

Abstract

Title of dissertation: **PERCEIVED CHALLENGES OF HIGH-STAKES ASSESSMENTS TO HIGH SCHOOL CAREER AND TECHNOLOGY EDUCATION PROGRAMS IN MARYLAND**

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Many states are now requiring students to pass high-stakes assessments to earn a high school diploma. Even though the primary expectation of high-stakes testing is increased academic achievement for students in specific subject areas, many worthwhile high school programs are ignored by this testing initiative. This case study examined the perceived challenges of high-stakes testing to vocational/career and technology education in Maryland and the responses to the challenges of the assessment program by schools representing the three models of delivery of career and technology (CTE) education in Maryland (technical high schools, community high schools with embedded CTE programs and technical centers).

The research was conducted through interviews at the Maryland State Department of Education and with local CTE directors, high school principals, and academic and CTE department chairs in four local school districts in Maryland, and discovered challenges to CTE programs in the following areas: scheduling students in CTE classes, redirecting resources away from CTE to tested areas, altering the mission of CTE programs, and also an overall low level of concern due to the newness of the testing program. Strategies to cope with the challenges were identified as: aligning CTE

curriculum with tested areas, mirroring tests in CTE courses to the high school assessment tests, modifying school schedules, and taking minimal or no significant actions. The research also revealed a high level of familiarity with the testing program and more significant actions implemented to address the challenges of the assessments at the community high school with the CTE component and at the comprehensive technical high school than at the tech centers.

Recommendations include similar research looking at challenges to other untested curriculum areas, tracking trends in CTE course enrollment and follow-up studies conducted after several years of high-stakes assessments to determine actual impact on career and technology education programs.

PERCEIVED CHALLENGES OF HIGH-STAKES ASSESSMENTS TO
HIGH SCHOOL CAREER AND TECHNOLOGY EDUCATION
PROGRAMS IN MARYLAND

By

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Education
2004

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CHAPTER ONE: INTRODUCTION TO THE STUDY

Overview

The current curriculum, structure and mission of the modern high school have developed over many years through numerous transformations spurred by both internal and external forces. As public schools evolved, two historical events stand out because they forced significant changes to the foundation of our educational institutions: the 1957 Soviet launching of the first Sputnik satellite and the 1983 release of *A Nation at Risk*. A single statement in this celebrated report caused as much consternation and turmoil in the world of public education, as did the launch of the Russian satellite: “The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and as a people” (National Commission on Excellence in Education, 1983, p.1). After the release of *A Nation at Risk* the phrase, “rising tide of mediocrity” was repeatedly used to describe the nation’s public schools. It is a phrase that continues to both haunt public educators and frame education policy debates.

Schools across the nation continually face increasing pressures to improve educational programs, often through the implementation of new curricular standards and performance assessments. In Maryland, the political pressure for school improvement first began with the implementation of assessment standards in elementary and middle schools in the 1990’s. It has progressed to include a call for high-stakes testing in high schools as a graduation requirement for students as well as an accountability mechanism for local schools. Such high-stakes tests present the potential for dramatically changing

not only the high school curriculum but the historic mission of our schools, their daily operation, as well as the traditional route to earning a high school diploma. Still we know very little about how local high school personnel perceive the challenges of implementing these high-stakes accountability measures, especially in high schools with programs designed to serve special student populations.

While the vast majority of students complete some form of a general college-prep curriculum to earn high school diplomas, a more specific career oriented program of studies is also available to students in Maryland. These vocational or career/technical programs meet the educational needs of many students, who graduate as highly skilled technicians prepared to enter the workforce or pursue further education. Career and technical education (CTE), formally known as vocational education, has undergone numerous changes since its formal beginnings in the early 1900's. Federal mandates and funding sources, political pressures, economic needs of the nation, and other external forces contributed to the evolution of technical education programs into their current state. The emerging testing of students fueled by the nation-wide thirst for accountability in education, specifically academic programs, stands ready to impact educational programs, including career and technical education in Maryland. The pressure to "test" students is a force, possibly with the potential to not only change CTE courses and curriculum, but to significantly alter the structure of CTE programs. This concern establishes the motivation for this research project.

Even though a primary expectation of high-stakes testing is increased academic achievement for students in specific subject areas, many worthwhile high school programs are ignored by this testing initiative, including career-oriented

vocational/technical programs. The concern driving this research is that these programs are not only overlooked by the testing initiative but may actually experience negative consequences. As the testing program progresses and students are not achieving state-established standards, schools will begin looking for time in their daily schedules to assist these students. When searching for opportunities to implement remediation and intervention programs, administrators may view CTE courses, which traditionally consume large blocks of students' time, as easy targets. It is accepted knowledge, however that all students do not learn best when taught using the same instructional strategies in similar classroom settings (Gardner, 1993; Marzano, Pickering, Pollock, 2001). The experiential learning environment of career/technical courses may be the best setting for some students to develop the academic skills needed for success on the state assessments. This research aims at understanding the possible impact of high-stakes testing on career and technical programs and at discovering what is occurring at Maryland technical high schools and centers to support student success on the assessments.

In this chapter, I will discuss the rise of high-stakes accountability as a reform strategy, highlighting both federal and state policies that have sought to ratchet up the pressure on local educators and students to attain more rigorous academic standards. I focus on Maryland's reform efforts, particularly the initiative to implement high-stakes testing in Maryland high schools which began in 1996. Because Maryland is in the forefront of the high-stakes accountability movement that has spread across the nation in response to the supposed "rising tide of mediocrity," it was also entering relatively uncharted ground for both state policies and school practices. Little is known about how

these policies will affect students and local educators, particularly those involved in specialized career and technical education programs. To that end I completed a qualitative study to examine the perceived challenges of the high-stakes testing initiative to career/technical education in Maryland.

Historical Background

Minimum Standards

The release of the National Commission on Excellence in Education's *A Nation at Risk* brought tremendous scrutiny of public schools in the United States and essentially delivered a crippling blow to the public's faith and trust in the Nation's public school systems. The National Commission identified several indicators of excellence: student mastery of subject matter, rigorous high school and college graduation requirements, meaningful college admissions requirements, challenging high school subject matter, and the use of rigorous examinations as a requirement for high school graduation. Summarized in thirteen identified areas of "risk", the commission reported serious deficiencies, which translated into a desire for increased accountability for student achievement by state boards and local school systems (National Commission on Excellence in Education, 1983).

A Nation at Risk set the stage for numerous studies of American schools. Dufour and Eaker (1992) report that "within two years of the report, more than 300 national and state task forces had investigated the condition of public schooling in America" (p.1). In response to the conclusions of these studies and reports on the problems in education, the

United States launched a series of progressively more ambitious reforms aimed at dramatically improving schools and increasing student performance. The school improvement programs of the eighties spearheaded by politicians and business leaders often left educators out of the decision-making process and focused on top-down mandates to improve schools. As part of the reform initiatives of the eighties, many states raised the certification standards for teachers, increased graduation requirements for students, imposed standardized curriculum on local school districts, and implemented minimum competency testing programs (Defour & Eaker, 1992).

Raising the Bar

Although billions of dollars were spent “reforming” the nation’s schools, little significant change actually took place. *Learning a Living: A Blueprint for High Performance*, the Report of the Secretary’s Commission on Necessary Skills (U.S. Dept. Of Labor, 1992), declared the reform initiatives of the eighties unsuccessful. As the Commission explained, the reform efforts during the eighties focused on “tighter curricula, higher certification standards for teachers, and more testing of everyone” (p. xvi). Students were performing no better at the end of the decade than they were prior to the initiatives. Edward Fiske, former New York Times education editor agrees the reforms of the eighties did not achieve the anticipated result, stating in his 1992 book *Smart Schools, Smart Kids*, “After a decade of trying to make the system work better by such means as more testing, higher salaries, and tighter curricula, we must now face up to the fact that anything short of fundamental structural change is futile” (p.14).

By the end of the decade President George H. Bush had also declared the reforms of the eighties a failure, and in 1989 invited all state governors to gather in Charlottesville, Virginia, to discuss the issue. This historic meeting resulted in the governors agreeing that “unless the nation established clear education goals and all citizens worked cooperatively to achieve them, the United States would be woefully unprepared to face the technological, scientific, and economic challenges of the 21st Century” (National Education Goals Report, 1994, p.13). The national summit led to the development of six national goals for education, calling for students to achieve competence in challenging subject matter by the year 2000.

Shortly after the Nation’s governors established Goals 2000, the Secretary’s Commission on Achieving Necessary Skills (SCANS) was appointed by Elizabeth Dole, Secretary of Labor, “to determine the skills that our young people need to succeed in the world of work” (U.S. Dept. of Labor, 1992, p. ix). The Commission was made up of representatives from the Department of Labor, research groups, National Alliance of Business, universities, public institutions such as health care providers, labor unions, insurance companies, banks, public utilities, and numerous other institutions and employers. The final report of the Commission hoped “...to contribute to improving the nation’s productivity and well-being of its citizens in the next century. It moves beyond our previous description of what must be done to build high-performance workplaces and schools to a description of how we can prepare our young people, as well as those workers already on the job, for productive work in the 21st Century” (p. vi). The Commission urged teachers to “look beyond the schoolhouse to the roles students will play when they leave to become workers, parents, and citizens” (p.17). The report also

supported the goals established by the governors in Charlottesville and suggested that in order to begin achieving these goals and the recommendations of SCANS, elementary and secondary schools needed to be “reinvented” (p. xvi).

The standards movement gained momentum in 1994 when Congress revised the Elementary and Secondary Education Act (ESEA), which required states to adopt high academic standards and implement standardized tests to measure student achievement. The 1994 ESEA was the first time “federal law mandated state testing in reading and math and warned that states would have to take action against failing schools” (Newsome, 2003, p.6). The 1994 ESEA, named the Improving American Schools Act, demonstrated the Federal Government’s increasing role in policy making for the nation’s schools and identified a highly ambitious and perhaps unrealistic reform agenda for public education in the United States. In 1994 Congress adopted the six goals established at the 1989 Governor’s summit, expanding the number to eight. The eight goals stated that by the year 2000:

1. All children in America will start school ready to learn.
2. The high school graduation rate will increase to at least 90 percent.
3. All children will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, productive learning, and productive employment in our nation’s modern economy.

4. The Nation's teaching force will have access to programs for continued improvement of their professional skills, and the opportunity to acquire the knowledge and skills needed to instruct and prepare all Americans for the next century.
5. United States students will be first in the world in mathematics and science achievement.
6. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.
7. Every school in the United States will be free of drugs, violence, and the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning.
8. Every school will promote partnerships that will increase parental involvement and participation in promoting involvement and participation in promoting the social, emotional, and academic growth of children. (National Education Goals, 1994, pp.13,14)

In contrast to the reform efforts of the eighties that focused on specific actions for schools legislated by state officials, the National Education Goals and the SCANS report focused on outcomes for students and high-stakes accountability standards. Developing plans to achieve these goals and competencies was the responsibility of local schools and school districts. To meet the challenges of Goals 2000, SCANS, the 1994 ESEA, and to prepare students for the challenges of the 21st Century, local school systems investigated

strategies for doing things differently. With this action, the Nation's schools began moving in the direction of accountability based reform.

While gearing up to prepare for accountability based reform was a challenge for traditional high schools in the nation, it was a more complicated task for schools with special missions, such as career and technical education. Achieving the specific mission and goals of CTE programs routinely requires students to spend extended periods of time in technical courses. In order to attain success in many CTE programs, students must master specialized course content and also demonstrate difficult technical skills. Even though the demands of the CTE classes require specific high level academic skills, these may not be the same concepts tested in accountability based reform initiatives. In many cases, the skills that students develop in these technical courses are critical in establishing future career paths, but conflict may arise between the need to prepare students for accountability tests and the need to prepare students to achieve CTE competencies within a finite amount of time.

Skills related to technical education are only referenced twice in the eight goals endorsed by congress in 1994; "productive employment in our modern economy" in goal three, and also in goal six which states "skills necessary to compete in a global economy..." These two sections refer to important concepts which are components of CTE courses, but difficult to assess on tests of accountability. The skills referenced in the SCANS report, often referred to as "soft skills" or "employability skills" by employers, are essential components of career and technical education programs but never tested through standardized measures of student accountability; as the "paper and pencil" format of high-stakes testing instruments precludes the testing of many aspects of career

and technical education. The dichotomy of investing time in arming students with the skills to pass the high-stakes accountability tests versus preparing students with future career skills may pose a significant challenge in the world of career and technical education.

Additional Federal Pressure

In November of 2000 George W. Bush, son of former President George H. Bush, was elected President of the United States. The elder George Bush was President from 1988-1992 during a time of much criticism of public education and the beginning of increased emphasis on standards and accountability. When his son George W. Bush became President, arguably none of the goals established by the Governors' summit or set into law through Goals 2000 had been achieved. George W. Bush announced education as the number one domestic priority and three days after taking office on January 23, 2001, sent his No Child Left Behind (NCLB) plan for school reform to Congress. He described the plan as "the cornerstone of my administration" (U.S. Gov., 2002a). The No Child Left Behind Act of 2001, which also reauthorized the Elementary and Secondary Education Act (ESEA), described the four principles of President George W. Bush's education reform plan outlined:

- Increased accountability for states, school districts, and schools.
- Greater choice for parents and students, particularly those attending low-performing schools.
- More flexibility for States and local educational agencies (LEAs) in the use of federal education dollars.

- Stronger emphasis on reading, especially for our youngest children.
(U.S. Gov. 2002a)

The NCLB Act signed into law on January 8, 2002, brought a reaffirmation of accountability and testing, and an increased emphasis on equity issues that had frustrated policy makers for more than three decades. The standards set forth in NCLB were “the most sweeping reform for the Elementary and Secondary Education Act since it was enacted in 1965” (U.S. Gov., 2002b, p.3). The reauthorized ESEA placed numerous demands on the nation’s schools, with particular emphasis on reducing the achievement gap between disadvantaged and minority students and their peers. States were mandated to establish and implement statewide accountability systems in all public schools and for all students. This included standards in reading and mathematics with annual testing for all students in grades three through eight, at least once in grades ten, eleven or twelve, and annual statewide progress objectives to ensure that all sub-groups of students reach proficiency within 12 years (U.S. Gov., 2002c). Schools and school districts were also required to demonstrate adequate yearly progress (AYP) toward meeting statewide proficiency goals or face sanctions, including corrective and restructuring actions aimed at helping the school or district meet state-established proficiency objectives.

While the NCLB was more prescriptive in demanding proficiency for all students than previous legislation, individual states were still given flexibility in establishing proficiency levels and designating assessments to measure student progress. To meet the high school testing, and the standard of “proficiency within 12 years” (U.S. Gov., 2002c) in reading and mathematics, Maryland chose to implement reading and math assessments at the tenth grade level. This required a totally new test in reading, and MSDE went to

CTBS-McGraw-Hill for the development of the test. To meet the math proficiency testing requirement, the decision was made to utilize the recently developed Maryland high school assessment test for geometry, saving time and money in developing a new assessment instrument. High schools in Maryland, like high schools in many states, found themselves facing new accountability standards, as states attempted to reconcile existing assessment practices with the new federal mandates of NCLB.

Reform in Maryland

Embracing the Challenge

Maryland's educational system, under the leadership of State Superintendent of Schools Nancy Grasmick, embraced the call for student accountability. In a ranking of all state school systems, Maryland was third in 1999, first in 2002, and fourth in 2003 in the area of academic standards, assessments and accountability in *Education Week's* annual publication, *Quality Counts* (Ed Week, 1999, 2002, 2003). The 2002 report gave Maryland a score of "98" and a grade of "A" with only two other school systems, New York and Kentucky, receiving an "A" ranking. The consistent leadership of Maryland's school system in the arena of standards and accountability provides an excellent model for examining school reform initiatives, student accountability, and the potential consequences for educators and students.

Maryland's original reform initiative, "Project Basic," established a minimal level of skills for Maryland students to master prior to graduation. The skills included 165 competencies in reading, writing, mathematics, and citizenship. As a component of

Project Basic, Maryland implemented “Functional Tests” of the four identified areas as graduation requirements beginning with the graduating class of 1987. Even though Maryland’s schools were involved in school reform through a minimum competency functional testing program, the schools continued to receive criticism. The public voiced opinions concerning the number of students dropping out of school prior to graduation, and the quality of preparation of the students graduating from high school. “There was growing evidence that students coming out of school were poorly prepared for the emerging world of the 21st century” (Grasmick, 1996, p.78). This sentiment led Maryland Governor William Donald Schaefer to establish the Commission on School Performance under the direction of Baltimore business leader Walter Sondheim. The appointment of the Commission in 1987, two years prior to the historic meeting of the Nation’s governors in Charlottesville Virginia, propelled Maryland into the forefront of school reform initiatives. The 1989 report of the Sondheim Commission “like an after shock of the 1983 national report, sounded the alarm to the state’s educators and political and economic establishments to take action” (p.79). The report called for increased accountability and led to the establishment of the Maryland School Performance Program (MSPP).

Implementation of the Maryland School Performance Program in 1990 introduced performance testing of students in grades three, five, and eight, bringing an increased emphasis on the use of data to measure school performance. The MSPP was not designed to provide individual student scores or to hold individual students accountable for test scores, but instead to provide annual estimates of school-wide progress in meeting performance standards. The elementary and middle school testing

programs included monetary incentives for schools demonstrating improvement and placed great pressure on schools not doing well on the annual tests. Schools faced the additional concern of motivating students to perform well on a test that was not designed to provide individual scores even though teachers, administrators, and schools were being held accountable for student scores.

High Schools Get Involved

In 1996, the Maryland State Board of Education moved to the next phase of school improvement in Maryland by endorsing the design and development of the high school assessment program with the intention that the tests would become a requirement for graduation. On December 10, 1997, after extensive discussion, the Maryland State Board of Education approved a plan for the phasing in of high-stakes testing as a requirement for students to earn a high school diploma (MSDE, 1997, p.1). A January 28, 1998, resolution by the Maryland State Board of Education proclaimed that students entering ninth grade in the fall of 2000 must pass rigorous state tests in English, government, algebra or geometry, and also a local option of a biology test to earn a Maryland High School diploma. Unlike performance assessments at the elementary and middle schools, these new assessments sought to hold secondary school students individually accountable for meeting rigorous subject-specific performance standards.

Resolution Number 1998-1 also stated that “it is not appropriate to hold students to high standards unless all teachers and other staff members are also held to high standards and quality instruction is delivered to each student each school day” (MSDE Resolution, 1998, p.1). In this resolution the Maryland State Board of Education detailed

concerns about the large number of provisionally certificated teachers employed in some school systems within the state, as well as concerns about a large number of teachers teaching out of certification area in the State's schools. The resolution also recognized the need to improve teacher preparation and staff development, with the plan calling for a K-12 intervention program developed by MSDE to be funded by the state and other non-local sources. The action further included provisions for the State Superintendent of Schools to deal with the problem of provisionally certificated and out-of-field teachers.

The testing program outlined by the Maryland State Board of Education on January 28, 1998, represented a formidable challenge for local school board members, administrators, teachers, and ultimately students. The announcement of this resolution brought immediate anxiety to all involved in the education of high school students. Experienced educators drew comparisons to the implementation of the functional tests in the eighties and the ongoing MSPP program in elementary and middle schools; however, they knew that this initiative was destined to bring about more change and result in more consequences than the earlier programs. The individual student accountability aspect of the high school tests was a much different focus than the Maryland elementary and middle school testing program. Although students participated in the MSPP testing program, they did not receive individual feedback, nor did their performance have any impact on promotion to the next grade. The Maryland High School Assessment (HSA) Program was bringing a totally new set of rules and consequences for students.

The 1998 State Board's plan for the Maryland High School Assessments was for twelve end-of-course tests in specific academic subject areas to be phased in over several years. While the State Board originally planned for twelve tests, no commitment was

made to a specific date for the phasing in of the additional tests. This bold move in 1998 by the Maryland State Board of Education sent a clear message to high school educators: the State Board was very serious about high stakes testing and was ready to tie high school diplomas to the test scores. It was also apparent that the results of the yet undeveloped tests could be used to compare the quality of education at different schools. Ranking elementary and middle schools based on the results of the third, fifth, and eighth grade tests was a yearly routine in Maryland. Test results were published annually in local and statewide newspapers and reported on radio and television news broadcasts. The introduction of high school assessments was bringing the same scenario to high schools. The prospect of implementing a totally new testing program and the ranking of high schools based on the results of high-stakes tests created anxiety for high school teachers and principals. The fact that the tests were not completely developed when the resolution was made by the Maryland State Board of Education heightened the level of concern of local educators.

Early Test Development

To facilitate the development of the high school assessments, MSDE again contracted CTBS/McGraw-Hill to coordinate the composition of the test items. MSDE disseminated sample test items, based on the subject area core learning goals, to all local school systems for distribution to teachers in November 1998 and planned for a limited prototype test administration in January 1999. Only classes in schools following an extended four-period day where students complete a course in one semester were eligible to be considered as part of the first sample group. This facilitated trial testing in January

rather than waiting for the end of the school year, with MSDE identifying thirty classrooms representing seventeen local school systems across the state to participate in the prototype test administration (MSDE, Nov. 1998). The development of the testing program continued with an additional trial administration in May of 1999.

Initial Implementation Problems

In May 2000, the Maryland legislature failed to provide the necessary funds for MSDE's intervention plan, and the State Board of Education voted to revise the 1998 HSA implementation schedule, thus delaying the implementation of the HSA as a graduation requirement. The Maryland Board continued its strong support for the high school assessments but postponed making the exams a graduation requirement for two years. The updated assessment plan stated:

- Assessments will be given as scheduled, starting with the ninth-grade class entering in fall of 2001.
- Assessments will first be tied to graduation for ninth graders entering in fall of 2003, contingent upon the State Board's judgment of adequate implementation of the proposed \$49 million academic intervention plan calling for mandatory additional help for students who fall behind their peers at all grade levels.
- Scores for the 2001-02 and 2002-03 school years will be reported on percentile basis for school systems, schools, and individual students.
- Scores will be reported on transcripts beginning with ninth grade class entering fall 2001.

- Committees will be activated to study incentives (including awarding of scholarships) and endorsements on diplomas. (MSDE Bulletin, May 30, 2000)

Even with the implementation date changes, the statewide testing program continued to move forward with sample testing on a larger scale in January and May of 2000. Students in classes in all twenty-three counties and Baltimore City were included in the 2000 test administration. Again, no feedback from the testing was provided to students, schools, or school systems.

During the 2000-2001 school year, all students enrolled in the identified tested courses participated in the administration of the assessments. Even though all of Maryland's public school students enrolled in English 9, government, biology, algebra, and geometry were tested in January or May, scores were not reported to schools. Students taking the tests knew of no consequences for poor performance, causing school officials to question the level of student effort on the assessments. It was impossible to determine if students were taking the tests seriously, consequently jeopardizing the validity of the test results. At the time of the test administrations, local schools were under the impression that feedback in the form of individual school and school system scores was forthcoming; however, as a result of a decision made at a meeting of local school system superintendents, the 2000-2001 testing results were not released. Superintendents were concerned that if the scores were provided to local schools then the results of the testing program, still under construction, would also be available to the media. With the scores public, ranking and subsequent comparison of schools and school systems would occur. The benefits of using the results for planning purposes did not seem to outweigh the potential negative consequences of releasing the scores to the

public. The comparing of schools based on the results of tests taken when students were aware that it was a practice administration without personal consequence had the potential to generate negative opinions about the state's public high schools.

During the 2001-2002 school year, full administration of the five assessments took place in all Maryland public high schools in January and/or in May (four period day schools administered the assessments in January and also in May). The actual administration of the tests precipitated numerous logistical problems for individual schools. Scheduling students into testing groups, providing conducive testing environments, creating special schedules to provide three hour blocks of time, securing and distributing materials, planning for students not involved in the assessments, training faculty to administer the assessments, and motivating students to take the tests seriously were among the challenges schools faced.

The first results from the 2001-2002 Maryland high school assessment administration were posted on the MSDE website on December 5, 2002, and appeared in the Baltimore Sun newspaper on Friday December 6, 2002. The scores for the five tests were reported as median percentile rankings and were presented for individual high schools in each school system. Headlines such as "Md. test shows gap in schools" (Bowler, Dec. 6, 2002, p. 1A) and "Results of high school exams raise questions on passing" (p. 25A) verified previous concerns about the media using the HSA scores to judge, rank, and compare schools. The articles made numerous references to individual school and school system rankings in the state, "Maryland opened a new chapter in high-stakes testing yesterday, exposing a large disparity in achievement between top-tier high schools and the perennial low achievers" (p. 1A), "Howard and Montgomery counties

scored at the top on the new exams, eclipsing the rest of the state... Though several selective city-wide schools in Baltimore performed very well, many other city schools lagged near the bottom” (p. 24A). Each instance demonstrated the immediate reaction of the media to classify schools according to performance on the new tests.

With the scores provided only as median percentiles, it was difficult to determine actual student performance on the tests. The scores were released approximately six weeks before the next administration of the assessments in January 2003. Schools with four period semester schedules were scheduled to give the assessments in January and again for other schools in May. In addition to the overall school percentile rankings, individual student scores were provided to schools in the form of statewide percentile and scaled scores, however MSDE did not provide test item analysis for schools to utilize in planning intervention strategies to assist students in performing better on the assessments. Preparing students to pass the tests was difficult. At a time when tests were still being modified and passing levels not yet established, schools were responsible for preparing students, and the public was judging schools based on the preliminary results of the assessment program.

Moving Toward Making the Tests a Graduation Requirement

At the August 26, 2003 meeting of the State Board of Education of Maryland, passing level scores were established for four of the five high school assessment tests; algebra/data analysis, biology, English and government. The geometry test was transitioned into the high school math requirement as a component of the testing required by Federal No Child Left Behind (NCLB), eliminating the need to establish passing

levels for individuals taking the test. The passing score levels for English, government, biology, and algebraic concept were developed by local school system nominated teachers, principals and central office staff representatives. A separate group for each test, consisting of the local district representatives and individuals from various educational organizations including the Maryland PTA and the Maryland State Department of Education (MSDE), met over the summer of 2003 to establish the cut-off score levels. The meetings were facilitated by CTB/McGraw-Hill Staff (the company responsible for the development of the assessments). The groups established proficiency and advanced performance levels for the tests after carefully reviewing test items and previous student responses. These recommended passing levels were reviewed by the MSDE Psychometric Council and referred to State Superintendent of Schools Nancy Grasmick, who made the final recommendation to the State Board of Education.

Using the passing score levels approved by the State Board in August, the statewide percentage of students who would have passed in 2002 were:

- Algebra/Data Analysis - 52%
- English – 45%
- Government – 57%
- Biology – 54% (MSDE, 2003)

While the Board set passing scores at the August meeting, it again did not vote to make passing the tests a graduation requirement, delaying the decision until December, after the release of the 2003 testing results. With the establishment of the passing level scores, Superintendent Grasmick noted “It is important for our school systems to have a target... with a target score set for passing; it puts every one of us involved in education

on alert. When we see how well our students are doing, we can make the kind of instructional changes that will help to make certain that every child achieves” (MSDE, 2003, p.1). The “instructional changes” referenced by Superintendent Grasmick represent the possible changes to high school education that have the potential to impact programs such as career and technical education.

