and real life job skills?
How have the district and school leaders incorporated these workforce readiness skills in the selected programs?	<ol style="list-style-type: none"> 3. Please describe a typical day for a Career Academy student. 4. What workforce readiness skills are incorporated into your curriculum?
How are these workforce readiness skills being assessed?	<ol style="list-style-type: none"> 5. What connections exist between Career Academy programs and real life job skills?

Table 3-5 lists the individual research interview questions that will be asked to each of the interview participants.

Table 3-5 Individual Interview Questions

Research Question	Interview Question
How have district and school leaders defined workforce readiness in the selected programs?	<ol style="list-style-type: none"> 1. What is the history of your involvement in this program? What is your current role? 2. What are the goals of your program? 3. How is instruction planned to meet both academic core curriculum and career and technical skill requirements? 4. What connections exist between Career Academy programs and real life job skills?
How have the district and school leaders incorporated these workforce readiness skills in the selected programs?	<ol style="list-style-type: none"> 5. What college/career readiness skills do you think your students need to learn? How does your program address this need? 6. What adult advisement is provided for the students in this program? Who are the adult advisors? How often do they meet with students? 7. What is the opportunity for students in your program to experience real life work situations? 8. What are the positive outcomes of your program? 9. What workplace readiness skills are incorporated into your curriculum?
How are these workforce readiness skills being assessed?	<ol style="list-style-type: none"> 10. What connections exist between Career Academy programs and real life job skills? 11. How does your program assess students' academic progress? 12. How are technical skills assessed? 13. How are students being assessed for career/college readiness? 14. Is there anything about your program that you would like to change? What would be the benefit of the change? 15. What is your program completion rate? What percentage of you students go on to college? Career?

The responses of the interviewees will be analyzed based upon the 21st Century skills previously identified in the study. The analysis for each group of interviewees (District-level administrators, school-level administrators, teachers, Work Force Alliance Personnel) and for each research question will be viewed through the lens of the following areas of workforce readiness.

- Problem Solving / Critical Thinking
- Efficient Communication
- Teamwork and Collaboration
- Professionalism / Work Ethic.

Research questions one and two will be categorized into tables such as table 3-6. These tables will be repeated for each group of interviewees with the task of defining and incorporating workforce readiness skills.

Table 3-6 Categorizing Research Responses

	Problem Solving / Critical Thinking	Efficient Communication	Teamwork / Collaboration	Professionalism / Work Ethic
Rigorous Academic Core				
Authentic Assignments / Active Exploration				
Applied Learning				

Standards / Assessment Practices				
College / Career Readiness				
Adult Support / Guidance				

For each group of interviewees, tables such as table 3-7 below will be used to analyze the data for research question three. The categories for research question three will be conditions that address assessment and performance. These categories are: Applied Learning, Standards and Assessment Practices, and College and Career Readiness.

Table 3-7 Conditions that Address Assessment and Performance

	Problem Solving / Critical Thinking	Efficient Communication	Teamwork / Collaboration	Professionalism / Work Ethic
Applied Learning				
Standards / Assessment Practices				
College / Career Readiness				
Adult Support / Guidance				

The purpose of this study is to examine the alignment of national, state and district policies, curriculum, Common Core State Standards, and employer expectations in preparation of students for career and college readiness. Data will be collected and analyzed using Southern Regional Education Board (2009) and Steinberg (1998) as a guide and findings will be reported in Chapter 4.

CHAPTER 4: FINDINGS

Purpose of the Researcher

The purpose of this applied dissertation was to examine the alignment of national, state and district policies, curriculum, Common Core State Standards, and employer expectations in preparation of students for career and college readiness. This study examined the effectiveness of career and technical programs offered in several schools in The School District of Palm Beach County to incorporate 21st century career that prepare students for future career success. Three research questions guided this study. Descriptive data of focus groups was collected and are provided in this chapter.

The central question guiding this study was: How are Career Academies and Career and Technical Education appropriately addressing both the technical and workplace readiness skills employers report are lacking?

The following research questions guided this study. The information and data acquired will be presented in this chapter.

1. How have district and school leaders defined workforce readiness in the selected programs?
2. How have the district and school leaders incorporated these workforce readiness skills in the selected programs?
3. How are these workforce readiness skills being assessed?