MSDE did not release sub-scores for any of the tests, only total individual student scores were provided for the 2003 testing. While these scores were more useful than the median percentile rankings provided to schools in 2002, sub-scores were needed by school level personnel to determine students’ strengths and weaknesses. MSDE anticipated reporting sub-scores for the tests in 2004. This sub-score information is crucial to schools in planning for proper intervention strategies. Without this information, schools have no way of determining students’ skill deficiencies, sometimes leading to the default strategy of requiring students to devote more time in tested subject areas in an attempt to improve student scores.

At the December meeting, while not voting to make the high school assessments a graduation requirement for students, the Maryland State Board of Education moved closer to making this long anticipated action a reality. “With as much misgiving as enthusiasm, the state Board of Education took a significant step toward withholding diplomas from students who don’t pass Maryland’s high school tests, beginning with this year’s seventh graders” (Bowler, 2003b, p. 1B). The vote of 9-2 also directed MSDE staff to begin drawing up regulations for implementing the plan. “The rare split vote came after years of discussion and several delays in setting the date when the exams would count towards graduation” (p. 1B). “Some board members said they voted to take the leap

despite concerns that dropout rates will increase, particularly among poor and minority students” (Mui, 2003, p.AO1). The board also announced that it would hold public hearings in early 2004, with a final vote to take possibly take place in May.

As a component of the high school assessment requirement, the state Board proposed an “alternative route to the high school diploma” (Bowler, 2003a, p.2B). The proposal allows students to earn one of five diplomas, depending on how many high school assessments they pass. Students could earn a “second tier” (p.2B) local diploma by passing three of the four required tests. In addition to the local diploma option, the proposal also included three other diploma options: “a diploma for special-education students; ‘a certificate of program completion’ for severely disabled students; and a diploma for students who score well on SAT and other reputable national exams” (p.2B). This tiered diploma proposal came as a surprise to Maryland educators, as this was the first suggestion from Superintendent Grasmick to offer alternatives to the official state diploma. Throughout the numerous years of development of the high school assessment program, there was no mention of diploma options. The diploma options were slated to be discussed at the public hearings slated for early 2004.

Prior to the scheduled hearings, MSDE testing representatives conducted five regional forums to receive input from high school principals and assistant principals. Concurrent with the five regional state meetings for local building administrators, State Superintendent Grasmick met with district superintendents to receive input on the plan for diploma options. The Baltimore Sun reported on January 16, 2004, that “Maryland’s powerful association of school chiefs and boards of education have given a cold shoulder to state schools Superintendent Nancy S. Grasmick’s proposal for a second-tier ‘local’

diploma...” (Bowler, 2004, p.2B). The Maryland Association of Public School Superintendents “overwhelmingly recommended that the state retain the single diploma” (p. 2B) and also endorsed a plan to allow students to earn a state diploma through achieving a designated composite score on the four required tests. This would be similar to the strategy used by the SAT providers of combining students’ math and verbal scores. This plan allows student with strengths in some areas and weaknesses in others to graduate. Bonnie Ward, Superintendent of Kent County schools is quoted as saying, “We’d still have a measure of how well students do on each test... and this gets us out of the cycle of taking tests year after year because they missed by one point” (P. 2B). This would help prevent the repetition of test taking as was commonplace during the Functional Test requirement era. Carroll County Superintendent Charles I. Ecker, who supported the composite score proposal, however shared the concern that “people would view this as our not wanting to be accountable” (p. 2B). The regional meetings of school administrators and the meeting of the district superintendents took place during the same time frame as the interview process of this research project

Growing Challenges

High schools were now involved in the Maryland Assessment Program (MAP) as a component of NCLB, as well as the High School Assessment Program. High school assessment administrations in Maryland continued as planned in January and May, along with a March 2003 administration of the new tenth grade level reading test administered as a component of the new Maryland assessment program. The geometry assessment given in January and May during the administration of the high school assessments

served to meet the new requirements of the NCLB Act. Maryland's own high school assessment program, combined with the demands outlined in President George W. Bush's No Child Left Behind reform initiative, placed a testing challenge on Maryland high schools unlike any in recent history. In the 2002 Annual Report of the Maryland Business Roundtable for Education, Board of Director's Chairman Raymond A. "Chip" Mason recognized the challenges facing Maryland's schools. He emphasized that the state is at a "critical crossroads" and schools are entering "a new phase of reform prompted by two major catalysts." These "catalysts" were the recognition that student achievement must improve and the collective requirements of the No Child Left Behind Act (Maryland Business Round Table, 2002).

Local Impact of the Assessments

A high-stakes accountability program with the proposed consequences of the Maryland high school assessments, combined with the requirements outlined in NCLB, set the stage for change in numerous aspects of local high schools. With all public high schools in Maryland focusing on the challenge of preparing students for success on the required tests, many school programs face the possibility of being impacted. Although it is in its infancy, the HSA program presents a formidable challenge to Maryland educators at the school level. This state-mandated reform initiative is high stakes for students as well as for local schools and school systems. From a policy perspective, the assumption is that a testing program of this nature will compel schools to seek the best methods, instructional techniques, school schedules, and any other strategies to assure student success.

The leaders of Maryland's high schools have no past experience preparing students for assessments with the ramifications of the high school assessment program. School personnel are challenged to determine the best instructional strategies and school structures to facilitate student success on the assessments. While extensive work at the state level was invested in the development of the subject area core learning goals and the test items, local school systems and individual high schools are left with the challenge of preparing students for the assessments and integrating their instructional goals into existing programs and missions. Efforts to prepare students for the assessment program are destined to present challenges to aspects of high school organization and programs. An in-depth look into the challenges the assessment program may pose to specific aspects of local high schools is the intent of this research. In an *Education Week* commentary, Brian Stecher and Laura Hamilton (2002) raise an important issue concerning the impact of high stakes assessments, "...we are likely to see an increase in emphasis on tested subjects and a decrease in emphasis on subjects that are not tested" (p.48). With the pressure for students to perform well on the state assessments and meet the proficiency mandates of NCLB, programs not included in the state and national testing requirements face the possibility of being "left behind."

The four year high school experience in Maryland incorporates numerous courses and other opportunities for students not assessed by state-mandated testing. For some students participation in courses not included in the assessment program may prove to be more valuable for future career plans than time spent preparing for the required tests. With the demands of accountability testing intensifying, career and technical educators will face even more pressure to devote time and energy preparing CTE students for the

high-stakes assessments, potentially threatening time formally devoted to the attainment of specific technical skills. This conflict of objectives brings attention to the need for this research, and establishes the foundation for the research questions. Of particular interest to this study is the challenge of high-stakes assessments to career/technical education programs.

Maryland Career and Technical Education Models

Vocational or career/technical education (CTE) is offered to students in a variety of formats in Maryland high schools. The three most popular models are:

- Comprehensive technical high school, where students attend full-time for grades nine through twelve and take all courses, academic and technical. These are typically magnet schools with students from a large geographical area or the entire district attending. Students normally participate in all aspects of high school life, including clubs and athletics, at these schools.
- Community high schools with a career/technical component, often located on campus in a separate wing of the school. This model is popular in school systems with a small number or only one high school.
- Career/technical centers, where students attend part-time and attend a home high school part-time. This model includes schools for students in ninth through twelfth, tenth through twelfth, and also those for only eleventh and twelfth grades. Career/ technical centers operate under a variety of schedule formats and typically offer only technical courses for

students. Students participate in extracurricular activities and athletics at home high schools.

Purpose of the Study

The overall objective of this study was to determine the perceived challenges of high-stakes testing on career/technical education in Maryland. The research investigated the challenges of these assessments to the mission of career/technical education in comprehensive technical high schools, community high schools with a CTE component, and career/technical centers

Background

This study developed through my experiences as a principal of a comprehensive technical high school in Maryland in conjunction with my interest in the high-stakes accountability initiative. Roughly 1100 ninth through twelfth grade students attend the magnet comprehensive technical high school where I am principal. All students complete a certified Maryland CTE program and each year 40 to 45 % of the students are dual completers, satisfying the University of Maryland System requirements, which includes advanced academic courses and two years of a foreign language.

Shortly after the Maryland's high school assessment initiative was launched in December of 1997, MSDE established a state-wide high school principal's advisory committee made up of representatives from numerous local school districts. Serving on this committee for five years enriched my knowledge base of the testing program and also increased my interest in numerous aspects of the initiative, specifically the actual

implementation of the assessments at the local school level. Members of this committee were given the opportunity to share school level concerns and provide input that actually helped shaped the development of the assessment program. At these meetings, several discussions involved concerns about the impact of the assessments on other aspects of high schools, and also for the students' not experiencing success on the high-stakes tests.

My involvement with the assessments combined with twenty-seven years experience in technical education (thirteen as an industrial arts teacher in a comprehensive high school, two as a technical high school assistant principal and twelve as a principal) helped develop the motivation for this case study of the perceived challenges to CTE programs in Maryland as a result of the implementation of high-stakes assessments.

Research Questions

Specific research questions for this study are:

1. What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?
2. What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland (comprehensive technical high schools, technical centers, and community high schools with embedded career/technical programs)?

Research Overview

The research utilizes qualitative research methods through a case study to address the research questions. Maxwell (1996) identifies five specific research purposes for qualitative research methods:

1. Understanding the *meaning*, for participants in the study, of the events, situations, and actions they are involved with and of the accounts that they give of their lives and experiences.
2. Understanding the particular *context* within which the participants act, and the influence that this context has on their action.
3. Understanding *unanticipated* phenomena and influences, and gathering new grounded theories about the latter.
4. Understanding the *process* by which events and actions take place.
5. Developing *causal* explanations... (1996, pp.19-21)

Locke, Spirduso, and Silverman (1993) describe qualitative research as focusing attention “on the perceptions and experiences of the participants” (p.99). Patton (1990) simply states that “qualitative methods permit the evaluator to study selected issues in depth and detail” (p.13). The approach of this study is to utilize qualitative research techniques to gain an in-depth understanding of the perceived challenges of the mandated assessments on career/technical education in Maryland schools. Data were obtained from those closest to the assessment process at the state and the local school level, and involved reporting on the personal experiences and perceptions of those involved in implementing the assessment program.

Patton identifies three kinds of data collection for qualitative research: (1) in-depth, open-ended interviews; (2) direct observation; and (3) written documents (p.10). The research plan for this study followed Patton's model for collecting data. Key informant interviews were conducted at MSDE with personnel involved in testing and with career/technical education. Interviews also took place with local directors of CTE and with selected principals and teachers involved in career/technical education. "Typical cases" for this research were selected from the twenty-three Maryland school systems. After identifying the models employed across the state to deliver career/technical education, a representative from each of the three different models of career/technical education in Maryland was identified. Comparisons were made byreferencing the data collected from the participants involved in the implementation of the assessments at comprehensive technical high schools, community high schools with a CTE component, and technical centers. An additional goal of the study was to determine the relationship between MSDE personnel's perception of the challenges to CTE and that of local school personnel.

Summary

It is hoped that this study contributed to the limited body of knowledge concerning the challenges that high-stakes assessments may place on specific high school programs, specifically career/technical courses. An additional intent of this research was to determine what is presently occurring in career/technical high schools to assist in preparing students for the assessment program in Maryland. It is anticipated that through this research, an understanding of the challenges to school programs as a result of high-

stakes assessments evolved and will prove valuable to current and future educators involved in preparing high school students for success on current and future testing initiatives.

Following this introduction to the research project is the review of related literature in chapter two. This review begins with a look at the evolution of the historic mission of vocational education through the impact of federal policy and other outside forces that helped shape its development. The progression and status of the high stakes assessments movement in the United States is also explored. The literature review then visits the impact of the high-stakes testing movement on the numerous aspects of high schools and how mandated testing is impacting non-tested areas such as career/technical education. The research design and methodologies are framed in chapter three, which outlines the specific procedures to be employed in completing this qualitative research project. Chapter four presents the findings to the identified research questions, followed by an interpretation of research findings in chapter five.

CHAPTER TWO: REVIEW OF THE LITERATURE

Overview

This chapter clarifies the focus and intent of the research study through a synthesis of background literature in the following two areas: the historical mission and evolution of vocational/career technical education in the United States; and the impact of high stakes assessments on high school programs, including the consequences for non-tested curriculum areas. The review illustrates how historical and social forces have impacted the development of vocational education programs in the United States. The review of high-stakes testing examines the emergence of a national testing initiative as background for the evolution of testing as a form of accountability in Maryland.

Forces Impacting Vocational, Career/Technical Education

Many of the current issues surrounding vocational education are similar to those of over one hundred years ago, with the underlying issue remaining constant: what type of education is really best for students? Is it best for all students to pursue only a core academic course of study while in high school, or is it more beneficial for students to also experience specific forms of career education? The question of academic versus vocational education and which is most important or useful to students is at the center of many discussions of vocational education. This issue is often approached from the perspective of theoretical (academic) versus practical (vocational) education and which of these will better prepare students for productive, successful adult lives. As early as 1771, the American Philosophical Society discussed the concept of useful knowledge:

Knowledge is of little use when confined to mere speculation. But when speculative truths are reduced to practice; when theories grounded upon experiments are applied to the common purposes of life; and when by these agriculture is improved, trade enlarged, the arts of living made more easy and comfortable, and of course, the increase and happiness of mankind promoted; knowledge then becomes really useful. (as cited in Kett, 1990, p.4)

Throughout history proponents of vocational education have argued that vocational education assists students in transforming academic knowledge into useful practical applications. While policy makers and educators have generally acknowledged the value of practical skills knowledge, they have rarely received the status or importance attributed to academic skills and knowledge. For example, while schools are constantly ranked and judged according to scores on academic tests, student success in vocational programs is rarely a factor in evaluating schools. This practice leads to reduced attention to and emphasis on vocational courses, reinforcing the belief that academic studies are more important, worthwhile, and rewarding for students than vocational/technical courses.

The current status of vocational education is the product of the influence of a series of events transpiring over many years. While major education policy decisions historically occur at the state and local levels, the federal government possesses influential power to establish and control programs through funding. The National Center for Research in Vocational Education identifies three major forces frequently competing to control the direction of vocational education in the United States: "...the unique needs

of local community, the policies and purposes of each state and the overarching goals of federal programs” (NCRVE, 1993, p.2). Similar elements continue to influence educational policy, controlling the direction and fate of local educational programs, including the current high-stakes testing movement.

From the beginning of formal vocational education, a single factor influencing the early establishment and direction of vocational education programs was and still is the supply of federal funding sources earmarked specifically to establish and support vocational education programs. Discussions concerning the origins of formal vocational education begin with the Smith-Hughes Act of 1917. This landmark legislation appropriated \$1.7 million in 1917-18 with increasing funding levels to \$7.2 million in 1925-26. These federal funds were designated for the education of students over fourteen years of age not attending college and preparing to enter specific vocational fields (AVA, 1998; Kapes, 1984; U. S. Government, 1917; Hayward & Benson, 1993). While the Smith-Hughes Act is associated with the official beginning of formal vocational education in high schools, several significant events preceding this legislation contributed to the establishment of the groundwork for career/technical education.

The Early Years

The Morrill Act

Several nineteenth century federal actions paved the way for the Smith-Hughes Act, which for many years provided national support and significant funding for vocational education. Over fifty years before Smith-Hughes, the Morrill Act, passed by Congress and signed into law by President Lincoln in 1862, was an early example of the

federal government's involvement in setting educational policy through funding appropriations. This legislation provided land grants for the establishment of colleges to essentially serve the needs of the "agrarian community" (Miller, 1993). The Morrill Act, while not specifically addressing secondary vocational education, identified the needs of scientific, agricultural, and industrial training. The Morrill Act is an early example of the federal government's attempt to use education as a means to meet the economic needs of the nation, and most importantly it set the precedent for future federal intervention into the fate of vocational education (Hill, 1923; Miller, 1993; Hoffman, 1976).

Manual Training

During the decade following the Morrill Act, Calvin Woodward of Washington University Polytechnic University contributed to the early development of vocational education (Kett, 1990; Law, 1975) through establishing a requirement for engineering students to construct models. He recognized a deficiency in his engineering students' ability to use tools and introduced compulsory shop instruction at the university. In 1880 he established the St. Louis Manual Training School, with the goal to "...establish shop work as an integral component of general or liberal education" (Kett, 1990, p.10). Woodward stressed that it did not make sense to study physics or chemistry without the experience of touching objects or being involved in the mechanical process (Kett, 1990; Law, 1975). Woodward professed that "shop work" was best taught like any other "academic" type of course. Through manual training it was possible to educate the "mind through the hand" (Hoffman & Hoffman, 1976, p.11), and Woodward advocated this type of education for all students.

The manual training movement was also an early attempt to use practical or vocational education to enhance the education of students not inspired by the traditional academic curriculum (Law, 1975; Hoffman & Hoffman, 1976). Woodward professed that the total emphasis on academic studies was a major reason for students dropping out of school prior to graduation, an issue resurfacing in concerns surrounding high-stakes graduation tests. He suggested manual training, home economics, and other practical courses as a solution to the problem (Kett, 1990). Although educators such as John Dewey raised fears about using education to predetermine a student's future social class status (Ryan, 1995), Woodward's movement continued to grow and attract proponents. The first manual training high school in Maryland opened in Baltimore in 1883 (Good, 1969; Hoffman & Hoffman, 1976).

By 1900 the United States Commission of Education noted a steady increase in the enrollment at the approximately one hundred manual training schools spread across the nation. The first manual training high schools included courses in shop work, drawing, mathematics, science, and languages, and required all students to take an entrance exam prior to attending. Although the school's primary mission was not to prepare students for college, students did master the prerequisites necessary to enter college if they desired. Despite the fact that manual training was often looked on as education for less able students and a preparation for a life of "laborious tasks" (Ryan, 1995), the manual training movement became a significant factor in the early recognition of the importance of "practical" knowledge for all students and the emergence of vocational and technical education as a legitimate course of study for adolescents..

The Committee of Ten

In addition to the manual training movement, the end of the nineteenth century saw other factors influencing the overall structure of secondary schools. In 1892, the Committee of Ten, a group made up of educators, and college professors, and chaired by Charles William Elliot, president of Harvard University, set out to address the issue of the wide variety of high school programs and the numerous admissions procedures required by colleges. In the late 1800's, college admission was routinely granted through taking individual college examinations and meeting admission requirements specific to each college. This Committee was challenged to bring order to the diverse high school curriculum and to standardize preparation for higher education (Tyack & Cuban, 1995). Diane Ravitch (1995) identifies four difficult issues that the Committee of Ten had to address:

- the antagonism between the proponents of modern academic subjects and those of the classical curriculum,
- uniformity in preparing students for college and convincing colleges to accept modern curriculum as opposed to only the classics for college entrance requirements,
- the demands of some educators to include manual training and other practical courses, and
- the issue of offering separate curricula for college bound and non-college bound students.

An additional concern was the small percentage of school-age children attending high school at the end of the nineteenth century. The rural population did not generally attend

high school; and even in the cities, where numerous students lived geographically close to the school, only 3.5 percent of students graduated from high school (Tyack & Cuban, 1995).

As in modern times, social and political forces were influential in the educational policy decisions of the Committee. In the late 1800's, "...demands were already being heard in the educational press for different kinds of education for the children of workers and the children of privilege" (Ravitch, 1995, p.171). However, the Committee of Ten did not heed the desires of the press, and recommended that all high schools teach subjects to all children in the same manner. The Committee's final report "took a firm stand against differentiation between those who planned to go to college and those who did not" (Ravitch, p. 171). The report "outlined four secondary curricula: Classical, Latin-Scientific, Modern languages, and English" (Willis & others, 1993, p.86), and attempted to "...minimize the distinction between the preparation for college and for a terminal high school degree" (Ravitch, 1995, p.86). Critics accused the Committee of Ten of ignoring the needs of students not attending college, rather than acknowledging the Committee's desire for the same liberal arts education for all students regardless of their future vocation. (Ravitch, 1995; Tyack & Cuban, 1995).

While the report moved high school curricula away from exclusive emphasis on the classics, there were no recommendations for the inclusion of vocational education, manual training, or other practical subjects. Although the committee argued against 'vocational education' – that is, using schools to train young people for specific jobs – vocationalism or 'adaptation to life' became the dominant curriculum as secondary education expanded in the rural and urban areas of the country (Marsh, Coddling, &

Assoc., 1999, pp. vii, viii). Despite the Committee's ideal of a "liberal arts education" focusing solely on cultivating the mind for all students regardless of life pursuits, societal and economic pressures continued to push secondary education in a different direction.

The Influence of John Dewey and Others

While the Committee of Ten recommended moving the high school curricula away from a total emphasis on classical studies, it did not answer the call for a more practical experienced-based approach to educating students expressed by several prominent educators. The most notable of these educators was John Dewey. Dewey did not endorse preparing students for specific vocations while attending high school; however, he did see value in a practical education for students. He referred to this as "education through occupations" or "academic education occurring in the context of real-world experiences" (Dewey, 1916, p. 309). Dewey states: "Education through occupations consequently combines within itself more of the factors conducive to learning than any other method" (1916, p.310). He was critical of pure academic education and methodologies that required students only to memorize facts and theories.

While Dewey was in favor of learning through practical application, he was adamantly opposed to any form of education that segregated students into academic or vocational tracks. He was also very outspoken against education that trained students for specific jobs or vocations and subsequently trapped students in career paths for life. "To predetermine some future occupation for which education is to be a strict preparation is to injure the possibilities of present development and reduce the adequacy of preparation for a future right employment" (Dewey, 1916, p.310). In addition to identifying the concern for wrongly predetermining a student's future vocation, Dewey also saw vocational

education as a vehicle through which the separation of social classes would continue. He warned that segregated vocational education might become an early selection mechanism in establishing a permanent laboring class. “Nothing is more tragic than failure to discover one’s true business in life, or to find that one has drifted or been forced by circumstance into an uncongenial calling” (p.308). While not proposing the same curriculum as the Committee of Ten, Dewey did agree with providing all students with similar curriculum offerings and educational opportunities. “In 1895 John Dewey had observed that the high school ‘must on the one hand serve as a connecting link between the lower grades and college, and it must on the other, serve not as a stepping stone, but as a final stage’ for those directly entering the life of the society” (Tyack & Cuban, 1995, p.50).

Though Dewey was convinced that vocational education should not be presented in a segregated format, others disagreed. Two very outspoken opponents of Dewey were Charles Prosser, a veteran school administrator and an author of the Smith-Hughes Act, and David Sneed, a former school superintendent, who taught education at Stanford and Columbia (Kett, 1990, p.35). These outspoken proponents of vocational education advocated for a dual system of general and vocational education. They disagreed with Dewey’s philosophies concerning vocational education and worked to create an educational system that trained students for jobs, rather than for life in general. Prosser also saw vocational education as a means for preserving the natural and human resources of the United States (Good, 1969), whereas Sneed “believed in ‘social efficiency’ – the notion that education could prepare youths for particular niches they were destined to fill as adults. Prosser and Sneed emphasized that all students cannot achieve success

through the same form of education; therefore, vocational education was needed to meet the needs of the students who were not successful within the framework of a traditional academic curriculum.

Charles Prosser and David Sneed also saw job-specific, job-based vocational education for students as the answer to society's needs for manufactured products (Kett, 1990). The rapid expansion of manufacturing and the increased need for skilled workers helped establish the framework for Prosser's viewpoints (Prosser & Allen, 1925). The wealth of the nation depended upon its ability to turn limited raw materials into the manufactured goods needed by society, and Prosser and Sneed were very interested in the effective training of a skilled workforce to produce these goods. Prosser, Sneed, and others envisioned a public system of segregated vocational education that would serve as an efficient means to train the large number of workers needed by industry in the early 1900's.

During the late 1800's, the quality and diversity of high school vocational education programs for students were limited. The most common offering, commercial education, was essentially designed to train businessmen, and was mainly offered in urban high schools. With the onset and widespread use of the typewriter, this curriculum evolved to include a secretarial track for girls (Kett, 1990). The manufacturing community and proponents of agriculture also looked to the public schools to train students with specific job related skills. These wide ranging concerns led to the consensus that a vocational educational system for school-age youth was needed and that it should include industrial education, vocational courses in agriculture, and home economics

(Gray, & Herr, 1998). The larger issue was where, how, and in what format should vocational education be offered to students.

These social and political conditions coupled with the contrasting philosophies of Dewey, Prosser and Sneeden intensified and became known as “the infamous dual systems debates” (Gray & Herr, 1998, p.14). “The difference between manual training, with its emphasis on general learning for all students, and vocational education, with its insistence on job-specific training designed for ‘evident and probable destinies’ of different students, emerged again in the views of John Dewey and in several debates between Dewey and others” (Grubb, 1995, p.12). While by the turn of the century most agreed that some form of practical or vocational education was needed in high schools, the structure for the delivery to students was still in question. The debate continued into the early 1900’s, until vocational education was included as a component of general education, but with separate controls ultimately provided by the passage of the Smith-Hughes Act.

Cardinal Principles Include Vocational Preparation

Twenty-five years after Committee of Ten’s work to address secondary school curriculum and structure, an additional landmark report was released. The 1917 report by the Commission on the Reorganization of Secondary Education, the Cardinal Principles of Secondary Education, hoped to address the needs of the increasing number of students attending school. “Not only were more students attending school, but a greater proportion of the school age population was remaining in school, especially secondary school, thereby forcing school curricula to cope with the needs of the general public more fully than had been the case earlier” (Willis, Schubert, Bullough, Kridel & Holton, 1993,

p.153). While the Committee of Ten promoted a similar academic curriculum for all, the Cardinal Principles advocated a diverse curriculum as a preparation for life. This report set the stage for an expanding curriculum to meet the needs of students with different interests and ability levels. The intent of the report was to expand the secondary school curriculum, including a wide array of experiences for students: The Commission set forth seven areas of life for secondary education to address: health, command of fundamental processes, worthy home membership, vocational preparation, citizenship, worthy use of leisure time, and development of ethical character (Willis, et al., 1993). The inclusion of the concept of “vocational preparation” in the report was a significant step in legitimizing vocational education’s entry into the formal structure of secondary education.

Additional Pressure for Vocational Education

In addition to the release of national reports, societal issues of the times also contributed to the evolution of vocational education programs. The recognition of the need to meet the students’ diverse educational needs motivated reformers to begin looking to schools as the solution to numerous societal ills. These social problems included “...the development of the factory system, which subdivided labor and eroded the apprentice system; the presumed atrophy of the traditional socialization of children by parents in urban settings ...: and the arrival of masses of immigrants unfamiliar with American institutions” (Tyack & Cuban, 1995, p.51). The traditional academic curriculum was not designed to address vast societal needs or deal with the increasing number and diversity of students in schools. Influential educators used this situation to leverage additional support for vocational education. They argued that the industrial and

social unrest was “due in large measure to a lack of vocational training” (Prosser & Allen, 1925, p.424).

The National Society for the Promotion of Industrial Education (NSPIE), a group of manufacturers, mechanics, businessmen, politicians, and educators worked to bring the importance of industrial education into the public eye, as well as to secure funding through federal aid for vocational education (Barlow, 1974; Hoffman & Hoffman, 1976). The NSPIE merged with the Vocational Education Association of the Middle West in 1926 to form the American Vocational Association (AVA). This action created the first unified national association whose sole mission was supporting vocational education programs (ACTE, 2002). In 1930, AVA President Charles Miller shared his vision of the national organization: as “an organization through which vocational educators throughout the country seek to crystallize their thinking in the field of vocational education and through which they attempt to interpret to the public the aims and objectives and significance of a national program of vocational education” (ACTE, 2002, p.22).

History depicts the accuracy of Charles Miller in his hopes for the new organization, as the AVA influenced numerous votes on federal vocational funding and also played a critical role in the institutionalization of vocational education in secondary schools. Seventy-five years later at the 1998 national convention, the AVA in response to the evolution of vocational programs into technical programs, changed its name to the Association for Career and Technical Education (ACTE) and remains the foremost proponent of vocational-career/technical programs in the United States today.

Smith-Hughes Provides Funding for Vocational Education

The Federal Commission on National Aid to Vocational Education (FCNAVE) was influential in passage of the Smith-Hughes Act. Aware of the additional expense of vocational programs as compared to traditional academic courses, this influential organization sought to secure funding to establish formal vocational education in the country. Numerous powerful groups such as the National Society for the Promotion of Industrial Education, the Chamber of Commerce, the National Association of Manufacturers, the American Federation of Labor and others joined forces to set the stage for the passage of the Smith-Hughes Act of 1917 (Apple & Beane, 1995; Prosser & Allen, 1925).

While the Smith-Hughes Act was not the first federal legislation dealing with vocational education, it was the most significant and most notable (U.S. Gov. 1917; Kapes, 1984; Gray & Herr, 1998; Lynch, 2000, ACTE, 2002). The long-term impact of this legislation was in the comprehensive nature and the specific requirements outlined in the legislation. Most important, the Smith-Hughes Act established vocational education as separate from 'regular education'. It created a separate board of education, a separate source of funding, a separate set of requirements for teacher preparation and certification, and a separate curriculum (Lynch, 2000). The act specified the requirements for states to meet in order to qualify for vocational funding, including the precedent of requiring states to match the amount of funding received from the federal government (U.S. Gov., 1917). This practice continues today and prevents state and local boards of education from diverting vocational funding for use in other programs.

The impact of federal dollars from Smith-Hughes enabled states and local schools to establish numerous successful vocational programs, but regulatory provisions of the act set the course for the development of a dual system of secondary education (Gray & Herr, 1998). “Most schools gradually evolved into the United States version of a dual system consisting of one branch for pupils who planned to enter post-secondary educational institutions and one for students who were preparing for the world of work” (NCRVE, 1993, p.3). This historic division between academics and vocational studies became a reality and was institutionalized in high schools in the form of academic curriculum for talented students and vocational education for less able students (Kapes, 1984; Tyack & Cuban, 1995). Although Smith-Hughes Act formally recognized the value of practical education, the largely segregated and stratified system that emerged in the United States realized many of the fears of early reformers like Dewey.

Though vocational programs were included in the structure of the public high school, the practice of separating students enrolled in the career specific programs from academic courses would not have met John Dewey’s expectations for occupational education. Dewey (1916) professed that the most powerful way to acquire practical knowledge, apply academic content, and critically examine individual and societal values for all students was through vocational or occupational education. While the early opinions expressed by John Dewey helped bring national attention to the need for vocational or “occupational” education, vocational programs developed after the passage of the Smith-Hughes Act were not modeled after his teachings. Not until the passage of Perkins II legislation in 1990 would philosophy for vocational education begin to resemble the dreams of John Dewey.

By 1926, Smith-Hughes funding levels reached \$7.2 million annually with over 850,000 students enrolled in vocational classes in the United States. In 1929, Congress increased annual appropriations for home economics and agriculture education (AVA, 1998). The early thirties saw a different economic mood in the federal government with members of Congress seeking to reduce Smith-Hughes funding; however, vocational education proponents, including the AVA, were able to secure permanent funding authorization. In 1936, the funding increased to 14.55 million annually through the George-Deen Act, allowing Congress to annually determine funding amounts. These funds supported vocational education at a critical time in our nation's history, the years prior to World War II, enabling vocational educators to establish their programs within the secondary education system and to respond to changing social, economic, and political events throughout the first half of the 1900s and into the early 1960's (Wenrich, Wenrich, & Galloway, 1988).

New Direction for Vocational Education

Shortly after taking office in 1961, President John F. Kennedy expressed the desire to examine the basis for federal policy in vocational education. He stated:

The National Vocational Education Acts first enacted by Congress in 1917 and subsequently amended, have provided a program of training for industry, agriculture and other occupational areas. The basic purpose of our vocational education effort is sound and sufficiently broad to provide a basis for future needs. However, the technological changes which have occurred in all occupations call for a review and re-evaluation of these acts, with a view toward

modernization. To that end, I am requesting the Secretary of Health, Education, and Welfare to convene an advisory body drawn from the educational profession, labor, industry, and agriculture, as well as the lay public, together with representatives from the Department of Agriculture and Labor, to be charged with the responsibility of reviewing and evaluating the current National Vocational Education Acts, and make recommendations for improving and redirecting the program (as cited in Wenrich, et al.,1988, pp.26, 7).

Although the review was greeted with fanfare, Kennedy's request initiated a series of fundamental changes in vocational education and helped set the stage for current accountability reforms.

Carl Perkins Legislation, 1960's and 70's

The review ordered by president Kennedy produced *Education for a Changing World of Work*. Calling for a new direction for vocational education, the report recommended both expanding and accelerating vocational programs to train more students and to offer students additional opportunities. This report represented the first fundamental philosophical change in federal vocational education policy since 1917 and resulted in the Vocational Education Act of 1963. "The 1963 Act was the product of a growing sensitivity to human welfare, and its emphasis was upon the people who needed skills rather than upon occupations which needed skilled people" (Wenrich, et al., p.28). Sponsored by Kentucky Representative Carl D. Perkins, one of the most influential advocates for vocational education in Congress, the 1963 act increased the federal influence over state vocational plans by including additional funds for poor and disabled students "... in economically depressed communities who had academic, socioeconomic,

or other disadvantages that prevented them from succeeding in regular vocational education programs” (Lynch, 2000, p.9).

Funding for vocational education increased in 1968. Although Congress was unable to set aside \$800 million to fund Perkins, as intended, the final version of the bill appropriated roughly \$365 million annually, still a substantial addition to the federal government’s commitment to vocational education. This funding coincided with a continued growth in the number of vocational programs and also in the number of students completing these courses. The 1968 and 1972 amendments to Perkins continued set-asides focusing on “students with disabilities, disadvantaged students, postsecondary students, and students preparing for occupations not traditional for that gender” (Lynch, 2000, p.9). As a result of Perkins funding, the 1960’s and 70’s saw tremendous growth in and recognition of secondary vocational education programs, especially in large city school systems (Boesel, 1994; AVA, 1998).

Declining Enrollment in the 1980’s

Enrollment in secondary vocational education programs in many states declined during the eighties. Strickland and others (1992) report thirty-one states and the District of Columbia experiencing decreased vocational enrollment between 1982 and 1990, with nineteen states showing increased enrollment during the same time frame. While the National Center for Research in Vocational Education (NCRVE) report did not diagnose the causes for the declines, the authors noted the national emphasis on raising academic standards in secondary and post-secondary schools may have contributed to the decline in student interest and local support. Increased graduation requirements in academic subject areas may have dissuaded some students from enrolling in vocational courses (Lynch,

2000). Moreover, changes in the labor market, particularly the declines in the share of clerical and manufacturing jobs in the workforce, may have contributed to declining enrollments in vocational education programs during the 1980's (Boesel & McFarland, 1994, p.14).

1990 and Beyond, Perkins II

When Congress reauthorized the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (Perkins II) it sought to address the growing demand for academic rigor in public schools and concerns about the declining support for vocational education programs. Perkins II represented the second significant change in vocational education policy since the Smith-Hughes Act of 1917. For the first time, federal legislation sought to integrate the goals of vocational education with those of the “regular” or traditional school program. For the first time, federal vocational education policy was directed towards all segments of the student population” (NCRVE, 1993, p.3).

The 1990 legislation emphasized:

- Requiring the development of statewide performance standards and measures.
- Integrating academic and vocational curricula.
- Promoting two-plus-two tech-prep programs that link high schools with postsecondary institutions.
- Supporting work experience programs, such as apprenticeships and cooperative education. (p. 3)

Although Perkins II resources were still targeted at ‘special populations’ (Castellano et al., 2001, p.15), the act specifically encouraged the integration of academic and

vocational education, set aside funds for the enhancement of technical education, and “responded to widespread concerns that many high school students were failing to develop the academic and technical skills they would need to succeed in an increasingly technological labor market and competitive world market” (Hershey, et al., 1998, p.XIII). The thinking behind the formulation of the 1990 legislation was more aligned with Dewey’s philosophies than during any previous vocational legislation. Rather than the total emphasis being on the acquisition of on specific technical skills, vocational education was beginning to move in the direction of supporting the academic needs of all students.

From 1917 into the twentieth century vocational education remained segregated in a dual system as advocated by Prosser, Sneed and the 1906 Society for the Promotion of Industrial Education. Students in danger of dropping out of school and students not successful in the academic college-prep curriculum were enrolled in vocational courses (Gray & Herr, 1998). While segregated vocational education served the needs of numerous students over many years, it became second rate to academic education. Through the reauthorization of the Carl Perkins Act in 1990, a departure from the old thinking behind vocational programs took place and a movement toward programs resembling the ideas of John Dewey gained greater credibility and support. Perkins II was a direct attack on the historical distinction among students enrolled in the two programs (NCRVE, 1993). Vocational education students were to receive rigorous academic course-work integrated into high quality technical programs, and in order to qualify for federal funding, local vocational educators were required to demonstrate that this was the case.

As with previous initiatives in vocational education, reports on the effectiveness of Perkins II were mixed. After reviewing numerous studies on the effectiveness of Perkins II initiatives, Castellano, Springfield, and Stone (2001) conclude,

Like many proposed changes to the structure of schooling, the initiative to integrate academic and vocational education has been supported only with anecdotal evidence of increased student engagement and achievement. To date it has been difficult to assess the effectiveness of integration for all students, and thus for any subset of the high school population, such as at-risk students. (p.19)

Their review also found that while many new technical education courses were developed across the country, only 15% of Tech Prep students ever received articulated credit for high school courses. In addition, while the number of Tech Prep programs grew between 1992 and 1995, only 8% of high school students were actually involved in these courses with the number falling to only 1% if only “strong” Tech Prep programs were included in the results.

While the Perkins II reform initiatives brought mixed successes, this legislation, especially through the Tech Prep initiative, was influential in shaping the structure and direction of secondary vocational education. It laid the ground work for legislative efforts, such as the 1994 National School to Work Opportunities Act (NSTWOA) that sought to strengthen and connect school-based and work-based learning. Although Perkins II and supplementary legislation had modest success in promoting the integration of academic and vocational education programs across the country, they made curricular integration a significant policy issue for vocational educators and school reform advocates.

Perkins III

The political climate preceding the 1998 reauthorization of Perkins was different than that of previous reauthorization legislative sessions. Already in control of the Senate, the Republicans gained control of the House of Representatives in 1994. With this shift in political power, the stage was set for change in educational legislation. “The Perkins act became a test case for education reforms that were long-advocated by Republicans, but ignored by Democrats” (AVA, 1998, p.8). Many of these reforms involved providing states and local schools with greater flexibility in how to spend federal funds, particularly by consolidating numerous individual funding streams into block grants, and requiring greater accountability on the part of state officials and local educators for increasing achievement. After intense debates in Congress and lobbying, the Carl D. Perkins Vocational-Technical Education Act Amendments of 1998 (Perkins III) was signed into law on October 31, 1999.

Although Perkins III did not include block grants, the legislation allowed more flexibility in program experimentation and development, continued support for technical education, emphasizing the use of technology in the classroom and distributed 85% of state money directly to local school systems (ACTE, 2002; Brustein & Mahler, 1998; Castellano, et al., 2001). A major focus change of Perkins III was “... the alignment of vocational education with state and local efforts to reform secondary schools, so that CTE [Career Technical Education] becomes an integral part of these efforts” (Castellano, et al., 2001. p.24). Brustein and Mahler (1998) report:

The 1998 Act places greater emphasis on academic standards. Prior to 1990, Congress had never contemplated the integration of academic proficiencies. The

1990 Act redefined 'vocational education' to require the integration of academic and vocational proficiencies. The 1998 act places an even higher priority on developing challenging academic standards. This focus on academics reflects an historical precedent in the 81-year federal role in vocational education. (p.8)

The 1998 Act also eliminated all affirmative action provisions including the targeting of special populations as designated in previous Perkins legislation.

Vocational Education and Accountability

Since the 1998 enactment of Perkins III, the nation's secondary schools, vocational programs included, have been thrown headlong down the path of school reform through accountability and, most recently, high stakes assessments. The accountability provisions called for in the 1998 Perkins III reflect national and state directives for academic educational accountability, but these provisions do not stress student attainment of specific vocational or technical skills. Rather, the emphasis is on vocational education developing into a vehicle for strengthening student academic skills. Although these provisions may represent a positive step toward integrating academic and vocational education and addressing the stratification of secondary education programs, they may also jeopardize the mission of vocational education, especially if these provisions undermine the ability of educators to provide meaningful educational opportunities that prepare students for specific careers and technical positions.

Reflecting on the early years of vocational education, the current status of career/technical education is quite intriguing. Comparing the current status of vocational education policy to the early development years raises interesting conclusions. While the emphasis on integrating academic and vocational education is reminiscent of programs

outlined by Dewey in the early 1900's, the status of the continued segregation of many secondary vocational and academic programs is very similar to the ideas expressed by Prosser and Sneed. The latest requirements of Perkins III bring us full circle to the issue of "theoretical" vs. "practical" knowledge. The accountability aspect of Perkins III reinforces teaching academic skills through vocational education as a process of using "practical" learning environments to assist students in acquiring "theoretical" knowledge. This approach to vocational education might be viewed as the realization of John Dewey's vision of "education through occupations."

The current widespread attention and focus on testing and accountability (in academic subjects) in combination with the accountability provisions in Perkins III legislation sets the stage for significant changes to the mission of career and technical education programs. Along with this unique opportunity, though, is the challenge to positively shape the mission of career/technical education while also responding to the demands for greater accountability in academic subjects. Will this emphasis on accountability and integration be powerful enough to alter the mission and direction of high school education and more specifically the mission of vocational or career/technical education? Will the alterations be positive? History illustrates the influence that outside forces have had on the shaping of career and technical education programs at the national and local levels. The high-stakes testing and accountability movements have the potential to influence the direction of high school programs for many years.

The following section of the literature review traces the evolution of the accountability movement from the early standardized testing of students in the nineteenth century through the current high-stakes testing initiative. Specific attention is given to

issues surrounding the high-stakes testing movement with the potential to influence the future mission and operation of career and technical education programs in Maryland and similar states.

Impact of High–Stakes Assessments on High Schools

Future reports about public education in the first decade of the twenty-first century will certainly emphasize the obsession to test student achievement of specific objectives and to hold educators and schools accountable for student learning. It is difficult to enter into a discussion, read an educational journal, attend an educational conference, or even read daily newspapers without noting references to high-stakes testing and accountability for student learning. The practice of implementing high-stakes assessments to determine student accountability for learning is a driving force behind much current educational policy (Corbett & Wilson, 1989; Natriello & Pallas, 1999). Madaus and Clarke (2001) adeptly describe the status of high-stakes assessments as follows: “It’s a bull market for high-stakes testing programs in education, far surpassing the bull market days of minimum competency testing of the early 70’s ... These high-stakes testing programs will not go away. If anything, they will become more important as policy tools and societal signaling devices” (p.1).

High-Stakes Defined

The term “high-stakes” is widely used in discussions of testing students for accountability purposes and numerous definitions for “high-stakes” abound. The definition given by Amrein and Berliner (2002) is clear and to the point: “High stakes

tests are tests from which results are used to make significant educational decisions about schools, teachers, administrators, and students. High-stakes testing policies have consequences for schools, for teachers, and students” (p.1). Likewise, the American Educational Research Association (2000) states: “Certain uses of achievement test results are termed ‘high-stakes’ if they carry serious consequences for students or for educators” (p.1). In a U.S. Department of Education Resource Guide, *The Use of Tests as Part of High-Stakes Decision-Making for Students* (2000), consequences are again mentioned:

‘High-stakes’ decisions refer to decisions with important consequences for individual students... Examples of high-stakes decisions affecting students include: student placement in gifted and talented programs or in programs serving students with limited-English proficiency; determinations of disability and eligibility to receive special education services; student promotion from one grade level to another; graduation from high school and diploma awards. (p.2)

In a Mid-Continent Research for Education and Learning (MREL) policy brief on *High-Stakes Testing: Trends and Issues*, Anne Lewis (2000) states:

High-stakes testing, however, has special characteristics. In general, the term refers to any assessment used for accountability with significant consequences. For students that means test results that lead to very important decisions – promotion/ retention, access to specific programs, or qualification for a high school diploma and special honors diplomas. (p.4)

FairTest (2002), known for its oppositional stance to testing, refers to tests as “high-stakes” when:

They are used to make major decisions about a student, such as high school graduation or grade promotion. To be high-stakes, a test has to be very important in the decision process or be able to override other information (for example, a student does not graduate if she/he does not pass the test regardless of how well she/he did in school. (p.1)

Although stated differently, the definitions listed above indicate the importance of “high-stakes” tests to schools, educators, and especially to students. Significant consequences regarding student futures are determined as the result of “high-stakes” tests; for that reason alone, attention to the impact of high-stakes testing programs cannot be avoided. Technical educators cannot ignore the far-reaching influence of the current obsession for testing. The accountability movement, coupled with the testing of students’ attainment of specific academic skills will make a mark on numerous aspects of high school programs including vocational technical education programs. The history of testing in U.S. schools demonstrates the scope and potential magnitude of these accountability policies on secondary schools programs.

Background of Testing

Early Testing

Early testing of high school students occurred through individual college entrance exams administered to select groups of students with the means and desire to attend these universities. The first state-wide testing program of the general population of students

occurred in 1865 with the implementation of the New York Regents Examination to ensure universal standards for all state schools. Eighth grade graduation tests were introduced in New York in the early 1900's, with the results being used to hold schools accountable for student performance (Beck, 1997).

In addition to holding schools and students accountable, early testing policies sought to track students into specific educational programs. During the 1920's more than 2 million school children took IQ tests for tracking purposes, as the nations schools responded to recommendations from the Cardinal Principles of education and the social efficiency movement. Many of the IQ tests were culturally and racially biased and could be considered "high-stakes" as the results were used to place students into separate and often unequal educational programs (Durbin, 2002; Ravitch, 1995). Both intelligence and achievement tests became popular tools during the 1920's for sorting students according to their tested abilities.

Not long after the proliferation of intelligence tests for tracking purposes, the first Scholastic Aptitude Test (SAT) was given in 1926 to over 8000 students. The SAT formally took the place of the traditional written college entrance examinations after the Second World War. The SAT, like the intelligence tests of the twenties, claimed to test the innate ability of students or what students were capable of doing, as opposed to testing what students knew or had learned.

Although not an intended purpose of the SAT, its universal acceptance as an indicator of student achievement became an issue in the 1970's when the College Board made it known that scores on the test had consistently fallen since 1963. While it was determined that a portion of the decline was due to the increased numbers of test takers

with more diverse ability levels, other reasons pointed to a decline in the quality of certain aspects of public education, such as the “dilution of the academic curriculum, lower enrollments in advanced courses, social promotion, less assignment of homework, and grade inflation” (Ravitch, 1995, p.179). Evidence of wide-spread declines in scores began to pave the way for the 1983 report, *A Nation at Risk*, and the subsequent criticism of public schools.

Mandated Testing

The Elementary and Secondary Education Act (ESEA) of 1965, made regular standardized testing mandatory in order for schools to receive federal Title I funds. Although the law did not require the testing of all students, it did dramatically expand the use of standardized testing in schools. The use of commercially prepared national standardized testing programs proliferated during this era, virtually relieving states and local school systems of establishing individual academic standards (Ravitch, 1995). Although standardized testing proliferated throughout the sixties and seventies, the impact of testing on students was minimal. “Because no sanctions were associated with test scores and important decisions about schools, teachers, and students were not linked to performance on these tests: the tests of the 1960’s and early 1970’s were low-stakes” (Beck, 1997, p.22).

The next phase of mandated testing came in the form of minimum competency testing (MCT), along with numerous states raising the stakes for students and schools. Beck (1997) reports that 12 states had minimum competency testing in 1976, 32 states had implemented testing requirements by 1981, and by the mid-1980’s 33 states had mandated some form of minimum competency testing. Minimum competency testing

programs evolved from the growing belief that the achievement of United States' students was falling behind students in other countries (Amrein & Berliner, 2002a). Florida was one of the first states to implement MCT requirements for students to pass in order to receive a high school diploma; however Florida's early testing program was postponed when the scores stopped increasing and dropout rates for minorities and students from low socioeconomic background increased (Amrein & Berliner, 2002a).

Florida was not alone in early MCT implementation. In a 1987 study of MCT programs in Maryland and Pennsylvania, Corbett and Wilson describe the impact of MCT school programs, specifically when testing is coupled with high-stakes consequences. The MCT programs in the two states had different intents and requirements, but ultimately each impacted numerous aspects of the schools in their states. Pennsylvania's tests were primarily a diagnostic tool used to determine remediation needs of students, with no consequences attached for performance results. Maryland, on the other hand, developed a MCT program tied to graduation requirements. Pennsylvania students took tests in language and math to "identify students needing additional classroom instruction who may have been overlooked by other means" (Corbett & Wilson, 1989, p.2). Whereas students in Maryland were required to pass four functional skill tests in reading, writing, math, and citizenship in order to receive a high school diploma.

There were several other differences in the programs: Pennsylvania students were tested in third, fifth, and eighth grade; Maryland students were tested in ninth grade. Pennsylvania schools received additional money for remediation; Maryland schools received no additional state funds (Corbett & Wilson, 1989, p.3). Although the tests were

for minimum competency skills, the stakes were high for students in Maryland due to the graduation requirement; in Pennsylvania the stakes began low but were raised as a result of the Chief State School Officer (CSSO) releasing school district score rankings to the Press. Although the Pennsylvania CSSO withdrew the rankings “due to the furor surrounding them” (Corbett & Wilson, p.30), the act significantly raised the stakes associated with Pennsylvania’s MCT requirements. Corbett and Wilson report: “The change can be described as one from long-term focus to a short-term one, from using the tests as one indicator among many to treating the next set of test results as the most important outcome of schooling” (1989, p.23).

The testing process dramatically changed how the teachers viewed their work and principals organized the school year in both Pennsylvania and Maryland. Teachers reported “there was a decreased reliance on their professional judgment in instructional matters, increased time demands, more staff reassignments, greater pressure, more paper work, and heightened concern about liability” (p.25). In both states the emphasis on improving test scores was so great that it brought about “almost ‘game-like’ ways to increase the test scores... and many of the negative behaviors associated with ‘teaching to the test’ thus emerged” (p.24). Referencing both Pennsylvania and Maryland, the Corbett and Wilson report observed that “states have begun to use tests as the policy to try to spur improvements” (p.4) and the consequences of these efforts were likely to be significant for students, teachers, and schools.

Impact of High-Stakes

State Testing Programs

While MCT programs primarily tested low-level academic or functional skills, they set the stage for future high-stakes graduation assessments. In one of the most comprehensive studies conducted on high-stakes achievement and graduation tests, Audrey L. Amrein and David C. Berliner (2002) of Arizona State University identified 18 states with high school graduation exams that students must pass in order to graduate from high school; 25 states offered financial rewards for improvement and 25 states exercised the power to close, reconstitute, or take over low performing schools. Eight states rewarded teachers for high test scores, 17 states could penalize or dismiss teachers for low scores, and six states awarded special diplomas or scholarships to students with high scores.

A major purpose of their research was to “assess whether academic achievement has improved after the introduction of high school graduation tests” (Amrein & Berliner, 2002b, p.2). Acknowledging that scores on state administered tests routinely increase after teachers become accustomed to preparing students for the exams, Amrein and Berliner focused on nationally recognized measures of student improvement – notably the American College Test (ACT), the Scholastic Aptitude Test (SAT), and Advanced Placement (AP) class tests. On comparisons of statewide performance against national trends, 67 percent of states had lower ACT and SAT scores, and 57 percent of states had lower AP performance after implementation of high-stakes testing. Their analysis suggests “that there is inadequate evidence to support the proposition that high-stakes

tests and high school graduation exams increase student achievement” (Amrein & Berliner, 2002b, p.57).

In a related study of 16 of the 18 states with required graduation tests, Amrein and Berlin suggest that the effects of high-stakes graduation testing may not be benign; rather, such testing may have “unintended and negative consequences” for students. The results of their investigation indicated that “high school graduation exams increase dropout rates, decrease high school graduation rates, and increase the rates by which students enroll in GED programs” (p. 47, 48). To the authors of the study, these results provide credibility to critics who worry about the harmful effects that high-stakes graduation requirements might have on low performing students and students from socially disadvantaged backgrounds. The study’s controversial conclusions have received much attention in the educational community.

Amrein and Berliner’s study has been criticized for its methodology and their interpretation of results. For example, in a February 5, 2003, *Education Week* commentary, Lawrence Steinberg questioned Amrein and Berliner’s findings concerning declining student achievement: “I don’t place much credence in these results ... because they too, are unlikely to be statistically significant” (p.34). Steinberg further comments: “a sensible reading of the evidence to date suggests that high-stakes testing so far has neither had the dramatic beneficial effects hoped for by its proponents nor the catastrophic ones feared by its detractors” (p.34). Amrein and Berliner’s research methodology and conclusions are also criticized by Margaret E. Raymond and Eric A. Hanushek (2003) for comparing student academic achievement to the national average

test scores on the NAESP. The researchers propose that a better comparison may have been made using states without accountability systems.

Even if these criticisms are warranted, Amrein and Berlin's conclusions are not without precedence. Other researchers using other methodologies and data have identified similar consequences associated with graduation related testing policies. For example, Clarke, Haney and Madaus (2000) investigated retention, drop out and completion rates in states with graduation tests in the early nineties, including Florida and Texas, two of the leading states in high-stakes testing. They arrived at a conclusion very similar to Amrein and Berliner: "Our conclusion is that high-stakes testing programs are linked to decreased rates of high school completion" (p.3).

Clarke, Haney, & Madaus also share concerns with the critics of graduation testing that fear the impact of high-stakes policies may differentially affect low-performing students and students from different social backgrounds. In investigating this possibility, they examined the relationship between completion rates, student GPA, student characteristics, and student performance on graduation tests in Florida and Texas. In Florida, students with borderline to average grades (in the range of 1.5 to 2.5 on a 4-point scale) were most likely to drop out of school if they failed the state's graduation test on the first try; in Texas, Black and Hispanic students were three times more likely to drop out after failing a graduation test than were white students (this was true even after controlling for socio-economic status, academic track, language program and school quality).