The data collection methods included group and individual interviews. The same group of interviewees participated in the group and individual research.

Summary of Analyses

Table 4-1 below lists the participants who participated in the surveys their responses are analyzed in the data collection. The participants represent schools-based administrators, career academy coordinators, classroom teachers, and workforce alliance personnel.

Table 4-1 List of Participants

Identifier	Gender	Position	Years in Position	Area of Instruction / Industry
B.M.	Male	High School Principal	15	N/A
K.W.	Female	High School Principal	25	N/A
J.B.	Male	District Level Specialist	4	Business Technology
J.W.	Male	Academy Coordinator	8	Vocational
S.W.	Female	Academy Coordinator	3	Vocational
T.A.	Male	Classroom Teacher	16	Technology
A.G.	Female	Classroom Teacher	33	Early Childhood, Fashion, Culinary
G.T.	Male	Workforce Alliance	30	Vocational
H.M.	Female	Workforce Alliance	12	Employability

Focus Group Interview

The meeting of the focus group provided insightful responses to their perceptions of the three research questions. The focus group responded to the questions in Appendix A. Further detail into these questions will be provided in the individual interviews. The following table, 4-2, is a snapshot of the responses to the Focus Group Interview Questions. These perceptions were used as a basis to interpret the individual responses to the three research questions.

Table 4-2 Focus Group Responses

	Workforce Readiness Skills Defined	Workforce Readiness Skills Incorporated	Workforce Readiness Skills Assessed
Administrators	<ul style="list-style-type: none"> • Application of core academic skills into career readiness • Skills to prepare students for college or career • Academic skills and professional behavior • Industry certification 	<ul style="list-style-type: none"> • Internships • Resume writing • Problem solving skills • Communication skills (written and oral) • Include both academic teachers and CTE teachers 	<ul style="list-style-type: none"> • Should be through application of skills • Industry certification • Graduation rates
Instructors	<ul style="list-style-type: none"> • Industry certification • Integration of core academics and career skills • Appropriate professional behaviors • Critical Thinking skills 	<ul style="list-style-type: none"> • Through technology • Internships • Field experiences • Academic integration 	<ul style="list-style-type: none"> • Industry certification • Graduation rates • Should be integrated into academic areas

Workforce Alliance	<ul style="list-style-type: none"> • Application of academics to work settings • Basic occupational information within career field • Development of workplace vocabulary • Use of appropriate equipment • Personal and professional communication 	<ul style="list-style-type: none"> • Internships • Multiple experiences • Hands-on experiences in chosen field • Career counseling and guidance 	<ul style="list-style-type: none"> • On the job appraisal
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Individual Interviews

Individual interviews were held with school-based administrators, coordinators, teachers, and Workforce Alliance personnel. The interview questions, Appendix B, enabled the researcher to clarify and delve deeper into the focus group questions to better assess the current situation of workforce readiness in the selected schools in Palm Beach County.

Results for Research Question One

The findings for research question one were analyzed through the following previously identified 21st century workforce readiness skills:

- Problem Solving / Critical Thinking
- Efficient Communication
- Teamwork and Collaboration

- Professionalism/Work Ethic

These skills, SREB's core conditions, along with Steinberg's A's were used to analyze the interviewees responses. Three administrators participated in both the focus group and individual interviews. Table 4-3 provides the definitions of workforce readiness skills as seen by the school-based administrators in response to research question one. The six rows list conditions that are from Steinberg's A's and are provided as a self assessment tool to be used during curriculum planning for authentic project-based or real-world learning units. It is important in a workforce readiness curriculum or program that rigorous core instruction works hand-in-hand with the career program.

Table 4-3 Administrators' Definition if Workforce Readiness Skills

S.R.E.B.	Problem Solving/ Critical Thinking	Efficient Communication	Teamwork / Collaboration	Professionalism / Work Ethic
STEINBERG				
■Rigorous Academic ■Core	Academic subjects should be integrated with CTE. Real world situations allow students to apply critical thinking skills to core academic areas.	Communication, both spoken and written, should be integrated into CTE utilizing standards from core academic courses.	Teamwork and collaboration are both a major focus of the Common Core State Standards and therefore integrated into both academic and CTE courses	Professionalism and work ethic must be integrated into all classes to develop strong citizens and employees.