Texas Improvements: Fact or Fiction

The high-stakes testing initiative in Texas is well established, though somewhat controversial. In 1984, shortly after the release of “A Nation at Risk,” a commission headed by Texas billionaire H. Ross Perot recommended sweeping education reforms including, “an accountability system tied to student passage of a standardized test” (Toenjes, Dworkin, Lorence & Hill, 2000, p.2). The Texas Assessment of Academic Skills (TAAS) eventually led to the 1993-94 requirements for tenth grade students to pass reading, mathematics and writing tests in order to graduate from high school. As with many large-scale mandated testing programs, low initial passing rates were followed by significant gains in scores (Natriello, 1999). In 1994, 55.6 percent of students passed, with the percentage increasing to 78.3 percent by 1999. In fact, the gains were so dramatic that the results of this accountability program have been dubbed “The Texas Miracle in Education.” The results are extraordinary and have received much attention, both skeptical and supportive.

Walt Haney (2000), a major critic of the “The Texas Miracle,” brings many of the reported gains into question. While a twenty percent increase occurred in students passing the test between 1994 and 1997, the passing rate for the Texas College Reading Test declined from 65.2 percent to 43.3 percent during the same time period. SAT scores did not improve, nor did NAEP scores confirm the dramatic increases observed on the TAAS (Haney, 2000). A more likely explanation for the “Texas Miracle” Haney argues is that increasingly larger proportions of low-achieving students were excluded from taking the tests. He notes that the number of identified special education students in Texas nearly doubled between 1994 and 1998. Moreover, “by the late 1990’s, nearly 30%

of Black and Hispanic students were ‘failing’ grade nine” (p.2), a rate almost twice as high as the rate for white students. Since accountability tests were administered to tenth grade students, this practice prohibited large groups of minority students from taking the tests. The statistics also revealed a significant increase in the number of students taking the GED test in the mid-nineties to avoid the Texas accountability tests (Haney, 2000).

Linda McNeil and Angela Valenzuela (2000) join Walt Haney in questioning the legitimacy of the “Texas Miracle.” Whereas Haney bases his conclusions on careful analysis of testing and demographic data, McNeil and Valenzuela conducted extensive fieldwork over a ten year period involving hundreds of Texas public school teachers from a variety of school settings and subject areas. The conclusions they make regarding the effects of TAAS, “represent strong persistent trends emerging from the data” (p.2), not assumptions based on isolated cases. McNeil’s and Valenzuela’s analysis reveal “that behind the rhetoric of test scores are a growing set of classroom practices in which test-prep activities are usurping a substantive curriculum” (p.20). These activities are more common at schools where administrator pay is tied to test scores and in schools with lower scores, typically where poor and minority students attend.

McNeil and Valenzuela did not focus on the technical aspects of the massive testing program; instead, they looked at the “direct negative impact that this accountability system is having on the nation’s most economically disadvantaged, minority children” (p.4). In summarizing the results of their fieldwork, the researchers conclude:

- The TAAS system of testing reduces the quality of curriculum.

- The TAAS system distorts educational expenditures, diverting scarce instructional dollars away from such high quality curricular resources as laboratory supplies and books toward test-prep materials and activities of limited instructional value.
- TAAS provokes instruction that is aimed at the lowest level of skills and information, and it crowds out other forms of learning particularly for poor and minority students.
- TAAS-based teaching and test-prep violates what is known about how children learn.
- The TAAS is divorced from children's experience and culture.
- The TAAS is imposing exit measures that are particularly inappropriate for LEP (Limited English-Proficient) students.
- TAAS is widening the gap between the education of children in Texas' poorest (historically low-performing) schools and that which is available to more privileged children. (p.3)

McNeil and Valenzuela also stress the need for further research into the effects of TAAS and other state-mandated testing programs on the “curriculum in school subjects, on children's capacities to learn and their sense of themselves as learners, on teachers' work” and on teacher exit ...” (p.21), rather than further studies based on test scores and data. They contend that enough research has been focused on test results, student scores, test validity and other numerical measures conducted by statisticians, and we now need to look at high-stakes testing from the perspective of the impact on schools, teachers, and students.

While Haney, McNeil, Valenzuela, and others are critical of TAAS' effectiveness and impact on students, others have portrayed the "Texas Miracle" more positively. Toenjes, Dworkin, Lorence, and Hill (2000) support the Texas program and directly refute many of Walt Haney's criticisms. Their report, *The Lone Star Gamble: High Stakes Testing, Accountability, and Student Achievement in Texas and Houston*, contests the claim that increases in special education enrollment affected passing rates or that ninth grade retention significantly affected test results. The authors also dispute Haney's data concerning the consequences of increased dropout rates, stating:

The net result is therefore a wash. In other words, none of the twenty-point increase in grade ten passing rates has been accounted for by the net effects of changes in special education and dropout behavior. So the 'Texas Miracle Education' is not a myth, nor has fraud been perpetrated by the State of Texas. This analysis flatly contradicts Dr. Haney's assertion that Texas' accountability system directly causes an increase in dropouts which in turn boosts test scores (Toenjes et al. p.9, 10).

Comparing *The Lone Star Gamble* to Walt Haney's report demonstrates how distinctly different conclusions about a testing program have been reached after analyzing the same data, and also substantiates Linda McNeil's and Angela Valenzuela's recommendation for future research focusing on the impact of testing programs on school programs and students rather than on analyzing test results.

Summary of the Impacts of High-Stakes Testing

As these examples demonstrate, there is no absence of controversy regarding the impact of high-stakes testing on students and schools. The literature includes numerous claims and counter-claims with very little resolution. In this section, I review five major concerns about the possible effects of high-stakes testing on students, teachers, curriculum and schools. While there is no consensus on the validity of these concerns, they represent major themes in the literature and provide a framework by which to review and design research. The major concerns are:

- Increases in dropout rates and grade retention.
- A widening of the achievement gap.
- Increased levels of stress on students and teachers.
- A narrowing of the curriculum, including an increase in test-prep activities.
- Possible impact on non-tested subject areas.

An overview of each identified impact follows.

Increases in Dropout Rate and Grade Retention

In December 2002, the *American School Board Journal* polled its readers with the following question, “Will high-stakes testing significantly increase dropout rates?” (2003, p.4), with seventy-five percent of the readers responding, “Yes”. The responses to the question included testimonies from representatives in states already involved in high-stakes testing: Indiana, California, Kentucky, Virginia, Illinois, Michigan, and South Carolina. A Virginia board member shared, “Of course increased high-stakes testing will increase dropout rates, especially for students who are identified as seriously at risk for

not graduating. These are precisely the students we need to support so they can achieve a high school diploma” (p.4). On the other hand an Illinois board member questions: “Should we stop high-stakes testing because some testing critics think these tests will increase dropout rates? Of course not, but we should start offering the GED option in our high schools” (p.4).

Although the impact of high-stakes testing on dropout rates is controversial, there is sufficient evidence to warrant careful consideration of this possibility. In an ethnographic study, Jeffrey William Durbin, a researcher/teacher who became immersed in the testing culture of a Chicago high school reports that grade retention caused by failing achievement tests increases the likelihood for students to dropout prior to graduation.

The impact of having been forced to attend summer school, retention, demotion, and dropping out cannot be overemphasized. Those behind the accountability movement, who professed a desire to leave no child behind by using standardized test scores as indicators of student achievement, may have caused more students to drop out. (2002, p.115)

Durbin also speculated that there was a finite amount of time when students would remain in high school without earning a diploma, and after that they would dropout. Failing only one test and being prohibited from entering the next grade, increased the likelihood of a student dropping out of high school dramatically. The high school where he conducted the study had a dropout rate of over 30 percent, as compared to 16 percent rate for the entire Chicago School District.

Debra Meyer (2002) concurs with Durbin's assessment of retention contributing to dropout tendencies in a *Phi Delta Kappan* article where she stresses the economic importance to both the student and to society of having every child earn a high school diploma. "Test mandated retention policies have similar chilling effects. Every time we hold a child back, we are substantially reducing the odds that that child will graduate at any time in the future... The most significant impact of the new standardization is already evident in the increased dropout rate in state after state" (p.196).

Other sources also warn that high-stakes testing may cause an increase in dropout rates. Monty Neil (2003), in the *American School Board Journal* reviews research on high-stakes testing, commenting: "Another documented consequence of high-stakes testing is that more students will be retained a grade or drop out. Compared with similar students who are promoted, those who are held back do not improve academically, are emotionally damaged by retention, suffer loss of interest in school and self-esteem, and are more likely to drop out" (p.20). Alfie Kohn (2001), a known opponent of standardized achievement tests and high-stakes testing, shares his concerns about the impact of the current testing phenomena: "To make students repeat a grade or to deny them diplomas on the basis of a single exam is unconscionable. Yet, at this writing, about half of the states are either doing so or planning to do so" (p.352).

Statistics concerning the high school completion rates of Boston high school students provided by Tony Wagner (2003) suggest potentially negative consequences of the Massachusetts Comprehensive Assessment System (MCAS). While 4900 students entered the ninth grade in Boston public high schools, nearly one-third dropped out prior to reaching twelfth grade, leaving 3400 students. Included in the 3400 students were 1648

seniors who have yet to pass the tenth grade MCAS test required to graduate, despite attempting it several times. Unless students pass the test, that they have already failed multiple times, or the requirement suddenly changes, half of these remaining students may fail to graduate from Boston's public high schools. Wagner argues that Boston's dilemma is similar to that faced by countless urban school districts where high-stakes testing requirements have become policy.

Finally, the effect of high-stakes testing on dropout rates is discussed in the 1999 text, *High Stakes: Testing for Tracking, Promotion, and Graduation*, edited by Jay Heubert and Robert Hauser and coordinated by the National Research Council's Committee on Appropriate Test Use. The text reviews numerous studies of high-stakes testing and provides guidance about the use of high-stakes tests by educators and policy makers. Citing a 1989 study by Kreitzer, Madaus, and Haney, the Committee reports that "9 out of 10 states with the highest dropout rates had high-stakes graduation tests, and none of the states with low dropout rates used tests for high-stakes purposes" (p.174). The authors of *High Stakes: Testing for Tracking, Promotion, and Graduation* pose an interesting question, asking "do high-stakes tests cause students to drop out, or do high dropout rates spur policy makers to adopt high-stakes testing programs in the first place" (p.174)? While the committee does not provide a definitive answer, the committee concludes that the possibility of high-stakes tests causing students to drop out is worthy of further investigation.

A Widening of the Achievement Gap

It is ironic that while one of the foremost reasons for implementing high-stakes testing programs is to increase the achievement levels of those students traditionally

identified with lower success, thus leveling the playing field for these students, high-stakes testing programs may actually perpetuate the gap between these students and higher achieving students, or education's haves and have-nots (Cuban, 2001; Daniels, 2002; Haney, 2002; Durbin, 2002; Natriello & Pallas, 1999; Klein, Hamilton, McCaffrey & Stecher, 2000; Madaus & Clarke, 2001; Howe, 2000; Wagner, 2003). The group traditionally identified as low achievers include minority, lower-socioeconomic, and Limited English Proficient students.

Implementing high-stakes assessments is viewed as a strategy to increase the achievement level of traditionally low achieving students while also decreasing the "gap" between these students and those that traditionally succeed; however, Daniels (2002) found that high school teachers saw the high-stakes graduation tests as "barriers" to ESL students' opportunity to graduate from high school (one of the groups that testing is meant to help). And In August 2001, New York Assemblyman Steven Sanders (2000) warned of the "terrible consequences [of high-stakes testing] for many of our high school seniors, especially for recent immigrants and those pursuing vocational careers" (p.1). Daniels also shares Sanders concerns for LEP students who could be gifted in math, science, or history but would be denied a high school diploma because of a lack of fluency in English.

McNiel and Valenzuela (2000) describe several harmful effects of high-stakes assessments on disadvantaged and minority children in Texas. They also report that the TAAS is "particularly inappropriate" for LEP students. This is a legitimate concern, considering that, while many LEP students may possess the requisite abilities to pass the tests, they may not receive appropriate instruction or accommodation due to the emphasis

on learning English. In Texas, the ESL students spent much of their time in classes designed to develop English proficiency at the expense of courses needed to acquire the knowledge and skills to pass the high-stakes tests. When ESL students were enrolled in subject matter courses, they were often remedial and “rarely, if ever, honors or college bound” (p.17).

Walt Haney (2000), a critic of the Texas accountability policies argues that apparent decreases in the achievement gap between white and nonwhite students (specifically Black and Hispanic students) may have been due to policies that barred low-achieving minority students from participating in testing. From 1994 to 1998, the gaps for passing the tenth grade tests narrowed from 38 to 30 percentage points among White students and Black students, and from 32 to 26 percentage points among White and Hispanic students. Haney (2000) attributes these reductions in the gap to the large numbers of minority students “missing” from the tenth grade, with close to thirty percent of Black and Hispanic students not promoted from ninth to tenth grade in the late 1990’s. A 2000 WestEd policy brief also questions the statistics for the minority achievement gap in Texas, urging that special attention be given to the impact of high-stakes testing on “...special education, English language learners, low-income, and students of color” (Ananda & Rabinowitz, 2000, p.4). The brief further notes that the failure rate among African American and Latino students increased disproportionately after the implementation of high-stakes testing in states like Florida and Texas (Ananda & Rabinowitz).

Increased Levels of Stress

Assessments of any nature create anxiety, but when high-stakes decisions are attached to test results, stress levels escalate for the test taker as well as for the teacher preparing the students for the assessment (Koretz & Others, 1996). The amount of stress associated with adequately preparing students for high-stakes assessments is compounded for teachers according to the severity of the consequences for failure (Daniels, 2002; Beck, 1997; Koretz et al., 1996; Kohn, 2000; Landman, 2000). In fact, Alfie Kohn, while relying primarily on anecdotal data, states “Many educators are leaving the field because of what is being done to schools in the name of ‘accountability’ and tougher standards (Kohn, 2000, p.3). The situation intensifies when rewards or punishments for teachers are attached to student test scores. Writing in the Winter 2000 *State Education Leader*, Michael Allen (2000) concurs with the issue of pressure on teachers increasing when “pay increases, job retention or school reconstitution are attached to student results” (p.69).

A review of literature on testing by Elizabeth Beck (1997) found that “increased pressure is the predominant effect of non-classroom testing programs on teachers” (p. 46). After completing a study of 350 administrators, 753 teachers, and 524 counselors in Indiana’s public high schools, Beck’s survey results indicate: 70 percent of the respondents believe teachers and administrators will experience increased stress due to the enactment of graduation tests, 75 percent see graduation tests bringing increased time demands on teachers and administrators, and 85 percent agree that teachers will be subjected to increased pressure to improve student performance.

In his experience as a classroom teacher involved in the Chicago testing program, Durbin (2002), experienced first-hand the personal stress created by the pressure to increase student scores. He also witnessed even more pressure on the administration: “To them, especially the principal, it meant more probation (for the school) and accountability meetings, more documentation, more visits from outsiders, and an ongoing struggle to keep her job” (p.146). Durbin reports several acts of resistance to assessments and the high-stakes attached to the tests. For example, “teachers resisted by refusing to implement test preparation activities and reading strategies into their classroom. Teachers also resisted by cheating and quitting...Administrators resisted by manipulating the test pool in a variety of ways” (p.150). Because Durbin was a teacher at the school, he had first-hand knowledge of the stress accompanying testing. Durbin described his school as a test scores factory that had been put on probation, provided intervention, re-engineered, but with an enormous amount of pressure on everyone to raise test scores.

In a case study conducted at four Massachusetts high schools comparing how history/social science departments were responding to the Massachusetts Comprehensive Assessment System (MCAS) test, Jonathan Landman (2000) reports on teachers experiencing stress related to the high-stakes testing process. Interactions between teachers and the administration were traditionally top-down, and the teachers resented several initiatives designed to pressure teachers into an increased emphasis on preparing students for the tests. District administrators felt pressure for schools to demonstrate success on the MCAS tests and in turn sent the message to department heads. Teachers did not believe that the district administrators fully understood the problems associated

with the testing system, and because of the high-stakes of MCAS, felt “tremendous pressure to focus on preparing students for test success” (p.68).

A study involving a random sampling of eighth-grade mathematics teachers and principals in the state of Kentucky showed that with regard to the Kentucky Instructional Results Information System (KIRIS), teachers and principals noted that the implementation of the policy created major challenges for them (Koretz et al., 1996). About seventy-five percent of the principals responded that KIRIS “imposed more than a minor burden on their schools” (p.51). The teachers reported that KIRIS had caused “high stress” and “has put them under ‘undue’ pressure” (p.51). Teachers also stated that “teacher morale in their schools is low and has been harmed by KIRIS” (p.51). These studies demonstrate that while high-stakes testing initiatives are the product of people and organizations far removed from the classroom, the ultimate implementation, and thus the pressure and stress of preparing students for success falls on the classroom teacher.

When discussing the increased stress placed on teachers as a result of mandated testing programs, it is notable that this may indeed be an unspoken, intended motive for implementing a high-stakes testing program. In a 1997 address at a convention of the American Educational Research Council (AERC), Michigan State Professor William A. Mehrens acknowledges: high stakes assessments increase teacher stress and lower teacher morale. This seems unfortunate to me, but may make others happy” (1998, p.22).

Narrowing of the Curriculum

In discussions of high-stakes testing, terms such as “narrowing the curriculum”, “dumbing-down instruction” and “test-prepping” continually surface. When the foremost goal of school becomes student mastery of predetermined learning outcomes and success

on mandated tests, as is the case in a high-stakes testing environment, the logical consequence is to focus instruction on preparing students for the test (Ediger, 2001). Any other instructional priority implies that educators are not taking the assessments seriously or are not concerned about student success on the assessments. If schools face sanctions for low levels of achievement, the pressure is enormous (Ananda & Rabinowitz, 2000; Neil, 2003). But even if the practice of narrowing the curriculum and intensifying instructional efforts succeeds in raising test scores, success may be costly, especially if students are unprepared to pursue more advanced coursework in later grades (Ananda & Rabinowitz), 2000).

While many of the statements concerning the perceived narrowing of the curriculum reference anecdotal information, Jonathan Landman's (2000) conclusions after completing his study in Massachusetts are based on teachers' and administrators' first-hand experiences with high-stakes testing. He found "ample evidence" that the state was moving toward "over-control of the complex domain of the classroom with unintended consequences" (p. 64). He also noted that while the school was moving toward "successful articulation" with state policies the depth and range of educational opportunities within the classroom were being severely restricted.

The framework and test were simultaneously threatening to undercut teachers' flexibility to respond to their students' needs, threatening to undermine Marwood's teachers' focus on higher-order skills, and making it difficult for department members to provide the varied, active deeper learning experiences which they (and the national texts) value. (p.64)

In Landman's study the successful implementation of high-stakes testing came at the cost of the curriculum and the depth of educational opportunities that teachers could provide to students.

The strongest objections to high-stakes testing come from critics who believe that it causes educators to substitute test preparation for substantial parts of the traditional curriculum. "If something is not likely to be on the test" Nancy Meier writes, "the official word is, don't teach it... Because the tests now claim to measure exactly what should be taught, it is far easier (for better or worse) to script teaching down to a lesson for every day of the year, each corresponding to a different set of test questions" (Meier, 2002, p.195). Although such a focus might be laudable if it included quality instruction about valuable subject knowledge, critics fear that the resulting instruction amounts to little more than the administration and review of practice tests. In his assessment of high-stakes testing, Alfie Kohn observed:

The intellectual life is being squeezed out of our schools as they are transformed into what are essentially giant test-prep centers. The situation is most egregious, and the damage most pronounced, where high-stakes are attached to the tests.
(Kohn, 2001, p. 350)

Teachers with direct experience in the classroom and researchers who have studied the implementation of high-stakes testing echo Kohn's concerns.

Jeffrey Durbin (2002) through his work in Chicago documents the huge amounts of class time dedicated to test preparation and the devotion of almost all staff development to training teachers in testing strategies and in how to teach reading in the classroom. Lisa Daniels (2002), through her study of testing in Texas, Massachusetts, and

New York, finds that the “omnipresence of the test” (p.199) causes the state tests to be the focus of schools and the curriculum. She reports on using actual exams as “curricular teaching tools” (p.131) and schools purchasing “curricular materials designed to model the state test” (p.131) as commonplace occurrences in the schools she visited. She also saw teachers as less likely to design their own lessons and classroom activities or to attempt to address individual student needs, as a result of the belief that “there is too much at stake to risk not teaching to the test” (p.111).

Not everyone, however, objects to a narrowing of the curriculum or even to an emphasis on test preparation in schools. One school of thought indicates that the focus on assessments can bring positive order, structure and coherence to the classroom and curriculum, forcing teachers to devote more time to “the basics,” by concentrating on those items included in state learning goals (Corbett & Wilson, 1989; Heubert & Hauser, 1999; Daniels, 2002; Finn, 1997; Scheisman, 1999). As Daniels reported in her study of testing in Texas, a Dean of Instruction applauded the emphasis on test preparation in the state arguing “that teachers should, in fact be teaching the test because the test is aligned with state curriculum objectives which are worthy and necessary for students to learn” (2002, p.112). From this perspective, what critics fear is that the pressure to prepare students for success on state-mandated assessments takes over the classroom, drives the curriculum, removes all academic freedom, and takes decision making from teachers (Kohn, 2000; Madaus & Clarke, 2001; Landham, 2000, Amrein & Berliner, 2002; Meier, 2002) may precisely be what proponents of high-stakes testing desire.

Possible Impact on Non-Tested Subjects

Just as high-stakes assessments are reported to influence the nature of instruction in tested classes by narrowing classroom teaching strategies, and encouraging test -prep activities; there is growing concern about the impact on non-tested subjects. The increased emphasis on the subject areas included in state testing programs has the potential to negatively impact non-tested classes (FairTest, 2002; McGinley, 2002; Cutshall, 2001; Hess & Brigham, 2000). The high-stakes consequences of testing programs create a hierarchy of importance for courses and subject areas, with “tested” courses and subject areas assuming a higher status level than “non-tested” courses and subject areas. Referencing elementary schools, Amrein and Berliner (2002) report that “high-stakes tests are directing what subject and content areas are being taught in schools. Mathematics and language arts are the subjects most frequently tested; hence, science, social studies, and the arts are increasingly being pushed aside for subjects that matter – subjects included on high-stakes tests” (p.42). They also convey that the “other” subjects are only included when “time allows for deviations from the core or tested curriculum” (p.42).

Brian Stecher and Laura Hamilton (2002) also document that as a result of the “decrease in emphasis on subjects that are not tested” (p.48) and with the major emphasis on reading and mathematics, more of the school day is typically dedicated to these two subjects, leaving less time for other areas like science, social studies, music or art. The practice of focusing primarily on tested subjects narrows the overall experiences for students, possibly undermining students’ readiness for secondary school. According to the critics of high-stakes testing, the redirection of instruction in elementary and middle school is dramatically altering the school curriculum and the scheduling of coursework

for the school day, especially in schools that face progressively more severe sanctions for low test scores. Where states require graduation testing, a similar redirection of instruction is likely to occur.

Preparing students for success on academic high-stakes assessments is not an option for high school educators, it is a necessity, and the higher the stakes of the tests, the more schools will focus instruction on the tests (Amrein & Berliner, 2002; FairTest, 2002; Kohn, 2001). When high school diplomas hinge on test results, the pressure for student success is enormous, amplifying the concern of teachers and administrators that they adequately prepare students for graduation testing. Just as in elementary schools, this increased emphasis on tested or “core” subject areas for high school students can result in a decreased emphasis on, or even elimination of, opportunities in non-tested courses (Cutshall, 2001; Daniels, 2002; Durbin, 2002).

In his study of testing conducted in a Chicago high school, where large numbers of students repeatedly failed to achieve proficiency on a 10th grade reading test, Jeff Durbin (2002) cites numerous examples of teachers’ concern about an overemphasis on test preparation. One angry teacher said, “So we’re all supposed to be reading teachers?” (p.88). Another stated, “Oh. It’s all about reading and getting off probation” (p.88). The massive reading initiative at the school suffocated virtually all other programs and opportunities for students. In an attempt to raise reading test scores at the school, many activities that were not directly tied to teaching reading were eliminated. Students resented being required to enroll in extra reading classes, limiting the number of other courses they could take. This practice meant that some students were not able to meet all prescribed requirements for a diploma in four years. Vocational students were especially

hurt by the additional reading course requirement , as it prevented them from enrolling in the required courses to complete all vocational requirements during their last three years of school. Other students were not afforded the opportunity to take specific college prep courses, such as upper level foreign languages classes, advanced placement classes, or physics.

The school involved in this study is an extreme example of the pressure to prepare students to pass high-stakes tests, with test prep activities engulfing many aspects of the high school curriculum and thus eliminating numerous other valuable opportunities for students. As a result of all the time spent preparing students for the tests, “lost time” was a major concern of students and teachers at the school and was reflected in the numerous comments shared with Durbin throughout the study: “Lost time that students could have used to learn new things, teachers could have used to improve their teaching skills, and administrators could have used to develop curriculum and work with teachers...an enormous amount of time was lost to test preparation for everyone” (p.69, 70).

“Lost time” can also translate into missed opportunities for high school students in art, music, career and vocational, and other elective courses (Amrein & Berliner, 2002; Daggett, 2001; Kohn, 2001; Hess & Brigham, 2000). Van E. Cooley and Jianping Shen (2003) report: “Teachers under pressure from school boards and administrators now focus on what content is tested. Art, music, and other courses not tested have on occasion, been removed from the curriculum resulting in student victimization for short-term gains in standardized test results” (p.110). School officials are cutting back or eliminating electives for high school students, and other aspects of school programs not tested (Kohn, 2001). As noted, the higher the stakes, the more schools will focus on test

preparation; “what is not tested is not taught. Whole subjects may be dropped; e.g., science, social studies, art or physical education may be eliminated if only language arts and math are tested” (FairTest, 2002, p.2). Likely targets for elimination are subjects teaching skills not easily tested with paper and pencil multiple choice tests.

Deborah Meier (2002) concludes that standardized high-stakes testing initiatives do impact curriculum offerings in schools, suggesting that unless tests are developed and implemented for all subject areas, those curriculum areas not tested face the danger of being eliminated. Career and technology courses are among those facing possible negative consequences due to the demands of preparing for tests in academic subjects. Frederick Hess and Frederick Brigham (2000) share reports from teachers and administrators concerning limiting programs for the arts, physical education and vocational education after the implementation of a statewide test; in one example, they report a state superintendent of schools even considering moving arts courses to the weekend, eliminating vocational education, and making students responsible for their own physical education activities.

It is ironic that a reform initiative adamantly supported by big business may ultimately be responsible for reducing or even eliminating student opportunities in career oriented courses. “Yet today, career and technical education programs, which are designed to prepare students for the work place, are being pushed aside by programs designed to prepare students for the academic testing requirements” (Daggett, 2001, p.6). Unfortunately, these career and technical courses along with other untested subjects may very well provide students not achieving success on the tests their best chance to learn and acquire skills that will help them after high school. One of the challenges facing

policy makers and educators is to ensure that high-stakes graduation testing does not eliminate coursework and curricular programs that successfully serve low-achieving students, at least without providing meaningful alternatives for students and schools.

Conclusions and Reflections

It has taken over 100 years for the modern high school to evolve into the current structure that includes a diverse curriculum designed to meet the unique needs of a variety of students. The recent obsession for accountability and high-stakes testing of students has the potential to change this structure. If the emphasis on the tested or core subjects smothers other curriculum areas, as is anticipated by opponents of high-stakes testing, the structure of future high schools may look very different than our current model. Schedules and courses designed exclusively for success on mandated tests may successfully prepare students to pass high-stakes tests, without preparing students for success in life after high school.

While such earlier reforms as the Cardinal Principles were aimed at providing diverse experiences and keeping students in high school to receive high school diplomas (Tyack & Cuban, 1995), the current focus on accountability through high-stakes testing may produce the opposite results; students leaving high schools without diplomas or the valuable experiences gained from a variety of courses designed to help facilitate success in the world of work. The literature shows that high-stakes assessments are influencing schools in numerous ways, possibly even impacting the likelihood that all students in the United States complete high school and earn a state-certified high school diploma. The

expectation of modern culture that all students will earn a high school diploma may be in jeopardy if the current obsession with high-stakes testing continues.

High-stakes testing has the potential to become part of the “grammar of schooling” (Tyack & Cuban, 1995) as have other major reform initiatives of the past. Tyack and Cuban explain that reform initiatives are considered as part of the “grammar” when they become institutionalized in educational practice. Past examples include practices such as the graded school, the differentiation of secondary education, and the Carnegie unit. The widespread high-stakes testing movement also appears to have the support base needed to become institutionalized in modern education. Backed by business leaders, State Boards of Education, and politicians; and legitimized by the legal system through the decisions in Florida and Texas in *Debra P. v. Turlington*, (1981 & 1983), and *GI Forum v. Texas Education Agency* (2000), high-stakes testing may become a permanent aspect of modern education (Dorn, 2003).

While the magnitude of the influence of high-stakes testing on career and technical education is yet to be realized, the documented concerns of those currently involved in the assessment of students reveal the potential for its impact including the possibility of negative consequences for career and technical programs. History demonstrates how career and technical education programs have been shaped through the influence of a variety of external forces. The current passion for testing is driving high schools to dedicate a significant amount of time to test preparation and remediation: time that in many cases was previously allotted to special programs such as career and technical education. In addition to the missed time in programs, the testing initiative also has the potential to influence how the time students spend in these special programs is

utilized. This purpose of this study is to investigate the perceived challenges that the high-stakes testing program will pose to career and technical education in Maryland.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

Introduction

The overarching emphasis of this research was to determine the extent of the challenges that Maryland's high-stakes graduation testing program will present to high school career/technical education (CTE) programs. For the scope of this study, CTE programs are defined as a course of study resulting in at least four high school credits earned in the same career/technical program. Completing the four credit sequence in a state approved technical program allows students to satisfy one of the Maryland requirements to earn a high school diploma. Other pathways include satisfying the University of Maryland system entrance standards, which include two sequential years of a foreign language, or students may complete two course credits in an advanced technology field to earn a Maryland high school diploma. For the 2002-03 school year 26% of Maryland graduates qualified as CTE completers, and 41% of these completers also met University of Maryland system requirements, earning dual completer status (MSDE, 2003b).

With all Maryland high schools currently involved in preparing for and administering the four mandatory subject specific high school assessment tests (English I, Algebra/data analysis, Government, and Biology), a considerable amount of time and energy at the Maryland State Department of Education as well as at local schools is being dedicated to the testing program. The prominence and magnitude of high-stakes

assessments sets the stage for unanticipated consequences to other aspects of the comprehensive high school experience for students. This research investigated if this concentrated emphasis on the testing program is presenting challenges to other subject areas such as career/ technical education.

Design and Methodology

Research Questions

The research questions for this study are:

1. What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?
2. What are the responses to the challenges of the assessment program by schools representing the three different models of career/technical education in Maryland (comprehensive technical high schools with embedded career/technical programs, and technical centers)?

These questions were investigated at the Maryland State Department of Education and at the local district and school levels in Maryland.

Research Approach

The research questions were investigated utilizing qualitative research methodologies as an exploratory case study. Yin (1994) states: "The case study is preferred in examining contemporary events ... when the relevant behaviors cannot be manipulated" (p.8). The case study method was selected for this research because of the

“contemporary” status of the Maryland High School Assessment (HSA) Program, which was still in the developmental stage and because there was no intent to manipulate aspects of the policy or programs as part of the research design.

In his 1994 text, Yin also outlines the five components of research design for case studies:

1. a study’s questions,
2. its propositions, if any,
3. its unit(s) of analysis,
4. the logic linking the data to the propositions, and
5. the criteria for interpreting the findings. (p.20)

The study’s questions were presented at the beginning of this chapter. The remaining components of a case study are discussed next.

Propositions

Yin (1994) conveys that “some studies may have a legitimate purpose for not having any propositions,” (p.21) specifically exploratory studies. This case study is such a study.

High-stakes graduation testing is a new policy in Maryland. During the initial stages of the research, the Maryland State Department of Education had not established passing level scores, nor had the State Board of Education officially voted to implement passing the tests as a graduation requirement. Although the state is committed to implementing graduation testing, clear parameters for the policy have yet to emerge. Under these conditions, specifying propositions about the implementation or likely consequences of the policy is premature.

The questions for this research evolved as a result of the researcher's experience as a twelve-year technical high school principal and involvement in preparing students for the Maryland high school assessments. By employing an exploratory strategy, this study attempts to build on the practical experiences of the researcher to identify issues and themes that warrant future investigations using similar or alternative methodologies. While this exploratory cased study does not have a concrete set of propositions, a stated purpose is to determine if the pressure felt by local school system administrators to prepare students to do well on the state assessments will result in unintended challenges to untested subject areas, such as career/technical education, and lead to undesirable consequences for these programs.

Units of Analysis

The units of analysis for this research are the Maryland high school assessment program and career/technical education programs in Maryland, as represented by policy makers and educators participating in these programs. The relationship of these two entities is the focus of this case study. Several formats exist for the delivery of career/technical education in the over 200 high schools located in twenty-four separate school systems, including twenty-three counties and one large city school system in Maryland. To represent the different structures of career and technical education in Maryland, case sites were selected representing the three major delivery models of CTE programs. The majority of CTE programs in the twenty-three county school districts in Maryland are offered in one of the following formats:

- Comprehensive technical high schools, where students attend full-time for grades nine through twelve and take all courses, academic and technical.

These are typically magnet schools with students from a large geographical area, or the entire district attending. Students normally participate in all aspects of high school life, including clubs and athletics at these schools.

- Community high schools with a career/technical component, often located on campus in a separate wing of the school. This model is popular in school systems with a small number or only one high school in the district.
- Career/technical centers, where students attend part-time and attend a home high school part-time. This model includes schools for students in ninth through twelfth, tenth through twelfth, and only eleventh and twelfth grades. Career/ technical centers operate under a variety of schedule formats and typically offer only technical courses for students. Students participate in extracurricular activities and athletics at home high schools.

A primary focus of this analysis was on how different technical programs are responding to the implementation of high-stakes graduation testing in Maryland. To this end, the study gathered information from key informants who are in a position to describe how state and local programs view testing initiatives and the consequences for career/technical programs. Key informants were chosen based on the likelihood that they can provide information about (a) the state's beliefs about the goals of high-stakes graduation testing and (b) the responses of local educators in each of the three program formats for career/technical education in Maryland.

Linking the Data

There were no formal propositions about how high stakes graduation testing will influence career/technical education programs in the state subsequently there was no specific linking of data to hypotheses or speculations about how testing might influence programs. On the contrary, the design of the study utilized general questions to capture the range of responses and expectations associated with policy makers and educators involved in different aspects of secondary education in Maryland. By allowing individuals in key positions to reflect openly on their experiences and assumptions about high-stakes graduation testing in Maryland, this study sought to accomplish its major goals – namely to provide insight into the implementation of high-stakes graduation testing and how this emergent policy is influencing career/technical education in the state.

Interpreting the Findings

As recommended by Cresswell (1998), the data analysis stage of this research begins with a “detailed description of the case and its setting” (p.153). In this instance the “description” includes a review of current models for the delivery of career/technical education in Maryland and a description of each career/technical education program selected as sites for the follow-up interviews.

A “role-ordered matrix” was constructed for each interview question to assist in the interpretation of the interview responses. Matthew Miles and Michael Huberman (1994) explain that a role-ordered matrix “sorts data in its rows and columns that have been gathered from or about a certain set of ‘role occupants’ – data reflecting their views” (p.123). This display facilitated the cross-analysis of the interview responses of the various study participants. The matrix was organized by the various roles of the

subjects and also segregated by the type of CTE school model. This matrix facilitated a cross case-analysis of the study sites. Patton (1990) suggests that when a standardized open-ended interview approach is utilized “it is fairly easy to do cross case or cross-interview analysis for each question asked in the interview” (p.376). A comparison was made of the perceived challenges of the assessment program to career/technical education at the sites of the three different delivery models of career/technical education analyzed in this research. These findings were also contrasted with the responses of the personnel at the Maryland State Department of Education.

Yin (1994) recommends pattern-matching as “one of the most desirable strategies to use” (p.106) for case study analysis. While this method is particularly useful for explanatory case studies, it can also be used in exploratory case study research. Rather than comparing results to a previously stated proposition, pattern-matching in exploratory case studies “has been commonly cited as part of a hypothesis-generating process” (Yin, 1994, p.110). This strategy assisted in selecting the responses to use in constructing the role-ordered matrix. Utilizing the role-ordered matrix tables, a detailed analysis of the responses was developed to address the research questions and is included in chapter four and the appendix.

Yin also explains that the purpose for this type of research analysis for exploratory case studies is usually “not to conclude a study but to develop ideas for further study” (p.110). With the state assessment program in its infancy stages, opening doors for further research in this arena was an important aspect of this study

Research Procedures

This section provides an overview of the state's graduation testing program and describes procedures used to the select sites, select subjects within sites, and collect data. Specific information about the questions asked of each participant is also included.

Overview

The Maryland high school assessment program, given in January and May of each school year, includes tests in four subject areas, English, biology, algebra and government. Schools with semester-based block schedules administer the assessments in January and May, while schools with full year schedules give the tests only in May. At the time of the research, the State Board of Education was scheduled to vote during the summer of 2004 on making passing the assessments a requirement to earn a Maryland high school diploma. Perhaps as a result of observing the consequences of graduation testing requirements in other states, such as Virginia, Texas and Florida, Maryland officials were cautious in officially implementing the testing requirement. MSDE's plan at the time included making the assessments a graduation requirement for students entering ninth grade in the fall of 2005 (the graduating class of 2009).

Even though the tests were not yet graduation requirements, the testing program and the preparation continued as if passing the tests were mandatory. All students, including current seniors, enrolled in tested courses were required to take the assessments. Even though passing the tests was not a graduation requirement, beginning with the graduating class of 2003 students not taking the assessments were not to be awarded diplomas. Individual student scores were placed on permanent transcripts and school scores were available on MSDE websites and also printed in local newspapers.

Much of what was occurring in Maryland high schools centered around preparing students for success on the high school assessments. Staff development for teachers focused on strategies to help students pass the assessments. The culture of the accountability testing permeated high schools even before the assessments became graduation requirements.

MSDE Interviews

Interviews were conducted with two lead personnel in the Maryland State Department of Education (MSDE) in the Division of Assessment and the Division of Career and Technical Education. The two individuals were selected to provide key information in the areas of high school assessments and career and technical education. In the Division of planning, Results and Information Management, the Assistant State Superintendent who serves as the leader of this department was interviewed. The Assistant Superintendent reports to the Deputy State Superintendent for Administration, and supervises three branch chiefs (Information Management, Planning, and Assessment). This division includes over thirty individuals and is responsible for the testing initiative at the state level.

The second MDSE interview was with the Assistant Superintendent in the Division of Career Technology and Adult Learning under the Office of the Deputy State Superintendent for Instruction and Academic Acceleration. This Assistant Superintendent is responsible for the branches of Career and Technology Education, Career and Technology Systems, Career and Technology Education Student Assessments Services, Adult Education and Literacy Services, and the Adult Instructional Services and GED Testing Service Sections. The divisions and sections under this Assistant Superintendent

include over forty MSDE employees and are responsible for the distribution of and accountability for all CTE Perkins funding in the state.

Local Site Selection

Patton (1990) delineates the major differences between quantitative and qualitative research as “the different logics that under gird sampling approaches” (p.168). Whereas quantitative research methods typically involve large numbers of randomly selected subjects, qualitative research routinely “focuses in depth on relatively small samples, even single cases (n=1), selected purposefully” (p.169). The key to purposefully sampling is in selecting “information-rich cases whose study will illuminate the questions under study” (Patton, 1990 p.169). Patton also outlines several different strategies for “purposefully selecting the information-rich cases” (p.169) to serve as the data sources of the study. This research plan involved purposeful sampling through implementing “typical case sampling” (Patton, 1990 p.173) and incorporated “maximum variation sampling” (p.172) to select “information-rich cases” for the study. As explained by Patton, typical case sampling involves selecting cases that illustrate what are “typical” or “average” examples representing characteristics common to most subjects. This was the strategy used in selecting school sites to represent the three types of career/technical education programs in Maryland. Maximum variation sampling involves selecting cases that represent a range of possibilities for a phenomenon. The decision to examine sites across program types increased the likelihood of variation in responses, as did the decision to interview individuals representing different roles and curricular areas at each case site.

To assist in selecting the sites representing the three major delivery models, the directors of career/technical education in the twenty-three Maryland county school districts were contacted via e-mail with a request to detail the type of CTE programs in their district. The responses revealed a clear majority of career/technical centers, with a smaller number of community high schools with CTE components and very few comprehensive technical high schools. Given the large number of centers compared to the comprehensive technical high schools and community high schools with CTE components, two sites were selected to represent the centers while one site was selected for each of the other two delivery models (comprehensive technical high schools and community high schools with CTE components). It was critical to include representation from the three identified delivery models in the state to accurately assess the challenges of the assessment program to career/technical education programs in Maryland.

To facilitate selecting the specific sites among those available, the school's participation and success in Skills USA (formally VICA) was established as criteria. Skills USA is an internationally recognized vocational student organization offering numerous opportunities for student competition in specific CTE course skills. Students compete at the state level to earn the opportunity to represent Maryland at the annual national competition. In order to compete nationally, students must earn a first place finish at the state competition. By using information about participation in Skills USA, the goal was to guarantee that the sites selected for participation had active career/technical education programs with well-developed missions. These sites were not considered to have the "best" or "strongest" career/technical education programs in the

state; rather they were considered to be good representatives of career/technical education programs for each of the three models of service delivery.

The results of Maryland CTE students competing and placing at the national competition for the past four years were supplied by personnel from MSDE. Tabulation of these national results indicated a distinct majority of national medal winners at two CTE centers; a large CTE center located in an urban county with 29 national medal winners, and a smaller CTE center located in a rural county with 34 national finishers. Due to the large number of national winners from these two schools and the vast difference in the demographics, location, and population size, both schools were selected for on-site research locations. The comprehensive technical high school site selected was the only school representing this model reporting national Skills USA finishers. Very few national medal student winners were from the community high schools with CTE components. As the information on national medal winners only included Maryland first place finishers, MSDE was contacted to further investigate participation levels of students from the community high schools at state contests. A telephone interview with the MSDE Skills USA coordinator revealed one rural community high school with numerous state medal winners over several years, but with few first place finishes. The MSDE representative identified this school as the most active community high school participating in Skills USA state competitions, making this school the selection for the fourth research site.

Description of Local Research Sites

The sites identified are all located in Maryland and the names used for the schools involved in this study are fictitious to preserve site and individual study participant

confidentiality. Once each site was secured for the study, subjects were selected thought to be knowledgeable about Maryland's high-stakes testing program, career/technical education programs, and the implementation of high-stakes testing at each of the four case sites. The study sought to solicit the participation of administrators and teachers with the direct knowledge about assessment policies, career and technical education programs, and core academic areas included in Maryland's assessment program.

When selecting technical department chairs to involve in the interviews, this research design incorporated a form of "maximum variation sampling" (Patton, 1990, p.172). Specific CTE programs were targeted to elicit information from programs representing traditionally different student populations. The goal was to include a program from each school where students routinely go directly to the work force after graduating from high school (construction or automotives) and a program more aligned with post-secondary education experiences for students (business education or health occupations). Identifying four CTE program options assured that each school's CTE offerings included a representative of each focus group. This method facilitated the development of "a small sample of great diversity" (p.172) as recommended by Patton to achieve significance through the heterogeneity of the sample groups.

To capture the perspective of those directly involved in test preparation, one academic department chair representing a tested area was interviewed at each site. Recognizing the ongoing emphasis on student acquisition of English and mathematics skills I decided to only include representatives from these two subjects, and I allowed the building principal to select the academic department chair at each school interview site. At the comprehensive technical high school and the community high school with CTE

component the academic department chairs were located in the same facility. For the two technical centers the academic department chairs were interviewed at community feeder high schools.

A total of 24 personnel at the four sites agreed to provide their perspectives on the implementation of high-stakes testing. General site demographics and a description of each participant role follow. (See Table 3.1 for details about personnel at each site.)

Comprehensive technical high school. The comprehensive technical high school is one of two technical high schools located in a large suburban county that also has an additional comprehensive technical high school and a career/technical center. This comprehensive technical high school serves a large geographical area of the county. Approximately 1060 ninth through twelfth grade students attend this school which is named Kennedy Technical High School (KTHS) for the purpose of this research. This technical high school is unique in that approximately one-half of the students are not involved in CTE completer programs, but rather are enrolled in an academic magnet program. Students apply in eighth grade, are accepted through a district controlled lottery system and attend this school through all four years of high school, participating on athletic teams and in all other aspects of high school extra curricular activities at Kennedy. There is a good system of communication between technical and academic faculty at Kennedy, and the technical staff is included in all staff development activities concerning the assessments with academic teachers.

At the Kennedy High School (comprehensive technical high school) the following personnel were interviewed:

- Local Director (telephone interview)

- Principal
- Two CTE department chairs, health occupations and automotives
- One academic department chair, mathematics.

Community high school with career/technical component. The community high school selected is located in a rural county and is one of two high schools in the district. Approximately 1150 ninth through twelfth students attend this school, which is known as Truman High School (THS) The other high school in this district is a seven through twelfth grade school and is significantly smaller than Truman High. Both high schools offer CTE programs. Approximately one-third of the students at Truman are involved in CTE courses. Since the programs are in the same building, students need not apply for admission as in the other three models. As at Kennedy, technical teachers are involved in all staff development activities with academic teachers.

At Truman High School (community high school with embedded CTE program) the following personnel were interviewed:

- Local Director (telephone interview)
- Principal
- Two CTE department chairs, business education and automotives
- One academic department chair, English.

Career/technical centers. Two career/technical centers and one feeder school for each center were selected for the study. Lincoln (LTC) is one of two CTE centers located in a large urban county. It serves seven of the county's twelve high schools, and has an enrollment of approximately 1900 ninth-twelfth grade students with no more than 650 students participating on-site during any shift. The feeder community high school

selected enrolls 2100 students; it is an urban high school located approximately five miles from the technical center, and is named Jefferson High School (JHS) for this research. This large technical center offers a variety of career complete courses to students, beginning with ninth grade exploratory programs. Students select their complete programs in tenth grade and attend the center for the entire day on alternating days in eleventh and twelfth grades. The staff at Lincoln is made up entirely of technical teachers except for two academic specialists who provide support to struggling students. The special education population at Lincoln is approximately twenty-six percent. The staff at Lincoln is not involved in staff development activities with academic teachers at any of the feeder community high schools. The principal at Lincoln is very interested in integrating academic skills into technical courses and the technical teachers have taught math and science courses at the center for which students receive state academic credit.

At Lincoln Technical Center (large career technical center) the following personnel were interviewed:

- Local Director (telephone interview)
- Principal
- Two CTE department chairs, health sciences and construction
- Interviews were also conducted at the home/feeder school (Jefferson High School) with the principal and the English department chair.

The second career/technical center is smaller than Lincoln. Madison Career Center (MCC) is located in a rural area and serves the four community high schools in its county. Approximately 900 students attend the MCC with no more than 280 students attending during any shift. The feeder community high school selected is located on an

adjacent campus and is named Adams High School (AHS). Approximately 1850 students attend the school. Students begin attending Madison in tenth grade for abbreviated experiences and select a technical course major to study in eleventh and twelfth grade. This principal/CTE director is active in encouraging academic/technical integration and has implemented numerous initiatives into CTE programs to encourage student academic success. This school actively investigates and employs strategies to assist students in achieving success on SAT and other standardized tests. As at Lincoln, the technical staff members are not involved in staff development activities at any of the community high schools in the district, therefore the technical teachers have received limited information regarding the assessment program at the technical center. Madison Career Center also has two academic staff members who serve students' academic learning needs. The special education student population at Madison is also over twenty percent.

At Madison Career Center (small career center) the following personnel were interviewed:

- Principal (also the local director of CTE)
- Assistant principal
- Two CTE department chairs, health sciences and automotives
- Interviews were also conducted at the home/feeder school (Adams High School) with the principal and the math department chair.

Data Collection

Procedures. All data collected for this research were collected through in-person and telephone interviews conducted only by the primary researcher. The MSDE and the local school interviews were completed in-person and audio taped. Each taped interview

was transcribed into hard copy format to facilitate examining the responses to the interview questions. The interviews with the local district directors for CTE were held via telephone, with the exception of the director of the small career center (MCC), who also serves as the school's principal. Each interview lasted approximately 40 minutes.

Interview protocol. Patton (1990) identifies three approaches for qualitative interviewing: the informal conversational interview, the general interview guide approach, and the standardized open-ended interview (p.280). Of these three approaches, a protocol similar to the "standardized open-ended interview" approach was followed for this research. This method involves utilizing a "set of questions carefully worded and arranged with the intention of taking each respondent through the same sequence and asking each respondent the same questions with essentially the same words" (p. 280). While the questions were fundamentally the same, the exact wording was structured to suit the different role of each interviewee. The interview approach also conformed with Yin's description of a "focused interview" in which "...the interviews still may remain open-ended and assume a conversational manner, but you are more likely to be following a certain set of questions derived from the case study protocol" (Yin, 1994, p.84). This allowed the researcher to adapt the questions to each unique setting and knowledge base of the respondents.

The interview questions were developed through personal experiences as a twelve year CTE principal, involvement with the state principal's advisory committee for high school assessments, and through the review of pertinent literature. The interview protocol used for this study was as follows:

A. High School Assessment Personnel (MSDE)

1. What is the mission of the high-stakes testing program in Maryland?
2. How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in Maryland?
3. Has anything specific been done at the state level to align the goals of the high stakes testing program with the goals of career and technical education?
4. What challenges do you see the high-stakes testing program posing to career and technical education at the state, district, or school level?
5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education, in specific areas such as student enrollment in CTE classes, scheduling concerns, actual CTE course content and daily activities? Also do you foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

B. Career/Tech Personnel (MSDE)

1. What is the mission of career and technical education in Maryland?
2. How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in Maryland?
3. Has anything specific been done at the state level to align the goals of career and technical education with those of the high-stakes testing program?
4. What challenges do you see the high-stakes testing program posing to career and technical education at the state, district, or school level?

5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, actual CTE course content and daily activities? Also do you foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

C. Local Career/Technical Directors

1. What is the mission of career and technical education in your district?
2. How do foresee the implementation of high-stakes testing influencing the mission of career and technical education in your district?
3. Has anything specific been done in your district to align the mission of career/technical education with the mission of the high-stakes testing program?
4. What challenges do you see the high-stakes testing program posing to career and technical education at the state, district or school level?
5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, as well as actual CTE course content and daily activities? Also, do you see or foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

D. Principals

1. What is the mission of career and technical education in your school?

2. How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in your school?
3. Has anything specific been done at your school to align the mission of career and technical education with the mission of the high-stakes testing program?
4. What challenges do you see the high-stakes testing program posing to career and technical education at the state, district, or school level?
5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, and actual CTE course content and daily activities? Also do you see or foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

E. Career/Tech Department Heads

1. What is the mission of career and technical education in your school?
2. How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in your school?
3. Has anything specific been done in your CTE programs to align the mission of career and technical education with the mission of the high-stakes testing program?
4. What challenges do you see the high-stakes testing program posing to career and technical education at the State/district , your school level?

5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, actual CTE course content and daily activities? Also, do you see or foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

F. Academic Department Heads

1. What is the mission of your department in your school?
2. How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in your school?
3. Has anything specific been done at your school to align the mission of career and technical education with the high-stakes testing program?
4. What challenges do you see the high-stakes testing program posing to career and technical education in your school or at the district or state level?
5. How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, and actual CTE course content and daily activities? Also do you see or foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

Summary

The interview phase of the research was productive and enjoyable, due to the overwhelming willingness of all interviewees to participate in the study, and the positive reception received at each interview site. The participants candidly discussed the issues and displayed a genuine interest in the research questions. While numerous issues surrounding the testing program were shared, a genuine concern for the fate of the students involved in the testing process was apparent in the interview responses.

TABLE 3.1. Description of Site Demographics**LOCAL SCHOOL SYSTEM INTERVIEW DEMOGRAPHICS**

School	Population	Grades	Schedule	Position	Sex	Total Years Exp.
Comprehensive Technical High School (Kennedy)	1060	9-12	7 period day			
				Local Director	F	28
				Principal	M	32
				Math	F	27
				Health Science	F	33
				Automotives	M	26
Community High School with CTE (Truman)	1150	9-12	90 min 4 pd. block/sem			
				Local Director	F	20
				Principal	M	27
				English	F	12
				Business	F	14
				Automotives	M	5

LOCAL SCHOOL SYSTEM INTERVIEW DEMOGRAPHICS (cont.)

School	Population	Grades	Schedule	Position	Sex	Total Yrs. Exp.
Large CTE Center (Lincoln)	1900 total 650 per session 3 sessions	9-12	4 pd. A/B day			
				Local Director	M	35
				Principal	M	33
				Health Sciences	F	34
				Construction	M	29 12 Bio. 17 Carp.
Feeder school (Jefferson)	2100	9-12	4 pd. A/B day			
				Principal	M	31
				English	F	22
Small Career Center (Madison)			4 pd. block	Local Director/ Principal	M	37
				Assistant Principal	F	27
				Nursing	F	3
				Automotives	M	11
Feeder School (Adams)	1850	9-12	7 period day			
				Principal	M	30
				Math	F	18

CHAPTER FOUR: RESEARCH FINDINGS

Results of the Research

Overview

The intent of this research was to investigate the potential challenges that Maryland's high-stakes testing initiative will pose to career and technical education (CTE) programs. Given the magnitude of the high school assessment program in Maryland and the emphasis placed on preparing students to achieve success on the tests, un-tested areas such as career and technical education may potentially become victims of the testing program. While the importance of the high-stakes accountability program is acknowledged, this research focuses on discovering potential un-intended consequences to local career and technical education programs. The knowledge and skills attained in high school CTE classes establish an important foundation for many students' future careers, and it may be argued that this aspect of technical education is even more important for numerous student career plans than the "academic" preparation for high-stakes assessments. The possibility of conflict between preparing students for success on high-stakes assessments and providing students with opportunities in career and technical education shaped the rationale for this research project. This chapter provides a synopsis of the data obtained through the interviews and concludes with a summarization of findings.

Interview Analysis

Introduction

In the following section, the two research questions were addressed by means of role ordered matrix tables (Tables 4.1.a. – 4.5.b.) which were developed through an analysis of the participants' responses to the research questions at each case site. Utilizing the tables, a summative analysis was developed and was organized by case site to facilitate the comparison of the responses of MSDE personnel and of participants at the four individual local school interview sites. The following written summary for each research question contains personal observations, anecdotal information, paraphrasing of responses, and in some cases direct quotes of the respondents not included in the role-matrix tables. All information listed in the ten tables 4.1.a. through 4.5.b. are direct quotes of the participants.