Authentic Assignments/ Active Exploration	Authentic assessments with problem solving and critical thinking embedded are often difficult to quantify to provide students with grades as necessary. For day-to-day instruction active exploration and critical thinking embedded within many CTE courses.	Communication with coworkers, employers, and instructors is stressed in several courses. This is an area that still needs growth in the current curriculums and is difficult to assess.	Students enrolled in career academies are expected to work together productively to not only explore content but to produce end products that can be used as assessment.	Professionalism and work ethic are difficult to formally assess.
Applied Learning	Problem solving is true applied learning. Students utilizing their skills in varying situations allow them to develop problem solving and critical thinking skills.	Efficient communication allows students to apply what they have learned. Workforce readiness and success depends on communication in many cases.	Teamwork is vital to workplace success. This is a skill schools and programs foster to provide readiness for their students.	While work ethic and professionalism is stressed throughout CTE courses, it is best displayed through internships and on the job exploration.
Standards/ Assessment Practices	Statewide, standardized assessments rarely incorporate real world problem solving or critical thinking skills. With the importance placed on these assessments it is difficult to integrate these two areas.	Written communication is addressed in the state standards and assessments.	Current standardized assessments do not allow for teamwork or collaboration.	Work ethic is not included in core standards or assessments. The hope is that a school work ethic is instilled through all courses not just CTE.

College/ Career Readiness	Problem solving and critical thinking skills are important for both college and career readiness. These skills are integrated into courses wherever possible. These are the skills that employers are looking for in potential employees. The ability to think outside of the box and not just follow sequences or directions.	Communication skills are the skills that are needed to successfully work with other employees, supervisors, and instructors. Communication skills are vital yet difficult to instruct.	Teamwork and collaboration skills are mandatory in most careers today. These are the skills that allow students or employees to work together to produce a product, presentation, or solution to a problem.	Professionalism and work ethics are important in both college and career readiness. These are the skills that govern workplace behavior and responsibility. Some of these skills are timeliness, honesty, and responsibility.
Adult Support/Guidance	Modeling of problem solving skills and opportunities to think through problems in real world situations. This requires adult support for students to feel safe to take risks and think critically.	Open communication between teachers, students, mentors, and potential employers is encouraged through on the job training, guest speakers, and internships.	Teamwork and collaboration between students, teachers, mentors and potential employers is a major focus of the support and guidance proved to CTE students.	Teachers and employers demonstrate and model appropriate behaviors.

It is important in a workforce readiness curriculum or program that rigorous core instruction works hand-in-hand with the career program. Across all of the administrators interviewed, Standards and Assessment Practices along with the importance of the academic core were felt to be the most important skills. In today's culture of statewide, standardized assessments, administrators feel that the job of the school is to not only to

prepare students for their future education and career, but also to meet the strict demands for statewide accountability as this directly effects funding.

The importance of adult advisement is echoed through identifier J.B's answer to a survey question.

“From a SDPBC perspective we hold this advisement piece in very high regard. In fact, to ensure that our academy students are receiving the appropriate guidance, placement, and assistance, we have allocated funding for every high school to have a Career Academy Coordinator on campus. This individual is a quasi-administrator, guidance counselor, teacher, and mentor. The ultimate responsibility of that coordinator is to the career academy students and the CTE staff and support of that school.”

The same set of interview questions were asked of both teachers/coordinators and Workforce Alliance. Four teachers/coordinators participated in the focus and individual interviews. The data from the group was analyzed utilizing the categories of: Rigorous Academic Core, Authentic Assessment/Active Exploration, Applied Learning, Standards/Assessment Practices, College/Career Readiness, and Adult Support/Guidance. Again, these categories are cross-referenced with the aforementioned 21st century workforce readiness skills of: Problem Solving, Efficient Communication, Teamwork and Collaboration, and Professionalism/Work Ethic. Table 4-4 shows the analysis from the teachers/coordinators. The marked boxes in the table indicate where teachers and coordinators felt the skills overlapped. The highlighted sections were of the most importance to this group. The marked difference between the teachers/coordinators and the previously presented administrators was that teachers felt in addition to a Rigorous Academic Core, Applied Learning was of the most importance.

Table 4-4 Analysis of Teachers/Coordinators Definition of Workforce Readiness Skills

S.R.E.B. STEINBERG	Problem Solving/ Critical Thinking	Efficient Communication	Teamwork / Collaboration	Professionalism / Work Ethic
Rigorous Academic Core	X	X	X	
Authentic Assignments/ Active Exploration	X	X	X	X
Applied Learning	X	X	X	X
Standards/ Assessment Practices	X			
College/ Career Readiness	X	X	X	X
Adult Support/Guidance			X	X

Not surprisingly, the interviewees from the Workforce Alliance found the SREB's 21st Century Workforce Readiness Skills to be of the utmost importance. They agreed with the importance of all of the areas of Steinberg's A's especially Rigorous Academic Core and Applied Learning. They appreciated the efforts schools and programs have made to provide students with real world, applied learning opportunities. They expressed that the areas of Problem Solving/Critical Thinking and Professionalism/Work Ethic need to be further addressed in career preparation programs. Table 4-5 shows the analysis of the Workforce Alliance interviewees.

Again, the marked boxes in the table indicate where the Workforce Alliance felt the skills overlapped. The highlighted sections were of the most importance to this group.

Table 4-5 Analysis of Workforce Alliance's Definition of Workforce Readiness Skills

S.R.E.B. STEINBERG	Problem Solving/ Critical Thinking	Efficient Communication	Teamwork / Collaboration	Professionalism / Work Ethic
Rigorous Academic Core	X			
Authentic Assignments/ Active Exploration	X	X	X	X
Applied Learning	X	X	X	X
Standards/ Assessment Practices				
College/ Career Readiness	X	X	X	X
Adult Support/Guidance				X

When asked how district and school leaders defined workforce readiness in the selected programs? Responses varied among the groups of interviewees. The basic definitions of workforce readiness were similar across the interview groups. The school-based personnel tended to focus more on measurable points while Workforce Alliance personnel focused on more observable skills. The prevailing thought was that, many of

the job specific skills could be trained but that the skills such as problem solving and work ethic needed early and sustained training.

Below are some sample responses from various interviewees regarding the definition of workforce readiness.

Identifier G.T. from Workforce Alliance defined workforce readiness skills as

“The use of traditional career curriculum, tools, equipment and processes, updated as funding allows Workforce readiness involves the development of career field/occupational vocabulary and technical reading/writing. It also includes, basic occupational information within career field and orientation to career ladders and educational/training/experiential requirements. Completion of program to obtain industry-recognized (work world) certification.”

This response is not surprising as the lens through which he is examining workforce readiness is the real world work environment. The emphasis on career ladders and growth are especially interesting. High school educators tend to focus on providing students the opportunity to gain employment and may not focus on the opportunities available after getting the job.

A different perspective was provided by identifier J.B., district level administrator who specializes in Career and Technical Education.

“The overarching goal in my department is to create a college and career ready student that is prepared for the challenges and tasks of a 21st century workplace. Secondary to this broad based foundational goal, we have outset increasing industry certification capacity for our students and strengthening skill sets to provide "high wage, high demand" job opportunities.”

A classroom teacher for many years, identifier T.A. gave the following response when asked to define workforce readiness skills.

“It is my belief that the single most important college/career readiness skill is that of technology. When I speak of technology, I am not talking about software specific technology such as Adobe or Microsoft, although I believe these to be extremely beneficial skills. I am talking about the application of technology in our lives. Not vendor specific technology, but the understanding of foundational applications of technology and "withitness" to be able to learn thru, work with, and move forward using technology.”

Again, a different definition of career readiness based upon the particular situation of the interviewee. All of the definitions have valid points as seen from different perspective. The challenge comes when trying to integrate all perspectives to create a program to best prepare students for a successful future.

Results for Research Question Two

The interview questions for research question two were focused on school-based administrators and teachers/coordinators. Research question two focuses on how district and school leaders have incorporated workforce readiness skills in to the selected program. Table 4-6 highlights administrators’ and teacher/coordinators’ responses to the question of how the following workforce readiness skills are being incorporated in to the selected program.

When asked to answer questions relating to how district and school leaders incorporated these workforce readiness skills in the selected programs again, responses had many similarities but varied among individuals.