Maryland State Department of Education

Research question one: What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?

While the MSDE personnel did not perceive the assessments to present significant challenges to CTE programs in Maryland, they did identify remediation needs and the possibility of "double-dosing" academic courses as potential challenges. The CTE Assistant Superintendent continually emphasized positive impacts of the testing program such as: "It will give us students that are better prepared for the technical content in career and technology education." The need to provide "catch-up" opportunities in academic skills for unprepared ninth grade students was a specific challenge she

mentioned along with the concern over double-dosing of academics limiting CTE opportunities. The Director of the High School Assessment Program identified the logistics of offering remediation to failing students as a challenge for technical high schools, and did not address other specific challenges to career/technical programs.

Both interviewees at MSDE called attention to the importance of academic skills to CTE students and how the assessments support what is happening in career and technology education. The concern that without the “core skills” tested by the HSA’s, CTE students will not stand a chance of achieving success in their career field was shared several times. The Assistant Superintendent for CTE programs emphasized: “...different requirements in the world of work, different preparation, and it means that every kid needs algebra, every kid needs geometry.” She also expressed that, in order for students to achieve success in the today’s workplace, students need to develop “problem solving skills and the academic knowledge to be able to put those technical skills in place.” Her responses continually returned to the importance of academic skills and that high-stakes testing was making it possible for students in technical programs to receive these “higher level” academics. The Assistant Superintendent for CTE programs also referenced the challenge of getting academic teachers to change instructional approaches to meet the needs of students. Overall, the two participants at MSDE did not identify serious challenges to CTE programs as a result of the Maryland high-stakes assessments, but did recognize the opportunity for the assessments to strengthen CTE through increasing the academic skills of CTE students.

Research question two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of

career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

The CTE Assistant Superintendent acknowledged the efforts to align career and technical programs at the state level and the assessment program with an emphatic first response of “Yes.” She followed with a detailed explanation of current and future efforts to align CTE curriculum with that of the tested areas stating:

Our policies and procedures speak to the issue of academic alignment, ensuring that we look at what those technical skill standards are, that the academic knowledge and skills emerge from those skill sets, and that we then adjust and align the career and technology education program to integrate the appropriate academic content.

It was obvious throughout the interview that a great deal of effort was undertaken at the state level to align career and technical education with the academic core learning goals tested by the high school assessments, and that the Assistant Superintendent was pleased with the progress made in this area.

The MSDE CTE Assistant Superintendent also discussed the number of CTE credits students take as they complete technical programs. The State requires four CTE course credits to complete the career pathway, however many students routinely complete more than the required four credits in technical programs. She stated:

We look at where our programs might be able to buy additional time, looking at some of our six credit programs in CTE, which might not need to be six credits.

We might need to look at how we use our time in a better fashion, so that for students needing more academic assistance, they could have that time.

Suggesting a reduction in the amount of time students spend in CTE programs was an unexpected response from the lead State administrator in Career and Technical Education. She also encouraged CTE teachers to “provide examples of the application of high school assessment areas” in their programs to support the mastery of the tested academic skills, and that “CTE really can step up to the plate and needs to take that leadership role.”

The Director of the testing program at MSDE suggested infusing academics into CTE classes and he was the only interviewee to recognize that CTE teachers may not be skilled in this area and that this training is difficult to provide. “I don’t think anyone has ever done that kind of training or curriculum work for that person who is teaching CTE to support when they are using text and asking kids to write.” His observation is critical to the success of the infusion of academics and one often overlooked when CTE teachers are asked to become teachers of academic skills.

Comprehensive Technical High School (Kennedy)

Research question one: What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland’s high-stakes testing program?

It was interesting to note that three of the four principals (including the Kennedy principal) identified the same challenge; the redirection of resources away from CTE programs as a result of the emphasis on the testing program. The Kennedy Technical High School principal acknowledged that this school has already lost CTE programs as a

result of funding and staffing cuts: “A number of programs have already gone by the wayside; for example; masonry, carpentry, electricity.” He also stated: “It comes down to dollars and cents and how much of this can be supported... If it turns out you have to eliminate a program than CTE would probably be the first to go.”

While the Kennedy Math Department Chair saw the CTE teachers as viewing the testing program as “not impacting them”, the Health Sciences Department Chair recognized the challenge of adapting technical curriculum to “be in line with those tests” but without significantly altering the coverage of technical curriculum. The Automotives Department Chair expressed how the alignment of the assessment program with CTE courses will raise parents’ viewpoints of the value of CTE courses: “They (parents) thought that what we did was easy and dirty, but with this alignment, parents realize that what we do requires the same amount, if not more concentration of and on academic and scientific principals.”

In this district an interesting viewpoint was given by the CTE director. While she shared the concern of students missing opportunities in CTE as a result of high stakes testing, she also identified this as a time when career and technical educators need to be proactive in publicizing the successes of CTE programs. The ability of CTE programs to meet the needs of students must be “front and center in the public eye... because so much focus is on data, on test results.” She shared how CTE courses are a vital component of students’ total education and also the concern that the intense focus on test scores doesn’t decrease the attention on valuable programs such as career and technical education. The director also identified scheduling students into the completer sequence as a real challenge of the assessment program. The director really did not see the assessments as

presenting significant academic challenges to the CTE students in her district. She shared that all students in the district, including CTE students, are being provided with the “most challenging academic program we can provide them.”

Research question two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (**comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers**)

The local director of the CTE program at Kennedy High School shared several actions taken to prepare CTE students for Maryland high-stakes assessments.

“Well, we have had to align our mission with the master plan and by virtue of that... the high-stakes testing, HSAs, MSAs are inherent in that master plan. So, we very much aligned our mission with supporting the system’s efforts to have students succeed on high-stakes testing... We started doing class matches, I’m going to guess 3 or 4 years ago, to align our programs to demonstrate that technical skill and academic skills needed by let’s say system networking programs, also corresponds with math and science and language arts skills the students would need entering the high-stakes testing... And the instruction has changed. We absolutely are holding workshops, staff development, on you know, how to write sample test items that look like what you’ll find on an HSA, or more recently, MSA. We did that for years for end-of-course exams. So we’ve definitely changed the curriculum and staff development to focus on high-stakes testing including the SAT’s... They (CTE teachers) often have days where they

would break-up into departments and then each department would be focusing on their content and how it relates to testing.... But they (high-stakes tests) have affected curriculum and instruction, but I feel better. That's not a complaint at all; I think it's an improvement in focusing both the academics and tech. It's just more work.

This director was well informed regarding the demands of the assessments and had worked to share this knowledge with CTE teachers in the district.

The principal acknowledged the efforts of the director in working to align CTE courses with tested areas and to train CTE teachers in strategies to support the assessments. He shared his desire for CTE courses to “adapt to what we need” to help students achieve success on the tests or “they will, much like the dinosaur, disappear from the face of the earth”. While the Math Department Chair thought that Kennedy was the only school in the county not offering algebra with assistance, the principal recognized that academically struggling students at Kennedy High have been required to take academic subjects twice a day; even though he stated “this is not my favorite thing to do”.

The Health Occupations Department Chair identified several ongoing initiatives at the school, such as “Test You” and “SAT word of the day” programs that she considered strategies to respond to the challenges of the Maryland assessment program. The Automotives Department Chair primarily discussed the demands of the “NATEF” assessments that the automotive students take to earn national certification, and the theory that current high-stakes tests were introduced as models for further testing in other

curriculum areas. In general though, the numerous districtwide initiatives identified by the local director were not substantiated by the CTE department chairs.

Community High School with CTE (Truman)

Research question one: What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?

At Truman, the department chairs and the local CTE director presented similar impressions concerning the perceived challenges resulting from the high-stakes assessments: the assessments would not present significant challenges to CTE programs in their district. The director conveyed a feeling of confidence concerning the performance of CTE students on the tests responding: "No, I don't. All of the lower level academic courses have been eliminated and all students take advanced academic English, academic earth science, world history and a minimum of Algebra 1... we encourage our career and technology students to take advanced placement courses." As a result of the previous work to increase the rigor of academic programs for CTE students the director and the department chairs shared a sense of confidence that CTE students will perform as well as other students in the district. The Business Education Department Chair supported the director's stance on the minimal effect on CTE students: "I'm not sure if it will have any real impact or not... I just feel that with the testing, they are raising the academic expectations, and they'll be able to perform better in all areas; as did the Automotives Department Chair: "It keeps the students more focused on their academics, which is good." Hedid identify a challenge for students in the area of writing skills: " The writing skills. I think that's a challenge for them with the BCRs (brief constructed response) and

ECRs (extended constructed response). I know the student will know the answer, but they don't necessarily write it out like they should." Overall, the teachers and the director were not overly concerned with the impact of the assessments on CTE programs in their district.

On the other hand, the principal was concerned with the potential loss of emphasis on CTE programs as a result of the implementation of high-stakes assessments. His apprehension was clearly stated: "I have reservations about anything you put extra emphasis on; anything that measures a school and an individual student at that school will receive higher priority than electives." He stated that the school was in the process of implementing several "academically challenging new CTE programs" (pre-engineering and a National Finance Academy) and was concerned that the "redirection of resources" from these higher level CTE programs to "help prepare students for exit exams" will make it impossible to continue developing these courses. From his viewpoint Maryland has limited resources and these resources will be devoted to the tested courses:

Maryland is no longer one of those states that has extra money, we don't have a surplus, we have a deficit. So my chief worry as far as CTE courses are concerned is – will the resources be allocated away from those higher level (CTE) courses to help prepare students for exit exams, and you can't ignore that – the HSAs and MSAs, it judges the school.

The English Department Chair echoed the principal's concerns for limited resources sharing: "... I think finances always follow the testing you can put on paper and prove statistically." She was also apprehensive about the appearance of importance placed on tested subjects as compared to the other curriculum areas. While there was a level of

confidence shared at this site concerning the performance of CTE students on the exit exams, there was also a real apprehension concerning the continuation of financial support for career and technical programs, particularly by the principal.

Research question two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, **community high schools with embedded career/technical programs**, and technical centers)

The responses Truman High School focused primarily on infusing academics into CTE course curriculum and adapting test questions to model those on the high school assessments: “Well, it has already changed the lessons and approaches, and that was a conscious decision on our part” (Principal, Truman High School); and “We have changed our test questions to match the high-stakes assessments, the high school assessments, so that part we addressed” (Business Education Dept. Chair). The English Department Chair at Truman offered two interesting perspectives to the issue. She shared how the testing program through its total emphasis on the testing of academic courses was sending “a subtle message to parents and to kids that it is almost an elitist system, you know what we can test by paper and pencil is most important,” and that the stage is set for CTE teachers to “PR their program to allow parents and students to understand how important it is.” She was also concerned with guidance counselors having fewer opportunities to see students and provide career pathway guidance as a result of the time spent coordinating testing.

While the responses at the other school sites did not identify significant alignment of CTE programs with the high-stakes testing initiative, Truman High School was the one exception. The alignment identified at Truman by all interviewees concentrated on modifying test questions to reflect the style of the high school assessments. Everyone at the site was knowledgeable of the testing program and at ease with terminology associated with the tests. For example, both technical department chairs comfortably used the term “brief constructed response” throughout the interview. The obvious familiarity with the testing jargon suggested a higher overall level of ownership by CTE teachers for responsibility of preparing students for the assessments than was displayed at the any of the other case sites. The local director clearly recommended infusion of academics into CTE programs: “So I think our teachers have to be cognizant of the fact that they’ve got to support reading and math instruction in the classroom”.

This site clearly demonstrated a sense of preparedness for the Maryland high-stakes assessment program. The results of the director’s pro-active efforts to address the assessments were apparent in the responses of the participants at the school. The principal and the department chairs at this site were knowledgeable of the testing process and strategies to prepare students for the assessments, more than individuals at any other school study site.

Large Career Tech Center (Lincoln)

Research question one: What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland’s high-stakes testing program?

The apprehension of the local CTE Director for Lincoln Technical Center was perhaps one of the most direct concerns shared referencing the impact of the assessment program on career and technical education in Maryland. The Director stated:

And I think at both the local and State level, we run the risk of being careful that we don't lose the true mission to help prepare some young people for the labor market... that we don't lose emphasis, that we don't lose that we are preparing kids for employment as well as post-secondary, and I think that's a danger. And some of our systems have done that.

The director also brought attention to the redirection of resources away from technical programs and the potential for students to drop out of school as a result of failing assessments:

Well, I think one of the challenges is going to be redirection of resources, probably towards making sure young people have adequate preparation. I guess it's fair to say, redirection of resources away from our program towards getting kids ready to pass these tests...I think one of the challenges at some point is trying to keep some kids who are borderline from dropping out of school... So I think the drop out and the resources are two big challenges, and I think the availability of our programs for some kids is going to be a really big challenge.

Of all the interviewees, he was the most vocal in identifying potential challenges to CTE programs as a result of the state-wide assessment program.

The main challenge addressed by other participants at Lincoln Tech and Jefferson High School (the community feeder high school) dealt primarily with CTE enrollment concerns resulting from "double dosing" academic classes and remediation. The Lincoln

Tech principal stated: “I think the biggest challenge for us may be in the whole [enrollment]. If kids fail it and have to remediate and keep re-taking, it could lower some numbers in some programs.” And the principal at Jefferson concurred: “It may affect enrollment, because kids can double-up on academic classes where they need assistance. It may become difficult to fit the Vo-tech program into their schedule.” The English Department Chair at Jefferson also discussed the scheduling dilemma as well as concerns surrounding the emphasis at the home school on test preparation: “Okay, scheduling definitely is going to be a factor. Finding time in their schedule to get them in, I think it is going to be difficult for career and tech ed schools to make it, to make the students aware of what they have to offer because the home school is going to be so driven by test scores and needing to increase things that it [career and tech ed] is not even going to be an option.”

Both technical department chairs also saw the assessments as presenting possible challenges to student enrollment in CTE course, even to the point of not being able to attend the center: “The other challenges; students not successful in those assessment tests will then have to either retake classes or have tutoring, or something on the side. It would cause them to go back to their home school and not finish their technical program” (Health Sciences Department Chair). The Construction Department Chair was more specific, actually stating that the students in his program may stand a good chance of failing the assessments, suffering negative consequences: “They’re not the gifted and talented and AP type students, so they are probably going to have a more difficult time on the tests to begin with. And, so if they do have to get put in remedial classes, they’re

taken out of the center. I mean they won't have the time, or they will just plain drop-out."

The local CTE director also shared concerns for less able students:

I think it is clearly going to impact a kid who is questionable academically. I don't know how else to say that. I think there is definitely going to be an impact. I think it is going to impact a significant number of kids who are special-ed and I'm afraid they're not going to be able to do both, and I think that's a shame

The Construction Department Chair was proud of the fact that students attending Lincoln Tech received math and science credits for technical courses taken at the center and discussed his reservation for this policy continuing. This practice was ongoing for numerous years, but was now under review as a result of the new accountability standards accompanying the assessments:

I don't see it yet, but I do see some turf battles coming, by that I mean in our county students can receive math and science credit for their vocational class. If they are not doing well in math or science tests, I'm not sure who's going to take the heat on that... which means taking the math credit away and saying you have to take three straight math credits over there (at the home school).

The Health Sciences Department Chair also mentioned the math and science credits that students earn at the center: "We do get related math and related science credit, now that may go by the wayside." The technical teachers at Lincoln were proud of the fact that students were receiving these academic credits through the technical courses and saw the assessments and the accountability surrounding the tests as threatening this practice, even though they believed it had been good for the students.

Research question two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and **technical centers**)

Although interviewees identified a substantial number of challenges, they also expressed confidence in their ability to address the challenges. In this district, specifically at Lincoln Technical Center, the most prevalent strategy specified to address the challenges of high-stakes assessments was the recently imposed county-wide four period A/B day allowing students to enroll in eight classes each year. The local CTE director responded: “We have each of our high schools on the same scheduling system. We all have a four period A/B day... It has allowed us to align our offerings so that kids relatively easily, can flow from one to another... We’ve been able to dovetail our scheduling into the total high school schedule.”

The Lincoln Tech principal also acknowledged the A/B day schedule as a means to address the scheduling challenges resulting from test preparation and remediation activities:

Initially we were concerned about the influence of high-stakes assessments on our program and enrollment. At this point, however; we now have an A/B day four period day schedule. So the students can get up to 32 credits. It appears at this time that this schedule will increase our enrollment and we think, based on preliminary information, that high-stakes testing will have an impact, but we don’t think it is going to hurt us a lot on enrollment; special needs kids perhaps

will have higher consequences because they will need to pass the tests, but right now we don't see any major impact with this testing on us.

The Construction Department Chair also credited the A/B schedule in facilitating an increase in enrollment numbers at the tech center: "I mean this year has been a landslide year because of the change to eight classes... So our enrollment has gone crazy in the ninth grade". The Health Sciences Department Chair also referred to the new schedule:

Okay as far as influencing our school, hopefully now with our home school system going on an A day/B day, the students are going to be able to take more course work, which I think will help them be more successful on those tests. Prior to that, I think it would have affected the number of students we have at this school and our enrollment, because students weren't able to get as many classes in at the home school; and therefore would have to drop this in order to complete the algebras and geometry and things they need for testing... So now with the A/B day, I think it will be a little easier for them

Other strategies mentioned dealt primarily with infusing math and English skills into CTE courses. This approach was identified by the principal and supported by both CTE department chairs at the center. "So you know in our lesson plans, we are mandated basically to have math and science and English kind of spelled out in those lesson plans" (Construction Department Chair). "It has not affected us because our principal is very pro-active.... We've had a lot of in-services on how to incorporate a lot of this information into our lesson plans and into our classes" (Health Sciences Department Chair).

An unexpected idea was shared by the Construction Department Chair to reduce to the amount of time students spend in CTE courses, which was similar to the proposal of the MSDE Assistant Superintendent of CTE programs to reduce the number of CTE credits that students complete.

Yeah, I can see, you know, the teachers changing their instructional approaches in one way or another... If they took that time and made it a class period, they could shorten the vocational part to an hour and a half, instead of 2 hours and 15 minutes. And, so your vocational class would be an hour and a half and we get some more math and science.)

He was the only school based person among all the participants to suggest giving up contact time with students in CTE courses to support the students' acquisition of academic skills to prepare for the assessments.

The principal at the feeder high school, Jefferson High School, referenced on-going staff development at the home school: "blended instruction has been going on for years here." The Jefferson High English Chair shared that teachers at the tech center were not involved in staff development activities at Jefferson High: "They definitely have staff development, but they don't come into the home school or anything, but I know they have it. It's their school, but I know they have it." The new schedule was mentioned at Jefferson, but not with as much frequency as at the tech center. The discussion of staff development at Lincoln Tech and at Jefferson High did not specifically address the high school assessments or specific skills related to the assessments, but appeared to reference ongoing initiatives such as blended instruction and integration strategies practiced at the two schools.

Small Career Tech Center (Madison)

Research question one: What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?

The demographics were different at this site than at the other three school districts, as this was the only district where the Career Center Principal also served as the district director of career and technical education programs. Also unique to this site was that the principal of Adams High School (local feeder for Madison Career Center, MCC) shared more apprehension for the impact of high-stakes assessments on student participation in CTE programs than other participants in this district. Several times during the interview he voiced concerns regarding the upcoming assessments as graduation requirements, especially for “mid-level general-level and special-ed students” and the need for them to become involved in “remedial course work.” This principal recognized the value of the CTE programs for a specific population of the students attending Adams High School and clearly explained his viewpoints on the potential challenges of the assessment program:

Our concern, my concern is that as they become the requirement for graduation, that part of our student population who really need the skills that are offered at the career center, may find it more difficult to complete some of those programs if they have to become involved in remedial courses, in order to assure that they are getting the appropriate assistance to pass the high school graduation requirements.

This principal shared a viewpoint depicting the big picture, of how these testing requirements could impact numerous aspects of the school as well as a student's

opportunity to complete the requirements to earn a Maryland diploma and also complete a CTE program:

The challenge I see is being able to ensure again that the students continue to have the opportunity to take our career/technical center pathways programs and meet their graduation requirements in the areas of fine arts, physical education, tech ed, and receive appropriate assistance... We are going to have students who are going to be restricted in course selection because of remediation...I see a challenge scheduling-wise and staff-wise.

The Math Department Chair at Adams also shared concerns; however they were more related to the increasing difficulty of academic courses at the school and the impact on the students attending the tech center: . “I think we’re kind of in transition, because before we had a lot of our courses geared towards the careers and now they seem to be a much higher level and higher level thinking and may be too hard for these kids that we also have going down to the career center.”

With the exception of the assistant principal of the career center, the level of concern communicated by the principal of Adams High was not shared by the participants at Madison Career Center. The principal/director was openly critical of the testing program: “I think the whole thing is going to be negative in the end. At the state level, somebody’s going to realize it some day and one day they will wake up and say – ah – forget it.” But he did not foresee the assessments posing significant challenges to the tech center programs. On the other hand, he was very interested in attaining information on individual student performance to determine how the students attending the center were performing on the tests.

We haven't seen a big influence on that at the moment. I want to get information on these kids with their testing especially in the area of language arts and math; to tell if our kids are the ones failing, if our kids are the ones passing, so we know what we can do with our two resource people, and how we can aid these kids accomplishing what they have to accomplish.

He made the point that he is in the dark concerning test results as all student scores are reported through the feeder school and the CTE students are not broken out from the general population, therefore it is impossible to determine the success level of students attending the center. Unless he knows which students are failing and in what areas they are deficient, it is difficult to address the appropriate academic skills at the center.

The assistant principal acknowledged a possibility of students being forced to start CTE programs a year later as a result of the demand of the testing process:

Right now we take in kids in 10th grade, 11th and 12th and a lot of our students are finished with their pathways by their junior year and they are coming back for their level III's by their senior year. What I see this doing is not letting our kids start until their junior year in many cases, later on in their career and the harm that we see to that is that sometimes kids think masonry is for them, or automotives for them, or drafting, or engineering is for them because that's what their parents are into... they find out that isn't for them, and by starting in their tenth grade year they have the opportunity to switch. In their junior year they are going to buy it, and they are going to have to stay with it, if that is indeed their pathway to graduation, because they will not have the option to switch.

She also shared a level of concern for the students not able to take CTE courses because they required remediation as a result of not passing “specific courses.” She acknowledged, though, that parents would be more concerned with students’ receiving diplomas than completing CTE programs:

My concern is that it would impact career and technology education from the standpoint that parents are going to want that diploma; they’re going to need to pass specific courses. If they don’t pass those courses, counties are going to do remediation, which will take part or some of their day away to do that and that might then force kids into making choices that will not permit them to come to the career center for instruction and it will be difficult for some of the students, I think.

The two technical department chairs at Madison portrayed an attitude that could be interpreted as ambivalence toward the testing process. The Health Sciences Chair stated:

As far as the mission of the career center, I don’t really see it changing anything regards to the mission. I’m a little hesitant on the question of high-stakes testing because I haven’t paid a whole lot of attention to it, but I don’t feel like it influences the career center a great deal. I know they have to pass the basic math and sciences and English portions at the home schools, but I don’t think that plays out so much here.

The Automotives Chair was equally ambivalent:

Well, I really don’t [think it will make a difference]. I think we need to have some sort of an assessment. I am looking at an assessment in more of the competency-

based assessment as to what my students can do that's going to help or benefit what they are going to do in industry..... I think our biggest challenge here in my program is to have some of these kids pass some sort of test in their area.

It appeared that the technical department chairs were uninformed as to specifics regarding the high school assessment program. The Health Sciences Chair appeared to communicate a feeling of disinterest for the testing process. A follow-up question to her revealed that she was not aware that students were already doubling-up on algebra at the feeder school and that doubling of English was also being discussed. After revealing this information to her, she responded:

That would definitely influence our student population because for the two high schools; ... it's already three of their class periods. So they would not be able to come. They would still have to get their English and math, other electives and math and sciences completed, so that would reduce our enrollment. In that regard, I hadn't even thought about that.

Research question two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and **technical centers**)

While several strategies were identified by participants in the Madison Career Center District it appeared as if these initiatives, while worthwhile programs, were ongoing initiatives that had been in place prior to the implementation of high-stakes assessments. The Health Sciences Department Chair honestly stated:

We incorporate a lot of math. I don't know if that's so much in regard to the high school assessment exams, but it is more in regard to what the business community is telling us they want and need. We've incorporated math on a daily journal basis and we started incorporating English this year... they need to be able to read and write efficiently and productively and we're working hard.

She also acknowledged that her lack of concern may be due to the type of students enrolled in her programs. She doesn't foresee these students as the ones to face difficulty passing the assessments:

Most of my kids are college prep kids that are doing dual completers, so they're following college pathways... Almost all of them have a foreign language and their math and their English, they have it all. So they are dual completers, so I don't really see that... They are really pushing the kids so that they can graduate. My question on this high school assessment thing is – what happens to the kids that don't? Do they just get a certificate of attendance? And what does that do to their future world of work without a diploma?

When questioned as to the fate of students in other programs, she responded: “I can see a problem there, yeah, definitely, yes.”

The Automotives Department Chair at Madison readily shared how math and English skills are integrated into the automotive program. The strategies identified did not appear to specifically address the requirements of the high school assessment program, but rather were sound approaches to integrate academic and technical education that had been in place for years in this program:

Oh, I think so yes. We're supporting a lot of math and a lot of English grammar in several ways... we do a journal... We, also in our programs, have students write and prepare orders just like they would in industry... We have an advantage here because it's what they are interested in, if you take a student that's interested in, for example, doing brake work on a car, and I show him how math is critical in doing brake work or measuring brake components, they tend to utilize it more than they would sitting in a plain math class.

The tech center assistant principal spoke of involvement at the district level in aligning CTE and academic programs as a result of the district's master plan; however the specific strategy she identified was directed to increasing SAT scores:

I work very closely with our master plan for the county and I had input into that and they clearly support CTE over there and they are weaving us in and out of their programs... We're supporting the way kids see tests given, the format, the language that they are given in, and exposure to terms or words. The SAT prep words, we have a "word of the day" in all of our classrooms.

She did not specifically mention any initiatives specifically put in place as a result of the high school assessment program. The Math Department Chair at Adams, however, felt that there was better coordination with the technical programs in the past prior to the implementation of the high school assessments. "We used to work a lot with the career center teachers when we had a major tech ed program here... we tried to coordinate, and our classes and course work were more aligned than they are now."

In his response to the questions concerning actions taken to address the challenges of the assessments, the local director/principal of the Madison Career Center again

referenced the need to obtain demographic test data results for the students attending the career center to facilitate planning appropriate intervention and remediation for the students:

We now give kids a pre-test, they have an assignment every day to do a basic English assignment, and then we post-test them at the end of each report period. That's just started this year, so if we knew where the weaknesses were, we could directly address it. We're addressing weaknesses we see, but we don't know whether that's the weakness that the test is showing.

The Automotives Department Chair also shared the director/principal's concern for not knowing the student's weaknesses:

I think we are going to have to make some changes... But, I would like to see the math teachers give us some guidelines on where the weaknesses are when they do test these kids. That if they've got a problem or whatever. I'm sure they do some pre-testing to see where their weaknesses are before they give these final tests.