Table 4-6 Responses to Research Question Two

	Administrators (District-Level or School-Level)	Teachers
Rigorous Academic Core	State course descriptions include some of these skills. Primarily, it is the teacher integrates the academic core into the CTE class. This is an area that needs to be improved upon for consistency.	Workforce readiness skills can be incorporated into academic core classes by focusing on problem solving activities and collaboration.
Authentic Assignments/ Active Exploration	Through internships and in-class activities workforce readiness skills are integrated into CTE classes.	Focusing students on the specific area of study and providing opportunities for real world experiences allows students to explore career possibilities.
Applied Learning	Internships and job shadowing provides students with opportunities to apply the skills they learn in their program courses.	The best place for students to apply their learning is in the real world. Internships allow students to utilize their specific skills. More opportunities for internships and on the job training would be beneficial.
Standards/Assessment Practices	The integration of workforce readiness skills and standards and assessments is a difficult area. Teachers of core subjects often feel overburdened with preparation for assessments and are reluctant to add more to their plates.	Teachers add workforce readiness skills into the CTE programs while preparing students to earn industry certifications or prepare for continuing education.

College/Career Readiness	College and career readiness is the focus of high school programs. The goal is to produce good citizens who are prepared to go on to future education or career. Workforce readiness skills are highly integrated into all CTE and academy programs.	Workforce readiness skills are the central focus of our CTE programs. Preparing students to be successful in their chosen careers is the goal.
Adult Support/Guidance	Adult support and guidance is provided through teachers and guidance counselors throughout a student's high school career.	Mentors and professionals provide great support and guidance for CTE students. The opportunity to interact with people from the chosen area makes the work real to students.

The state, district and school based administration has put into place many career academy programs. These programs not only train students for specific careers or continuing education but also incorporate the workforce readiness skills needed for career success. The importance of applied knowledge and real world experiences both inside and outside of the classroom are highlighted.

Identifier S.W., an academy coordinator, felt that workforce readiness skills are integrated in the following ways.

“Career readiness skills are integrated through traditional national and state curriculum frameworks, supplemented with district supports and teacher creativity and knowledge. Additionally, some local occupational experiences (great variation by school, program and teacher) and some guidance, external agency, computer based career and educational, career shadowing, etc. experiences related to the workplace, expectations and

requirements (again, great variation by school, program, teacher and external agency contacts).”

Of particular note is the variance between not only schools but between specific programs and teachers in way skills are integrated. For example, identifier B.M., a high school principal discussed real world integration and field experience within the medical academy. The importance of these experiences was echoed by many interviewees.

“Besides the internship opportunities, many of our students are required actual field experience in conjunction with their academy class and lab time. Throughout our Medical Academies it is not uncommon to have a student to have to complete up to 40 hours a semester at a hospital or clinical site gaining the real world life experience.”

Results for Research Question Three

The focus of research question three is the assessment of workforce readiness skills. These assessments were viewed through only three of the previous six conditions. Performance assessment was analyzed through Applied Learning, Standards/Assessment Practices, and College/Career Readiness.

These workforce readiness skills were assessed by all three groups of interviewees, district- and school-based administrators, teachers and academy coordinators, and Workforce Alliance personnel. The difficulty of appropriately assessing workforce readiness skills in alignment with statewide, standardized assessments was prevalent in responses across the both the administrator and teacher/coordinator interviews. Table 4-7 highlights responses to the interview questions regarding research question three.

Table 4-7 The Assessment of Workforce Readiness Skills

	Administrators	Teachers	Work Force Alliance
Applied Learning	Applied learning is assessed by through classroom activities, real world applications, such as the on campus body shop or early childhood day care center. Depending on a student's program the applied learning opportunities vary.	In the classroom applied learning is often assessed through the use of real world activities. Students may be asked to take blood, cook a meal or create a flyer using a specific computer program.	Applied learning can best be assessed on the job. This is the only real way to assess the learning of these important career readiness skills.
Standards/ Assessment Practices	Industry certification is the primary way workforce readiness skills are assessed.	As teachers we can assess the specific skills in the classroom but the best assessment is in the real world, on the job. Industry certifications are widely accepted assessments.	This is unclear as we are not involved in the CTE classroom. The only real workforce readiness skills assessment is an on the job appraisal by workplace supervisors.
College/Career Readiness	College readiness is assessed through various tests such as the SAT or ACT. Career readiness is assessed through industry certifications and in the job.	College and career readiness is primarily assessed through standardized testing. These tests tend to be academically focused or specific career focused.	Readiness for a career is best assessed on the job, by a supervisor. Licensing and certification programs are good starting points for new employees.

Workforce readiness skills are assessed in several ways, depending on the perspective of the interviewee. Not only are the specific skills being assessed but also graduation rates of the student participants in the programs are a vital part of the data. It has been found that participation in an academy program significantly increases the likelihood of high school graduation.

When asked how workforce readiness skills are assessed, identifier H.M. from Workforce Alliance replied in the following manner.

“This is unclear to me in schools/programs because I have not been involved in the occupational/career/technical classroom or curricular review for years; I think the only real workforce readiness skills assessment/authentic assessment is the “on the job” appraisal by workplace supervisors or employers. A clue to what is valued in these assessments should be available as items on the individual business/industry/entity appraisal forms; which could be aggregated by program and used in curriculum development and instruction. I would think that CareerSource Palm Beach could also assist with their related resources, experience, networks and personnel. Corporate culture is important and they have done some recent work with assessment that could be useful in assessing workplace readiness.”

This information is important for school and district based personnel to take note of as the ultimate goal is for students to obtain gainful employment. Workforce Alliance and other similar organizations are experts in this and their experiences can guide decision-making for improving programs.

Summary of Results

Findings from the focus group and the individual interviews uncovered the importance of integrating workforce readiness skills into current and future career and technical programs. Many workforce readiness skills can also be integrated into traditional core academic subjects, as outlined in the Common Career Technical Core

(CCTC). These overarching standards apply to every Career and Technical area and are considered career-ready skills that educators should seek to develop in all of their students (NASDCTEc, 2012).

The intent of the analysis was to determine what themes, patterns, and discrepancies become apparent through the study. The analysis of the information provided by the group and individual interviews showed that while the state provided course descriptions to guide instruction in career and technical education courses, it is often left up to individual instructors to integrate appropriate workforce readiness skills in to everyday instruction.

A strong correlation between the groups of interviewees was the importance placed on Applied Learning, Problem Solving Skills and Critical Thinking, and Work Ethic and Professionalism. The difficulty in teaching and authentically assessing work ethic and professionalism was echoed across the groups. It was also agreed that hands-on real world experiences are invaluable to the success of CTE students.

A great emphasis has been placed on adult support and guidance in Palm Beach County School District's career and technical programs. Each and every high school with programs has been provided with a full-time academy coordinator who serves as a support and mentor to both teachers and students. Additionally, this coordinator is a direct liaison to district level administration within the Choice and Career Options Department. The direct contact between individual schools and district level personnel provides schools with timely information and consistent support in the ever-changing educational environment in Florida.

While improvements can always be made, Palm Beach County Schools have seen great success with their career and technical education programs. Programs are expanding annually and are in great demand. Waiting lists are all too common in CTE programs.

Industry certification assessments have expanded greatly. These state and industry approved assessments allow successful graduates to be certified in chosen fields before leaving high school preparing them for immediate employment. An additional benefit of industry certifications is the revenue that is generated. This revenue can be reinvested into additional career and technical programs to include more students annually and continued updating of industry standard technology and curriculum.

CHAPTER 5: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine the alignment of national, state and district policies, curriculum, Common Core State Standards, and employer expectations in preparation of students for career and college readiness. This study focused on the effectiveness of The School District of Palm Beach County and specific selected schools to incorporate 21st century career readiness skills into their academic and career academy programs.

The central question of this study was:

How are Career Academies and Career and Technical Education appropriately addressing both the technical and workplace readiness skills employers report are lacking?

Through focus group and individual interviews, the following research questions guided this study:

1. How have district and school leaders defined workforce readiness in the selected programs?
2. How have the district and school leaders incorporated these workforce readiness skills in the selected programs?
3. How are these workforce readiness skills being assessed?

Summary and Discussion of Results

The school leaders and educators interviewed believe that, while improvements can always be made, the current approach to workforce readiness skills is effective and that career and technical academies contribute to significant increases in graduation rates. District and school leaders also depend on career academies, technical programs and industry certifications to raise school grades. In recent years, these factors have significantly impacted school grades. While not the focus of the study, this is an important factor in that it effects funding, without which these programs don't exist.