The principal acknowledged that the teachers at the center have not been involved in staff development dealing directly with the high school assessments. "Not with the high school assessments, but a lot of staff development involving the teaching of language arts and math."

At the feeder high school the principal offered an alternative approach to the model used to offer CTE programs to students:

I think that as a system, we are going to have to take a closer look at changing our current approach to how we service our students at the career center that may help in this situation... like trying to divide our career center into half-days. As part of

that half-day, they would receive instruction outside of the career pathway and helping the students in those remedial programs or maybe even picking up an English or a science or a math or something else at the career/technical center before they come back to their home school... I believe that is the big thing I see, they are going to have to get more than just masonry, cosmetology, or nursing. They are going to have to pick up some core subject areas or some remedial work in those spots.

He also acknowledged the importance of the assessment program, but questioned the reasoning behind requiring the same standards for all students: "I understand the high-stakes exams, I understand the reasoning for it, I understand trying to keep the curriculums aligned so that students throughout the state are getting the same information. I just have a problem when they're all being asked to do the same thing, when they are all not the same."

Summary

To summarize the responses at all the case sites; the interviewees at MSDE and in the four local school districts generally expressed a cautious optimism regarding the high school assessment program and the challenges to career and technical education as a result of its implementation. A persistent thread woven throughout interview responses was the belief or hope that , as a result of the testing program, CTE students will be better prepared for success in technical programs and to enter the work-force. The requirement of "more advanced academics" was touted as a means to improve CTE student performance in technical course offerings. The emphasis on academics, preparing for

further education rather than simply acquiring technical skills, and preparing for the work place were common themes across interviews, particularly with the state and district level administrators.

In general, the two lead state and district CTE administrators were in agreement with the local directors concerning the value of the increased emphasis on advanced academic skills compared to technical skills for CTE students. A divergent opinion surfaced at the local school sites where more concern was shared for students being forced out of opportunities to enroll in CTE courses. Whereas the principals and department chairs did acknowledge the importance of increased academic skills for students, they also recognized that all students may not achieve to the same levels. The differing opinions may be a result of the school personnel's closer proximity to students on a daily basis where they observe firsthand the varying ability and achievement levels demonstrated by their students, while the state and district administrators are removed from personal contact with students and rarely witness their daily struggles to master academic concepts and skills.

At the school sites, the challenges that the testing program presents to daily operations such as scheduling as well as providing assistance and remediation to prepare students for the tests were highlighted much more than at the state and district levels. Again, the daily exposure to logistical issues by school site personnel may have made this a primary concern.

When looking at the responses in reference to different CTE delivery models, the technical teachers at sites where the academic and technical teachers were located in the same buildings (comprehensive technical high school and community high school with

CTE component) were more in tune with the assessment process than their counterparts at the two career centers. The technical teachers at the technical high school and the community high school with CTE tended to demonstrate a more informed knowledge base in reference to the assessment program and concern for preparing students for success on the tests. With some exceptions, the center-based technical teachers were generally not as informed about the testing program or interested in accepting responsibility for assisting in preparing students for the assessments.

The viewpoint of the six principals, including the two from the community feeder schools, revealed similar concerns regarding the testing. They referenced scheduling as a concern numerous times, citing examples of students missing opportunities in CTE courses as a result of “doubling” of academic classes and enrolling students in remediation programs. The reallocation of limited resources or money to the testing program and away from CTE programs was also a subject of concern shared by the principals. The principals were in agreement in the acknowledging limited resources and that, when something has to go, it will not be in the tested areas but may possibly be in career and technical education.

Table 4.1.a. Research Question One: What are the perceived challenges to career/technical education programs as a result of Maryland's high-stakes testing program?

Maryland State Department of Education

Interviewee	Responses
Assistant Superintendent of Planning, Results, and Information Management	<p>I don't see any difference between a career/tech approach and a regular high school approach. If they don't have those core skills that we measure in English, algebra, government and biology, they won't be successful...they're going to struggle... I would say that I don't think there's going to be any challenge for you guys (CTE).</p> <p>All the evidence is out there is that once passing becomes a graduation requirement, there's a big, typically a fairly significant jump over a very short period of time...</p>
Assistant Superintendent of Career & Technical Education	<p>It can only support whatever we do in career and technology education....getting people's attention focused on the fact that every student, particularly students in career and technology education career paths need more advanced academic achievement....every kid needs algebra, every kid needs geometry.</p> <p>Well, I think on the positive side..., the four examinations that are typically associated with ninth and tenth grade...it will give us students that are better prepared for the technical content in career and technology education. On the challenged side, what concerns me is if we use old approaches to supporting student learning...if we don't change our instructional strategies in our math and science, social studies, and English courses...I think there could be some adverse consequences to high-stakes testing...We need to double-dose, we need to be doing catch-up for those students who are coming into the ninth grade without the requisite knowledge and skills to be successful in algebra...then we will be in good shape. It is just going to require adults to take an active role different than we have in the past.</p>

Table 4.1.b. Research Question Two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Maryland State Department of Education

Interviewee	Responses
Assistant Superintendent of Planning, Results, and Information Management	<p>I think in retaking those tests, let's say they don't all pass the first time, then how any high school works to remediate or provide appropriate assistance so that those kids pass, will be something we may want to talk about... there's a lot of discussion about how that might happen... I don't know how far you guys (principals) have started to think about what we are going to do for kids who take one of those HSA's and don't pass.</p> <p>If students don't have those core skills, in English, math, biology, and algebra data analysis, or government, they're going to struggle in not only your program, but also once they leave your programs... Can those programs (CTE) be customized, or not be customized, but at least support the reading target or the writing target that may be holding them back in English? I don't think anyone has ever done that kind of training or curriculum work for that person who is teaching CTE to support when they are using text and asking kids to write... They're not taking over the reading job, but they're supporting it and that's being a challenge for some folks. Most of the older folks like you and me.</p>
Assistant Superintendent of Career & Technical Education	<p>Yes, we have just implemented as of November 2003 our policies and procedures for the development of the continuous improvement of CTE programs... our policies speak to the issue of academic alignment... we then adjust and align the career and technology education program to integrate the appropriate academic content... having students understand that CTE often times is the application of what they are doing-algebra, geometry and English. I think we have done a lot... we work very closely in our division with our colleagues in the Division of Instruction, working on the voluntary State curriculum.</p> <p>We (CTE) have opportunities to influence and provide examples of the application of high school assessment areas so that student learning can be supported across that student school base; so they don't think algebra is something we only do at 9:35 am, but that algebra is something that is part of the work I do in my auto mechanics, in my cosmetology class and in my engineering class – that kids see the relevance of it. We have a great opportunity to help kids see why it is important to be in school... So I think that's one thing CTE can really step</p>

	<p>up to the plate and needs to take that leadership role... We can look at where our programs might be able to buy additional time, looking at some of our six credit programs in CTE which might not need to be six credits. We might need to look at how we use our time in a better fashion, so that for students needing more intensive academic assistance, they could have that time.</p>
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Table 4.2.a. Research Question One: What are the perceived challenges to career/technical education programs as a result of Maryland’s high-stakes testing program?

Comprehensive Technical High School (Kennedy)

Interviewee	Responses
Local Director	<p>There’s impact on scheduling, our mission is to get students through a sequence of courses to be ready for employment and we are already finding challenges to get the full sequence of a career completer through... to get all four credits...the doubling-up of algebra, plus algebra and reading assistance too... takes away time in the schedule.</p> <p>Well, we are working on not letting teachers get lost in the effort to produce highly academically able students, not letting teachers get lost, because it has a significant purpose in the lives of many students and this with over 20,000 kids who take a completer course, and about 15,000 kids on a pathway to finish, they are in completer courses, so we are talking about a lot of kids, which demonstrates to me that CTE courses meet a need, and I don’t want to remove that opportunity for children... so I think the challenge for us is to be front and center in the public eye, to get in front of our administrators, show our successes because so much focus is on data, on those test results.</p>
Principal	<p>Well the biggest challenge is going to be, and this has been a challenge for years is being able to support it financially. If monies are put in targeted areas, the question will be what can be eliminated again... in the past the first things that have gone have been some of the career and tech programs... It comes down to dollars and cents and how much of this can be supported... if it turns out you have to eliminate a program, that (CTE) would probably be the first to go... on a local level, that’s already occurred here, where a number of programs have already gone by the wayside; example: masonry, carpentry, electricity...when it came to making decisions about staffing, it just wasn’t in the cards, and those disappeared first.</p> <p>Will more time need to be placed into those things tested? Our career/tech offices have been incorporating as many requirements that are needed for the kids into those programs.</p>
Academic Department Chair (Math)	<p>No, I think for the most part, the career and tech teachers see it as not impacting them. I think they think it’s the academic teachers that are responsible for it.</p> <p>Well, fortunately here, our culture has always been that they were important tests so, that our children are doing ok. But when it gets to the point that we have some non-diploma bound students, I think that’s going to be a huge impact on instruction, and those kids would be in career and tech programs.</p>

<p>CTE Department Chair (Health Occupations)</p> <p>CTE Department Chair (Automotives)</p>	<p>I think it's a matter of being able to connect with those (the tested subjects), because high-stakes tests are here to stay. So we have to adapt what we're doing, not changing our curriculum, but we have to look at how we assess students and sometimes make some adaptations so that we are in line with those tests.</p> <p>We need to look at how we connect with those academic fields and then reinforce what we can from the testing. We're administering tests that are going to be something familiar to the students so that they are better able to handle those tests. I see it having a very positive impact on career and technical education. We seem to think of CTE programs as being aside and apart from academic studies, but when you take a holistic view of them, we realize that all of this is part of the education process.</p> <p>Oh, yeah, indeed I do, challenges with respect to the quality of work that the student puts out. Because this student realizes he is under the gun. He realizes that. Sometime ago there was real definite boundary between academic and career and technology education, a lot of parents were quite presumptuous as to the degree of difficulty of our coursework. They thought what we did was easy and dirty. But with this alignment, parents realize that what we do requires the same amount, if not more, concentration of and on academic and scientific principles.</p>
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Table 4.2.b. Research Question Two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Comprehensive Technical High School (Kennedy)

Interviewee	Responses
Local Director	<p>Well, we have had to align our mission with the master plan and by virtue of that, we have the high-stakes testing, HSAs, MSAs are inherent in that master plan. So, we very much aligned our mission with supporting the system's efforts to have students succeed on high-stakes testing.</p> <p>We started doing class matches, I'm going to guess 3 or 4 years ago, to align out programs to demonstrate that technical skill and academic skills needed by, let's say system networking programs, also corresponds with math and science and language arts skills the students would need entering the high-stakes testing... And the instruction has changed. We absolutely are holding workshops, staff development, on you know, how to write sample test items that look like what you'll find on an HSA, or more recently, MSA. We did that for years for end-of-course exams. So we've definitely changed the curriculum and staff development to focus on high-stakes testing including the SAT's... They (CTE teachers) often have days where they would break-up into departments and then each department would be focusing on their content and how it relates to testing.... But they (high-stakes tests) have affected curriculum and instruction, but I feel better. That's not a complaint at all, I think it's an improvement in focusing both the academics and tech. It's just more work.</p>
Principal	<p>...if they (CTE courses) are not enhancing and/or giving us what we need within this building to help our kids to be successful as far as these testing situations are concerned, than they will either have to adapt to what we need, or they will, just much like the dinosaur, disappear from the face of the earth...</p> <p>If we start with appropriate assistance as mandated, or we have to have programs in our comprehensive portion of our school, that we didn't before to meet the needs of the kids, this could impact the programs... there could just be individual issues for students that may not be able to stay in this type of program and may have to go back to a standard, comprehensive school as opposed to a career and tech school such as this one... we have had them take the subject twice a day, which is not my favorite thing to do, but we will do it.</p> <p>They (CTE director's office) are in the earliest stages, but they have worked aggressively in those offices to take a look at our "Blueprint for Progress" for No Child Left Behind, taking a</p>

<p>Academic Department Chair (Math)</p>	<p>look at what is being asked of as far as the future is concerned, as far as testing, etc. and they are working to put as much as they can into their program areas to dovetail with the other programs. (tested areas)</p> <p>We currently are the only high school in the county that does not offer algebra with assistance, which is a double period of algebra for students who are not your traditional algebra 1 students... the trend in this county is for them to take double periods of algebra. And, I think the pressure will be on... Or more children are going to have to be identified as non-diploma bound... there are kids who do a marvelous job in the hands-on environment and don't do anything in an academic environment. And this program says everybody has to be academic.</p>
<p>CTE Department Chair (Health Occupations)</p>	<p>Yes, we have a program here, it's called, "Test You," that's going to be implemented with our students and that is specifically to help with SAT testing. We also have an "SAT Word of the Day" that we are supposed to incorporate into our lessons to help our students understand these words, so we do work on vocabulary. As well, the career and tech teachers developed our own career and tech SAT plan to help our students.</p>
<p>CTE Department Chair (Automotives)</p>	<p>I see more of the high-stakes assessment mechanisms in all programs or certifications. My particular program now has a governing body with respect to curriculum delivery that is NATEF. I think all of these things work on the premise of high-stakes assessments... We're trying to raise the national standard of curriculum delivery into all of our programs, and I think they are using high-stakes as a model for that.</p>

Table 4.3.a. Research Question One: What are the perceived challenges to career/technical education programs as a result of Maryland’s high-stakes testing program?

Community High School with Career Tech (Truman)

Interviewee	Responses
Local Director	<p>No, I don't. All of the lower level academic courses have been eliminated and all students take advanced academic English, academic earth science, world history and a minimum of Algebra 1... we encourage our career and technology students to take advanced placement courses.</p> <p>I think career and tech students will fare as well as any other student on any of the assessments... I think the issue is that we have an obligation to every student that sets foot in our school system to provide them with the most challenging academic program that we can provide them, and differentiate instruction to best meet their needs... I think we need to stay current... the world is changing and career development is an important issue with all of this and we've got to keep current with industry and its just another reminder of that.</p>
Principal	<p>I have reservations about anything you put extra emphasis on; anything that measures a school and an individual student at that school will receive higher priority than electives.</p> <p>We're bringing on academically challenging new CTE programs. Will that delay those programs because we are going to focus on the HSAs? We will start teaching a pre-engineering strand for CTE's next semester, and in the fall we're set to start as a National Finance Academy... and I see those just as academically challenging as the courses that are getting ready for four year colleges. ... Maryland is no longer one of those states that has extra money, we don't have a surplus, we have a deficit. So my chief worry as far as CTE courses are concerned is – will the resources be allocated away from those higher level (CTE) courses to help prepare students for exit exams, and you can't ignore that – the HSAs and MSAs, it judges the school.</p> <p>But the greatest impact would be taking so much resources to get ready for these tests that it would take resources from the CTE program. That is probably the darkest cloud on the horizon for CTE's. We've worked really hard in the last ten years to get into shape, to be something that is very challenging and just as challenging as someone preparing to take all AP classes.</p>
Academic Department Chair (English)	<p>I think it is influencing... we spend more time with ourselves writing models and preparing students for testing, whereas before, I think there was a lot more emphasis on blended instruction... you find yourself now working on writing tests and questions and talking to other teachers about how to prepare for BCR's and ECR's.</p>

CTE Department Chair (Business Education)	<p>Well, you know I think it isolates them... an isolation of all those departments that didn't have high-stakes testing. Not that I want high-stakes testing across the board in all departments, but it really changes the focus. It seems to also, I think, to lessen the importance of those departments... Also, time resources, which I think is most important... I think finances always follow the testing you can put on paper and prove statistically.</p> <p>I'm not sure if it will have any real impact or not... I just feel that with the testing, they are raising the academic expectations, and they'll be able to perform better in all areas. So it is bound to have some kind of positive influence. I don't think they do challenge us or not. The only challenge I see is that kids miss a lot of class... It is a challenge for every teacher here. We all suffer through that. But as far as any challenges for career and technology, not until they make us responsible for having tests that kids have to pass.</p>
CTE Department Chair (Automotives)	<p>It keeps the students more focused on their academics, which is good. The writing skills. I think that's a challenge for them with the BCRs and ECRs. I know the student will know the answer, but they don't necessarily write it out like they should. I have worked with them in the lab before. So I think it's a big challenge.</p>

Table 4.3.b. Research Question Two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Community High School with Career Tech (Truman)

Interviewee	Responses
Local Director	<p>We've worked very closely with all career and technology educators to revise all career and technology curriculum so that it mirrors that of the essential curriculum(of the tested areas), meaning the format is the same, the student performance objectives have been looked at more closely and aligned with national skills standards.... We don't give finals any more; we give end of course assessments just like English, math, social studies and science. All of our end of course assessments in CTE have ECRs, BCRs and SRs., and the students have even remarked in culinary arts that "this looks like a geometry high school assessment I just took." So we try to mirror the academic programs so that CTE students see that the level of expectation is just as high as if they're in English or a geometry class.</p> <p>Certainly if students fail the high-stakes assessments, there are several different scenarios. If they fail an exam, but they've passed Algebra 1, then they are they going to have to retake the course, or are we just going to have to provide remediation or enrichment for them and is that going to cut into a CTE course? We don't know yet. I don't think it will, I think we are going to look probably at other options that schools are going to come up with... I just don't see it affecting our students. I don't see us pulling students out of culinary arts because they have to do 16 hours of remediation for the English 1 test... I think what we need to remember is that career and technology education is one of three mechanisms for a student to graduate. If they don't have two credits of foreign language or an advanced technology, you've got to have four credits in a state approved career and technology program. So that becomes equally important as passing or taking the assessment in English... So I think our teachers for career and technology have to be cognizant of the fact that they've got to support reading and math instruction in the classroom and we provide that kind of staff development to them.</p>
Principal	<p>Yes, when we talk about the (pause), it used to be called the SAT infusion and AP infusion program where we taught test taking techniques for those two tests... we work on the vocabulary that the students will see, we work on the constructive responses ...work on the extended ECR's ... and we try not to do that just in the classes where they're being taught like Algebra 1 or English 9 or 10th grade for reading, but</p>

	<p>do that in every single classroom, including CTE's. I think a side benefit is that many of my career and tech completers have come to see that they're going to have to answer similar questions on similar tests when they are getting ready for their career. The NSE, I believe they are, for my auto tech students, I think are just as hard, if not harder than any HSA or MSA they're going to take in order to get their certification, which we practice also.</p> <p>Well, it has already changed the lessons and approaches and that was a conscious decision on our part...one of the initiatives that is in our action plan is to model all short responses, reconstructed extended responses in all tasks and practice those school-wide...</p>
Academic Department Chair (English)	<p>Not to my knowledge, except I mean in the sense that the style of testing, you know so when you are checking students on information, you do it in the style of high-stakes testing. I think it sends a subtle message to parents and to kids that it is almost an elitist system, you know what we can test by paper and pencil is most important, and so I do think there's a real subtext of messages being sent... I think career and tech teachers are going to have to do a lot more thinking about how to PR their program to allow parents and students to understand how important it is.... There is one other thing too; I think we are spending a lot of time shuffling papers. I think our guidance counselors probably see less of the students, you know, so that they are spending more time helping test coordinators during the time that we used to spend actually working with kids, guiding them into the right pathways.</p>
CTE Department Chair (Business Education)	<p>We've been very dedicated to making our testing in a similar format. We've been trained over and over to do HSA format for our testing questions. We do brief constructed response and that type of thing...so that the students would be familiar with the testing in whatever class they were in and then be ready to perform on the tests.</p> <p>We have changed our test questions to match the high stakes assessments, the high school assessments, so that part we addressed. Enrolling in classes? That is always a challenge for us because we are an elective. I really believe the "High School That Work" program that was implemented six or seven years ago has helped us tremendously,</p>
CTE Department Chair (Automotives)	<p>The only thing I can think of would be like in their test questions. Like brief constructed responses and extended responses and stuff like that.</p> <p>I'm not sure; I can't speak for the other programs. I know that we do in-services and stuff within; you know when the teachers teach the teachers. The only thing I can think of is their writing skills and their reading skills. Reading is big and writing... It's hard to tell what's going to happen. But, I think, if they're, if they have to pass those tests before they receive a Maryland diploma, it's going to be difficult – it's going to be difficult.</p>

Table 4.4.a. Research Question One: What are the perceived challenges to career/technical education programs as a result of Maryland’s high-stakes testing program?

Lincoln Technical Center (Large Career Center)

Interviewee	Responses
Local Director	<p>Well, I think one of the challenges is going to be redirection of resources, probably towards making sure young people have adequate preparation. I guess it’s fair to say, redirection of resources away from our program towards getting kids ready to pass these tests. I think that’s going to be state and local, actually it’s also federal, too; but I think that’s going to be a challenge... I think one of the challenges at some point is trying to keep some kids who are borderline from dropping out of school... So I think the drop out and the resources are two big challenges, and I think the availability of our programs for some kids is going to be a really big challenge. And I think at the state level, we run the risk of being careful that we don’t lose the true mission to help prepare some young people for the labor market... We need to be careful because of schedules and because of some philosophy sometimes, that we don’t lose emphasis, that we don’t lose that we are preparing kids for employment as well as post-secondary, and I think that’s a danger. And some of our systems have done that. So, I think we may be faced with the situation where we’ve got a lot of young people that need additional work in order to be successful on those tests – additional course work, and they may be forced to forego course work in career and tech ed... We’re going to find that those kids who choose career and tech ed are going to be stronger future workers because they are going to have a stronger academic background. But I do foresee that there is going to be a population of kids that may in fact have to make some choices schedule-wise. They can only do so much; they can only fit so many things in</p>
Principal	<p>I think the biggest challenge for us may be in the whole. If kids fail it and have to remediate and keep re-taking, it could lower some numbers in some programs. But as long as our graduation requirements are not the full 32 credits that they can take, it should give them enough room in their schedule to keep putting in our programs... As far as the state level, I’m not exactly 100% sure where we’re headed with that. That failure rate in algebra has got me concerned. I think that’s a pretty substantial failure rate – what’s it about 50% failure rate?</p>
CTE Department Chair (Health Sciences)	<p>With the A day/B day, the students are going to be able to take more course work. It would have affected the number of students and enrollment... students would have to drop this (CTE classes) to complete the algebras, geometry and things they need for the testing... A lot of teachers in the system don’t like the A day/B day.</p>

<p>CTE Department Chair (Construction)</p>	<p>Well, I think the biggest challenge, like I said; going with A day/B day has helped us a lot. The other challenges; students not successful in those assessment tests will then have to either retake classes or have tutoring, or something on the side. It would cause them to go back to their home school and not finish their technical program.</p> <p>I don't see it yet, but I do see some turf battles coming, by that I mean in our county students can receive math and science credit for their vocational class. If they are not doing well in math or science tests, I'm not sure who's going to take the heat on that... which means taking the math credit away and saying you have to take three straight math credits over there (at the home school).</p> <p>They're not the gifted and talented and AP type students, so they are probably going to have a more difficult time on the tests to begin with. And, so if they do have to get put in remedial classes, they're taken out of the center. I mean they won't have the time, or they will just plain drop-out.</p>
<p><i>Feeder School (Jefferson)</i></p> <p>Principal</p>	<p>It may affect enrollment, because kids can double-up on academic classes where they need assistance. It ay become difficult to fit the Vo-tech program into their schedule. The ninth grade tech classes are entry level now. Also the skills for some programs required at the tech center are jumping up. The high caliber students will knock out the tests on the first round. There seem to be fewer less able students now going into the trades, they have become so high-tech... It will be frightening when the tests are actually graduation requirements. When students enter our school in ninth grade already reading below grade level, that portion of the students will really struggle. Some good may come of, it may improve instruction, teachers may be a little more focused... CTE will survive, It is too valuable to fall by the wayside; our society depends too much on the skill students learn in these courses.</p> <p>It has had an affect, although the action taken at the county level to implement the four period A/B days has worked to help eliminate scheduling concerns for students attending the Tech Center.</p>
<p>Academic Department Chair (English)</p>	<p>Okay, scheduling definitely is going to be a factor. Finding time in their schedule to get them in. I think it is going to be difficult for career and tech ed schools to make it, to make the students aware of what they have to offer, because the home school is doing to be so driven by test scores and needing to increase things.</p> <p>Definitely, I definitely see enrollment problems later on because of what I said before, because of not having room, scheduling concerns, the kids aren't going to be aware of what the CTE offers... I think in the last four years I've seen less focus, I guess on attending a career and tech school. And I can't say why, I don't know why. But, I know the ones that have gone through the programs are very driven. They know</p>

	<p>what they want, they go in, they get their credits, they do their job, and come out knowing their field. Whatever it may be – culinary, mechanics, cosmetology, whatever, and I think as a school, we look at it as us and them, and that’s not ending. I think it just needs to be <u>us</u>... Just because we are accountable, I can’t tell a student who really wants to go into cosmetology; sorry, you have to pass your reading test first and then you can figure out where the rest fits in.</p>
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Table 4.4.b. Research Question Two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Lincoln Technical Center (Large Career Center)

Interviewee	Responses
Local Director	<p>A couple of things. Yes, to answer your question, I think a number of things have been done, some related directly to career and tech ed and some not necessarily. We have each of our high schools on the same scheduling system. We all have a four period A/B day... It has allowed us to align our offerings so that kids relatively easily, can flow from one to another... The other has been that we, career and tech ed, are involved with a lot of decisions that are made with our high school folks – in terms of schedules, in terms of proposed graduation requirements. We of course, also provide efforts to remediate, provide students with additional opportunities to learn more... We've been able to dovetail our scheduling into the total high school schedule.</p> <p>I think it is clearly going to impact a kid who is questionable academically. I don't know how else to say that. I think there is definitely going to be an impact. I think it is going to impact a significant number of kids who are special-ed and I'm afraid they're not going to be able to do both. And I think that's a shame... But we may see that we play a bigger role in the future in terms of trying to help extend learning for these kids so they can be successful to pass the algebra, the geometry, and the English tests. I don't think the content of our CTE per se is going to change that much. We have for about 10 or 12 years or 15 years now – we matched up all our content areas against the old Core Learning Goals... No I don't necessarily think our content, I don't see how our content could change that much. If it does, we might just as well have it as another math class.</p>
Principal	<p>Whether it's math, science, or English, we've got to do something to supplement the instruction that the home school is giving and help these kids through those tests.</p> <p>Yes, we started some years ago with unit planning, lesson planning and aligning our lessons with the core learning goals in the primary areas – math, science, English... Outcomes are posted and you'll see the core learning goals identified where they are applicable... we try to in-service our teachers as much as we can on the fact that these kids have to take these HSA tests and try to reinforce or supplement activities in the classroom to help kids with the tests.</p>

<p>CTE Department Chair (Health Sciences)</p>	<p>Well, I do sit in on the SIT, Instructional Leadership Team, and that is something we've talked about quite often in trying to make sure that we're doing enough math, doing more English writing in our classes. We do get related math and related science credit, now that may go by the wayside.</p> <p>It has affected us because our principal is very pro-active.... So you know in our lesson plans, we are mandated basically to have math and science and English kind of spelled out in those lesson plans.... We've had a lot of in-services on how to incorporate a lot of this information into our lesson plans and into our classes.</p>
<p>CTE Department Chair (Construction)</p>	<p>They've asked instructors to implement as much math and science in their lessons as possible, but there again that's based on the instructor's abilities and knowledge.</p> <p>There's no testing going on in our classes here...If a student receives an A in carpentry he may be much better off or worse off than a student who receives an A in Carpentry in another county. There's no statewide test for that.</p> <p>Yeah... I can see, you know, the teachers changing their instructional approaches in one way or another... If they took that time and made it a class period, they could shorten the vocational part to an hour and a half, instead of 2 hours and 15 minutes. And, so your vocational class would be an hour and a half and we get some more math and science.</p>
<p><i>Feeder School (Jefferson)</i></p> <p>Principal</p>	<p>We have conducted lots of staff development for our staff. Training involving blended instruction has been going on for years here. We are involved in the "High Schools That Work" (HSTW) initiative and some of the key principles of HSTW will help our CTE students be better prepared for the high-stakes assessments.</p>
<p>Academic Department Chair (English)</p>	<p>I know there is articulation with our career and tech center, but I don't know how flexible they are... They definitely have staff development, but they don't come into the home school or anything, but I know they have it. It's their school, but I know they have it.</p>

Table 4.5.a. Research Question One: What are the perceived challenges to career/technical education programs as a result of Maryland's high-stakes testing program?