Many appropriate workforce readiness skills are addressed in career and technical programs, however the interviewees from Workforce Alliance believe that continuing improvements need to be made in the difficult to assess areas of problem solving skills, critical thinking and professionalism/work ethic. These are the weakest areas that agencies such as Workforce Alliance are faced with while finding and supporting employment. It has been recommended that more real world out of school experiences would be beneficial for both students and potential employers.

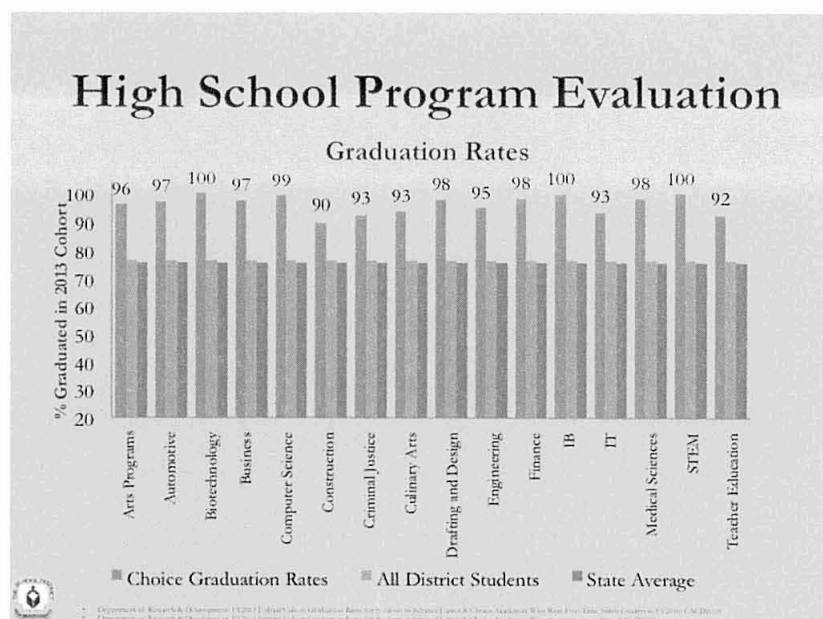
In Palm Beach County specifically, there is still some significant push back regarding technical education and career academies in that there is a long-standing belief that particular groups of students are being pigeonholed and not encouraged to attend college. The current focus of career academies is “college and career education” President Obama’s Key Education Reform Goals included that all students be college and career ready by 2010 (Strauss, 2010). The perception of career and

technical academies as vocational or leading to menial jobs is difficult to shed.

Indicated in responses from all participants, teaching to industry standards promotes proficiency in the actual workforce. One such program is computer network administration, where the technology and skills must be updated annually. Students enrolled in auto mechanics must also learn to decipher computer readouts, keeping them current with the required skills for the career.

Workforce readiness skills are incorporated into career and technical programs through continued expansion of student internships with business partnerships. With a continued focus on professional development teachers are kept current on industry requirements and expectations. From both a state level and a district level, career and technical programs are evaluated annually to adjust course descriptions, assessments and funding as dictated by the industry. The annual evaluations of graduation rates continue to show the positive effects of career academy programs. Figure 5-1 shows the graduation rates of students enrolled in various career academy programs offered in Palm Beach County in comparison to nonacademy students and state averages. The data is overwhelming positive and indicated the need to continue to grow these programs to include more students.

Figure 5-1 Graduation Rates



In a study conducted by Loera, Nakamoto, Oh, and Rueda the following benefits on career and technical education were found.

The most commonly cited studies on career academies are those of Kemple and colleagues. Their studies have shown that career academies positively impact students' academic engagement, educational attainment, employment preparation and transition into careers. Likewise, Kuo (2010) found that when career academies provided integrated opportunities where students have career and college experiences, there are positive impacts on their school and career achievements. In addition, students who participate in career academies where school curricula is integrated with career education are more likely to develop stronger connections with peers and faculty, find relevance in their studies, and

graduate from college and earn more money than their nonacademy counterparts (Loera, Nakamoto, Oh & Rueda, 2013).

Workforce readiness skills are formally and informally assessed throughout programs. Industry certification assessment passing rates continue to rise. The passing rate for industry certification assessments has risen from 84% to 88% in just the past two years. Internships and business partnerships continue to grow. These opportunities for students provide the best medium for assessing the workforce readiness skills of CTE students.

Implications for Practice

Industry is consistently changing, especially in the technology driven areas. It is vital that programs, equipment, and information remain current through professional development and business partnerships. The impact of the rising costs of a traditional college education and changing job market has many young people today choosing a career path as opposed to a four-year college. Wages for jobs requiring industry certification is rising, again prompting many students to a career first, college later path for success.

While this study was limited to the School District of Palm Beach County, Palm Beach County has become a leader in the state for career academies and technical education with 258 programs. Due to the success of these programs, districts across the state and nation, are modeling their programs after Palm Beach County's model. Continued growth is planned annually to allow for more students.

Recommendations for Future Research

1. The research within this study included only Palm Beach County Public schools. No charter schools, private schools, or religious schools were included. There is potential to expand the research to include these entities.
2. Although triangulation was utilized to reach results, a comparison study with other districts to broaden the scope of analysis could provide valuable information that may be generalized across other districts or states.
3. A follow up study in two years or other reasonable amount of time to document continued growth as industries are changing and growing rapidly.

Summary

This study focused on the effectiveness of The School District of Palm Beach County and specific selected schools to incorporate 21st century career readiness skills into their academic and career academy programs. When varying groups of educators and employers were asked how Career Academies and Career and Technical Education are defining, incorporating and assessing technical and workplace readiness skills employers report are lacking common themes were echoed. The importance of integrating problem solving skills, critical thinking skills, professionalism and work ethics were stressed. The difficulty of authentically assessing these areas is a continuing challenge that requires improvement.

Through internships, lab experiences, and field experiences students are provided opportunities to not only prepare for college or career, but to practice and apply the skills

the programs and academies are striving to instruct. These real world opportunities for professional experiences allow students to observe and model the required workforce readiness skills of professionalism and work ethic.

Continued growth of programs to include more students and industries is the goal. Monitoring of industry changes and updates will continue to be required to remain current and best serve the students of Palm Beach County.

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Appendix A

Focus Group Interview Questions

After reading the Informed Consent document, please respond to each of the following 5 interview questions.

Research Question	Interview Question
How have district and school leaders defined workforce readiness in the selected programs?	<ol style="list-style-type: none"> 1. What is the background/history of your Career Academy Program? 2. What connections exist between Career Academy programs and real life job skills?
How have the district and school leaders incorporated these workforce readiness skills in the selected programs?	<ol style="list-style-type: none"> 3. Please describe a typical day for a Career Academy student. 4. What workforce readiness skills are incorporated into your curriculum?
How are these workforce readiness skills being assessed?	<ol style="list-style-type: none"> 5. How are workforce readiness skills being assessed in your program?

Appendix B

Individual Research Questions

After reading the Informed Consent document, please respond to each of the following 15 interview questions.

Research Question	Interview Question
<p>How have district and school leaders defined workforce readiness in the selected programs?</p>	<ol style="list-style-type: none"> 1. What is the history of your involvement in this program? What is your current role? 2. What are the goals of your program? 3. How is instruction planned to meet both academic core curriculum and career and technical skill requirements? 4. What connections exist between Career Academy programs and real life job skills?
<p>How have the district and school leaders incorporated these workforce readiness skills in the selected programs?</p>	<ol style="list-style-type: none"> 5. What college/career readiness skills do you think your students need to learn? How does your program address this need? 6. What adult advisement is provided for the students in this program? Who are the adult advisors? How often do they meet with students? 7. What is the opportunity for students in your program to experience real life work situations? 8. What are the positive outcomes of your program? 9. What workplace readiness skills are incorporated into your curriculum?
<p>How are these workforce readiness skills being assessed?</p>	<ol style="list-style-type: none"> 10. What connections exist between Career Academy programs and real life job skills? 11. How does your program assess students' academic progress? 12. How are technical skills assessed? 13. How are students being assessed for career/college readiness?

	<p>14. Is there anything about your program that you would like to change? What would be the benefit of the change?</p> <p>15. What is your program completion rate? What percentage of you students go on to college? Career?</p>
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