Small Career Tech Center (Madison)

Interviewee	Responses
Local Director/Principal	<p>We haven't seen a big influence on that at the moment. I want to get information on these kids with their testing especially in the area of language arts and math; to tell if our kids are the ones failing, if our kids are the ones passing, so we know what we can do with our two resource people, and how we can aid these kids accomplishing what they have to accomplish.</p> <p>At the school level, it's going to benefit us...we can change the math and English program to give kids what they need...In the district level, it's going to have a negative effect, in fact because we are now going away from teaching what we should be teaching to teaching the tests, whether they say it or not. I think the whole thing is going to be negative in the end. At the state level, somebody's going to realize it some day and one day they will wake up and say – ah – forget it.</p> <p>It will influence us as much as we want to let it influence us... because we're pretty well at times, much to the dismay of the board office, we pretty much operate on our own... CTE teachers would make a faster adjustment than regular high school teachers... If they would tell us what other skills the kids need, we can now adapt to that area, and to whatever is needed...</p>
Assistant Principal	<p>I have no problem with high-stakes testing; my concern is that it could impact career and technology education from the standpoint that parents are going to want the diploma... If they don't pass those courses, counties are going to do remediation, and force kids into making choices that will not permit them to come to the career center.</p> <p>Right now we take in kids in 10th grade, 11th and 12th and a lot of our students are finished with their pathways by their junior year and they are coming back for their level III's by their senior year. What I see this doing is not letting our kids start until their junior year in many cases, later on in their career and the harm that we see to that is that sometimes kids think masonry is for them, or automotives for them, or drafting, or engineering is for them because that's what their parents are into... they find out that isn't for them, and by starting in their tenth grade year they have the opportunity to switch. In their junior year they are going to buy it, and they are going to have to stay with it, if that is indeed their pathway to graduation, because they will not have the option to switch.</p> <p>I think they are going to come at odds. I know at the state level they are trying to get certifications attached to programs and that would be in my mind a way of showing that we upped the</p>

	<p>rigor of our programs and that industry themselves are testing our students; but if high-stakes testing pulls them back and doesn't allow them to be able to give the time to come here, then that could be a problem. At the district level, they are most concerned with that "No Child Left Behind," and that everyone achieve at the prescribed level.</p> <p>I may be repeating, but I could foresee it stopping some students from coming here because of their inability to get here because of the demands back at their home schools.</p>
<p>CTE Department Chair (Health Sciences)</p>	<p>As far as the mission of the career center, I don't really see it changing anything regards to the mission.</p> <p>I'm a little hesitant on the question of high-stakes testing because I haven't paid a whole lot of attention to it, but I don't feel like it influences the career center a great deal. I know they have to pass the basic math and sciences and English portions at the home schools, but I don't think that plays out so much here.</p>
<p>CTE Department Chair (Automotives)</p>	<p>Well, I really don't. I think we need to have some sort of an assessment. I am looking at an assessment in more of the competency-based assessment as to what my students can do that's going to help or benefit what they are going to do in industry.</p> <p>Not really. I think our biggest challenge here in my program is to have some of these kids pass some sort of test in their area. For example, our area is ASE testing, which is done right here in our school twice a year for industry. My challenge is to encourage the better students, or to the students who are very much interested to get involved and take that test and do well on it. Because these are difficult tests (the automotive ASE tests).</p>
<p><i>Feeder School (Adams)</i> Principal</p>	<p>My concern is that as they become the requirement for graduation, that part of our student population involved in remedial courses... I do believe it is going to impact us... I'm concerned about our mid-level academic students, our general level students and our special-ed students. That's the ones I see that could possibly have to become involved in remedial course work.</p> <p>The challenge I see is being able to ensure again that the students continue to have the opportunity to take our career/technical center pathways programs and meet their graduation requirements in the areas of fine arts, physical education, tech ed, and receive appropriate assistance... We are going to have students who are going to be restricted in course selection because of remediation... I see a challenge scheduling-wise and staff-wise. I see it becoming greater stakes for them to get out and recruit kids in their pathways... I see these groups saying, "hey, if I don't do something, then my (CTE teachers) job could be at stake."</p>
<p>Academic Department Chair (Math)</p>	<p>I think it is going to have a lot to do with how these diplomas are hashed out. I think we're kind of in transition, because</p>

	<p>before we had a lot of our courses geared towards the careers and now they seem to be a much higher level and higher level thinking and may be too hard for these kids that we also have going down to the career center.</p> <p>Well, the thing that's happening now is we're running, at least now in math a couple of double periods classes, and then English wants to run some double period classes, and then that's going to influence who can take double period classes at the career center.</p>
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Table 4.5.b. Research Question Two: What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Small Career Tech Center (Madison)

Interviewee	Responses
Local Director/Principal	<p>We now give kids a pre-test, they have an assignment every day to do a basic English assignment, and then we post-test them at the end of each report period. That's just started this year, so if we knew where the weaknesses were, we could directly address it.</p> <p>We're just starting it... The dichotomy is that you have people sitting, I think it is true throughout the state of Maryland, in power positions at the board, who don't have the vaguest idea of what is going on in career and tech ed and it's not a negative; they understand high-stakes testing, but they don't understand how that can influence career and tech, because they don't have an inside view of it. That has to come from us.</p>
Assistant Principal	<p>I work very closely with our master plan for the county and I had input into that and they clearly support CTE over there and they are weaving us in and out of their programs... We're supporting the way kids see tests given, the format, the language that they are given in, and exposure to terms or words. The SAT prep words, we have a "word of the day" in all of our classrooms.</p> <p>I'm hoping in some fashion our county is able to do a system where remediation or extra help can be gotten to students that will not impact either the number of credits that they can earn or the type of courses that they can take...</p>
CTE Department Chair (Health Sciences)	<p>We incorporate a lot of math. I don't know if that's so much in regard to the high school assessment exams, but it is more in regard to what the business community is telling us they want and need. We've incorporated math on a daily journal basis and we started incorporating English this year... they need to be able to read and write efficiently and productively and we're working hard.</p> <p>No, I don't (referencing CTE teachers changing their courses or instructional approaches). My math and English is geared toward my nursing program... Almost all of them have a foreign language and their math and their English, they have it all. So they are dual completers, so I don't really see that. (What about with the other CTE programs like construction, welding, automotives?) I can see a problem there, yeah, definitely, yes. Most of my kids are college prep kids that are doing dual completers, so they're following college pathways... They are really pushing the kids so that they can</p>

<p>CTE Department Chair (Automotives)</p>	<p>graduate. My question on this high school assessment thing is – what happens to the kids that don't? Do they just get a certificate of attendance? And what does that do to their future world of work without a diploma?</p> <p>Oh, I think so yes. We're supporting a lot of math and a lot of English grammar in several ways... we do a journal... We, also in our programs, have students write and prepare orders just like they would in industry... We have an advantage here because it's what they are interested in, if you take a student that's interested in, for example, doing brake work on a car, and I show him how math is critical in doing brake work or measuring brake components, they tend to utilize it more than they would sitting in a plain math class.</p> <p>I think we are going to have to. I think we are going to have to make some changes... But, I would like to see the math teachers give us some guidelines on where the weaknesses are when they do test these kids. That if they've got a problem or whatever. I'm sure they do some pre-testing to see where their weaknesses are before they give these final tests... Yea, I think we are going to have to alter our programs a little bit.</p>
<p><i>Feeder School (Adams)</i></p> <p>Principal</p>	<p>I think that as a system, we are going to have to take a closer look at changing our current approach to how we service our students at the career center that may help in this situation... like trying to divide our career center into half-days. As part of that half-day, they would receive instruction outside of the career pathway and helping the students in those remedial programs or maybe even picking up an English or a science or a math or something else at the career/technical center before they come back to their home school... I believe that is the big thing I see – they are going to have to get more than just masonry, cosmetology, or nursing. They are going to have to pick up some core subject areas or some remedial work in those spots... I understand the high-stakes exams, I understand the reasoning for it, I understand trying to keep the curriculums aligned so that students throughout the state are getting the same information. I just have a problem when they're all being asked to do the same thing, when they are all not the same.</p>
<p>Academic Department Chair (Math)</p>	<p>We used to work a lot with the career center teachers when we had a major tech ed program here... we tried to coordinate, and our classes and course work were more aligned than they are now. (Interviewer: What do you think changed that?) These tests.</p>

CHAPTER FIVE: INTERPRETATIONS OF FINDINGS

Overview

Investigating the challenges posed to Maryland career and technical education programs as a result of the implementation of high-stakes assessments was the intent of this case study. The significance of this research lies in its contribution to the limited body of knowledge concerning the impact of high-stakes assessments to untested curriculum areas in high schools. This chapter briefly reviews the rationale that led to the development of the study and also provides a reflection of the data collected through the research. The reaction to the data is organized in a manner to address the stated research questions. The chapter concludes with suggestions for future research, recommendations to local practitioners and to policy makers, and final thoughts concerning high-stakes testing and the potential impact on career and technical education (CTE).

Significance of the Study

This research study developed as a result of concern that the accountability movement, which is virtually steering the direction and mission of high school education and bringing high-stakes assessments to students, has the potential to also influence the mission and daily operation of untested curriculum areas. Similar to significant events and policies of the past, forces outside the control of local educators continue to set the direction of education programs for students.

Fueled by the 2002 No Child Left Behind (NCLB) legislation, the public's zest for accountability is making a mark on the course of high school education in the early

twenty-first century. This drive for accountability, while sincerely aimed at improving the achievement of all students, is narrowly focused on measurements of purely academic learning goals. In Maryland, high school students currently take high-stakes assessments that measure attainment of skills in English, biology, algebra, government, and also tests in geometry and reading as required by the NCLB legislation. Untested curriculum areas in high schools, while often ignored by education policy makers and government officials with the authority to distribute funding to education programs, are often very important to students' future career preparation.

This study looked specifically at the potential challenges to career and technical education as a result of the high-stakes testing program in Maryland. The field research was conducted in four local school districts, and also at the Maryland State Department of Education (MSDE) in the Divisions of Testing and Career and Technical Education (CTE). In the local districts, data were collected through in-person and telephone interviews with state directors of CTE programs, principals, and academic and CTE department chairpersons. Both interviews at MSDE were conducted in-person.

This research is significant due to the perceived weaker concern for un-tested curriculum areas shown by those involved in bringing high-stakes assessments to high school students. Although a virtuous goal, the desire to hold schools and students accountable for achievement of identified academic skills has the potential to bring negative consequences to important programs overlooked by the testing initiative. This study takes place during the initial stages of high-stakes assessments and is one of the first to investigate the resultant challenges to a specific un-tested curriculum area.

Reaction to Research Findings

Research Question One

What are the perceived challenges to career/technical education programs as a result of the implementation of Maryland's high-stakes testing program?

Summary of Findings to Research Question One

The perceived challenges communicated by participants selected for this research were summarized into four major themes:

- The impact on school and individual CTE student schedules.
- The redirection of resources away from CTE to tested areas.
- The impact on the mission and curriculum of CTE courses.
- The low level of concern due to the newness and obscure nature of high-stakes assessments at this time.

Impact on school and student schedules. School level personnel voiced numerous concerns related to the need to provide remediation and extra assistance to students in the tested academic areas, and also to the impact on scheduling students into CTE courses. While only a cursory mention was made about the impact of academic remediation on CTE programs from the individuals interviewed at MSDE, all CTE district directors and the local school personnel frequently referenced this concern throughout the interviews. While the State CTE Director shared concerns about double-dosing academic courses and the impact on opportunities for students to take CTE courses, local school personnel were even more apprehensive about this situation. The State CTE Director reinforced the belief that CTE students need "higher level academics," even encouraging the practice of

“double-dosing” academic subjects such as algebra and English to prepare students for success in CTE programs. Several local school personnel also shared concerns for students missing CTE course opportunities.

A finite amount of time is available in a student’s four year high school schedule and CTE completer programs in Maryland require a minimum of four credits in a specific course of study, with numerous high school CTE programs involving six to eight credits. This allows very little room in a student’s schedule for remediation or extra academic classes. Setting the issue of available time aside, the matter of extra time in “academic” classes brings reference to the question of the importance of academic (theoretical) education versus technical (practical) education. The routine assumption that more time in algebra or English will increase student achievement in the long term for students accentuates the presumption that students learn more in academic settings. In addition, this may suggest that the pure pursuit of academic learning is better for students, notwithstanding the long-term impact on students’ future career goals. Whereas it is easily acknowledged that numerous technical jobs do require “higher level academics” as referenced by MSDE personnel, it is arguable that a large percentage of career fields actually involve daily use of algebra concepts and skills. On the other hand, the skills students develop through involvement in industry-certified high school CTE programs prove valuable in attaining and advancing in future employment opportunities. Even in 2004, it is still a minority of students who go on to complete a Baccalaureate Degree, and experiences in CTE programs are the last formal opportunities for many students to prepare for future jobs. The acknowledgement of this concern was readily apparent during the local school level interviews.

The scheduling challenge to CTE courses translates into personal impacts on students. Numerous local school personnel shared comments referencing the possibility that students may not have room in their schedules or would be prohibited from taking CTE courses as a result of failing high-stakes assessments. They also reinforced that the students missing CTE classes may most likely be the students most in need of these opportunities. The Lincoln Technical Career Center Construction Department Chair spoke right to the point: “They’re not the gifted and talented type students, so they are probably going to have a more difficult time on the tests to begin with; and so if they do have to get put in remedial classes, they’re taken out of the center. I mean they won’t have the time, or they will just plain drop-out.” His opinion echoes the current research, specifically Amrein and Berliner (2002), in the arena of the unwanted consequences of high-stakes testing: mandated testing may lead to the increased likelihood of at-risk students dropping out of high school.

Redirection of resources. This concern was primarily identified by those responsible for the supervision of local CTE programs: district directors and school principals. Those concerned with paying the bills, funding staffing positions, and providing materials and equipment for CTE programs brought this significant concern to the surface. While not first appearing to be as extensive an issue as that of scheduling, it may actually be more far-reaching in overall impact. A concern not addressed by personnel at MSDE, the redirection of resources is an issue paramount in importance to local administrators. Education is a people heavy enterprise and is expensive; however, career and technical education is traditionally even more costly to establish and maintain than academic programs. The equipment requirements and the continual need for

consumable supplies used in providing students real-world experiences in career related courses are expensive items in school budgets. Even though a portion of the funds are supplied to local schools through federal programs, such as Perkins funding, the money for many aspects of technical education must come from local and state sources. If the pressure for students to achieve success on high-stakes tests of academic subjects forces local and state officials to redirect limited funds away from “other” un-tested areas, then programs such as CTE may suffer. The principal of Truman High School saw the redirection of resources away from CTE programs as potentially the biggest impact resulting from the high-stakes testing, stating: “But the greatest impact would be taking so much resources to get ready for these tests that it would take resources from the CTE program.”

Other local school personnel shared the concern of losing available resources, acknowledging that CTE programs will wither and disappear without adequate funding, even though state officials did not mention funding impacts. This concern was validated during the current (2003-04) school year when MSDE removed restrictions from large sums of money previously designated for CTE programs (State Categorical Funds), giving local superintendents the authority to determine funding priorities. Just as a finite amount of time exists in student schedules; the amount of funds available for all education programs is also finite. If preparing students for success in tested program areas begins to erode the amount of money available for other programs, it may just be the beginning of reduced funding for non-tested areas and possible long-term negative impacts on CTE programs.

Impact on the mission and curriculum of CTE. Both MSDE interviewees referenced numerous times the need for increased academic standards to better prepare students for success in CTE programs. This prevailing thought permeated both interviews and brought attention to the issue of high-stakes assessments actually influencing the mission and curriculum of CTE courses. The local directors also acknowledged the importance of elevated academic standards to student success in CTE programs, but not with the same intensity and frequency as the individuals at MSDE. In contrast, local school personnel continued to focus on scheduling issues and the continued inclusion of academic skills in CTE courses. The goal of increasing academic standards for students entering CTE programs appears to be in the best interest of students; however, it may create yet another barrier that prevents students who really need the technical career skills from enrolling in career and technical programs. If CTE programs become courses only for the students mastering advanced academics, this will inevitably bring about a change in the mission of CTE programs. Even though numerous CTE program completers in Maryland (42% in 2003) graduate as dual completers qualified to attend University Maryland system schools, numerous students still do not complete a college degree and may eventually need to utilize CTE program skills to attain employment.

The intensified concentration on academic studies also disregards the fact that not all students are inspired by a pure focus on academics, leading to student disinterest and frustration. For some students this may result in a recipe for failure, possibly leading to dropping out of school. This is an issue discussed throughout the history of educational philosophy: what type of education is best for students? It is also reminiscent of the late 1800's when Calvin Woodward introduced "manual training" schools to use practical

(vocational) education to encourage and motivate students not inspired by traditional academic education. Later, John Dewey also recognized the importance of a more practical education or, as he referenced it, “education through occupations” (Dewey, 1916, p.309). Presumably, Dewey would agree with the contemporary goal of raising academic standards, and thus avoiding predestining a student into a specific occupational path; however, a fine line exists between raising expectations and excluding those students in most need of technical skills from CTE programs as a result of unrealistic academic expectations. As the CTE director representing Lincoln Technical Center stated: “We need to be careful, because of schedules and because of some philosophy sometimes, that we don’t lose that emphasis that we don’t lose that we’re preparing kids for employment as well as post-secondary. And I think that’s a danger. And some of our systems have done that.” It is easy to get caught up in promoting the need for increased academic accountability without considering the value of “other” skills students need to become successful adults. Focusing CTE programs to serve only the most able students does not reflect the historical mission for vocational education, a mission grounded in the Smith-Hughes Act of 1917. As the Business Education Department Chair at Truman High stated, “It’s going to be a huge problem because we’ve lumped every level of child into college-prep and advanced placement. We have no other level of courses here.”

Low level of concern. Perhaps the most revealing outcome of the research was the noticeable low level of concern expressed by several technical department chairs at the technical centers concerning challenges to CTE programs as a result of the high-stakes assessment initiative. As a group these teachers shared very little knowledge of or concern for the assessment program. Students attending the centers are involved with the

high-stakes testing program at the community feeder high schools, thus isolating the CTE teachers at the centers from the entire preparation and administration process. In fact, on several occasions, tech center CTE teachers responded to questions about the assessments by providing totally unrelated answers. Several references were made to CTE program certification tests, and also to concerns about students not being able to receive mathematics and science credit for courses taught by technical teachers at the center. The somewhat cavalier outlook concerning the assessments was not universal with all school-based personnel; however, the “wait and see” attitude was apparent in numerous responses at the tech centers.

The newness of the testing program, and the fact that at the time of the interviews the State Board of Education had not officially made passing the high school assessments a graduation requirement, may have prompted this lack of concern by the CTE instructors. It was apparent that Kennedy Technical High School and Truman High School technical teachers, who worked in the same school where the assessments were administered, were more in tune with the assessments and the possible ramifications than were the technical teachers at the centers. At these two sites the technical teachers are included in all staff development activities with academic faculty. Unlike the staff at the centers, these technical teachers also share in the ownership of the test results for their schools. Since the students attending the centers are given high school assessments at their home community schools, the technical centers actually have no scores associated with their school. This condition does not create motivation for the staff at the centers to work for better student assessment scores. The Health Occupations Department Chair at Lincoln Technical Center sums it up: “I’m a little hesitant on the question of high-stakes

testing because I haven't paid a whole lot of attention to it, but I don't feel like it influences the career center a great deal.”

Research Question Two

What are the responses to the challenges of the assessment program by schools representing the three different models of delivery of career/technical education in Maryland? (comprehensive technical high schools, community high schools with embedded career/technical programs, and technical centers)

Summary of Findings to Research Question Two

The responses to the challenges to career and technical education programs in Maryland as a result of the high-stakes testing fall into four major areas:

- Aligning CTE curriculum with tested subject areas
- Mirroring tests in CTE courses to the high school assessment tests
- Implementing changes to master schedules
- Implementing minimal or no significant actions.

Aligning CTE curriculum with tested areas. The alignment of and/or matching career and technical curriculum with the core learning goals and to the tested subject areas were actions referenced at all interview sites. This claim was in reality supported through identification of legitimate attempts at modifying CTE curriculum at Truman High School (community high school with embedded CTE) and also at Kennedy Technical High. These two CTE delivery models, with the CTE teachers in the same building as the academic teachers, communicated more actions designed to in fact change CTE courses to reflect the goals tested by the high school assessments. The discussion of

alignment strategies and staff development addressing alignment was more evident in the interviews at these two schools, especially at Truman. It appeared that actually working in the environment where the high school assessments were administered to students provided CTE teachers a higher level of understanding of the requirements of the testing program. In these schools, CTE teachers were actually involved in administering the assessments and, more importantly, were included in building based staff development with academic teachers. These CTE teachers communicated a deeper understanding of the process and the importance of the testing to the school and to students.

References were also made to the alignment of CTE curriculum with tested areas at the technical centers, but not with the same frequency or commitment as at the other two sites. In both cases, personnel at the centers identified strategies to incorporate academics into CTE courses whose origin predated the high school assessment initiative. It was difficult to ascertain if any of the strategies identified to integrate with academics were actually aligned with core learning goals or skills tested by the high school assessments. The impression developed through the interviews was that teachers possessed enough knowledge concerning the importance of the assessment program to feel an obligation to claim alignment with tested academic subject areas; however, nearly all approaches identified at the technical centers did not appear to involve alignment with the high school assessment program. This situation can be viewed from two vantage points; whereas it may be interpreted negatively that the technical centers have not legitimately aligned CTE courses with the tested curriculum areas, the divergent view is that they are maintaining the true integrity of the career and technical programs. Untested subject areas, such as career and technical education, are under constant pressure to align

with and support tested subjects without regard to the negative aspects of diluting the untested curriculum area. Reinforcing tested academic skills in CTE courses takes time, time previously devoted to helping students' master technical concepts and skills. If the situation were reversed, how would academic teachers react to pressure to align their courses with CTE subject content and devote class time to reinforcing technical concepts?

Mirroring CTE assessments to HSAs. The interviews at Truman High (the comprehensive high school with CTE component) revealed a high level of commitment to model all CTE course tests after the high school assessments. All three department chairs interviewed at that site emphasized aligning course assessments with HSA's to familiarize students with the testing format. The teachers also made it clear that they had received staff development in developing tests that incorporate high school assessment type questions. They were also more comfortable than the technical department chairs at the other three sites in using specific vocabulary unique to the high school assessment program. The Truman High Director of CTE shared several pro-active strategies that were undertaken to educate CTE teachers and involve them in the high school assessment process. A purposeful, direct methodology was employed early to make CTE teachers familiar with and comfortable in supporting the state-mandated high-stakes testing. She shared: "We don't give finals any more; we give end of course assessments just like English, math, social studies and science. All of our ends-of-course assessments in CTE have ECRs, BCRs and SRs (short responses)." Her pro-active approach to involve all CTE teachers in the testing process was shared as if this was the only acceptable option. The conversations with the technical department chairs uncovered a unique feeling of

comfort and confidence in the entire process. The Business Department Chair's comment, "we've been trained over and over to do HSA format for our testing questions," substantiated the director's statement concerning staff development for CTE teachers.

An examination of the responses of the four CTE district directors to the third interview question revealed four different approaches to addressing the challenges of the high-stakes testing initiative. While the director of the CTE program at Truman High was proactive in dealing with the assessment preparation through training all CTE teachers in specific details of the testing and setting expectations for implementation of HSA testing practices in classes, the other three directors approached the testing from different perspectives. Kennedy High's (KHS) CTE director shared efforts to address HSA's through aligning CTE curriculum with the district's master plan, and the principal of KHS referenced that the CTE director's office "is in the earliest stages" of preparing for high-stakes assessments. The teachers at KHS also did not disclose any noteworthy efforts employed by CTE teachers at the school to assist in HSA preparation. While the Lincoln Tech Center director continued to reference the recent county-wide change to the four period A/B day schedule, the Lincoln principal discussed "unit planning, lesson planning and aligning lessons with the core learning goals in primary areas – math, science, and English." He also mentioned in-service training dealing with the HSA's for teachers, a claim which was not substantiated by the department chairs. The CTE director of Madison, who is also the principal of the career center, did not offer any genuine actions to address preparing students for success on the high school assessments. At the school interviews, the Madison assistant principal referenced the county's master

plan and the SAT word of the day program, which was an existing initiative. The Department chairs at this school did not demonstrate any depth of knowledge of the testing program, nor did they reveal any genuine strategies currently in place to assist in specifically preparing students for the assessments.

In all four cases, the attitude and approach of the district director towards high-stakes testing was reflected in actions taken and not taken at the local sites to address the high-stakes testing initiative. Throughout the interviews the importance of the county director's leadership approach to the testing initiative was apparent. In the one situation (Truman HS) where the director was pro-active in providing training for CTE teachers concerning high-stakes assessments and in establishing clear expectations of actions, teachers demonstrated a high level of knowledge of the testing program. The teachers also effortlessly used vocabulary specific to the HSA's throughout the interview. The other three sites also demonstrated a reflection of the district director's position concerning the testing initiative. The other directors were not as pro-active in their approach to the testing program, and this attitude was also conveyed at the school sites through the interviews with department chairs. This suggests that the district level CTE leadership is a significant factor in establishing the approach that CTE teachers take in addressing a major initiative such as high-stakes assessments.

Altering school schedules. Several individuals at different sites identified the challenge of potential lost time in career and technical courses as a result of ongoing and future test preparation activities such as remediation and intervention strategies as well as the practice of "doubling-up" academic tested courses. While this concern was identified at all case sites, the Lincoln Technical Center interviews revealed a recent county-wide

schedule change which helped alleviate the concern. Prior to the implementation of the four period A/B day schedule, which allows students to earn 32 credits in four years, they were experiencing low enrollment at the CTE center. The tech center principal was pleased with the increased enrollment during the first school year of the new schedule. Noticeable increases occurred in CTE class enrollment figures even though the district was concurrently implementing wide scale “doubling up” of academic classes. All personnel interviewed in this district, including the CTE director, principal, and academic and technical department chairs gave credit to the new schedule for providing space in student schedules for CTE classes. This schedule was implemented as a result of a district-wide initiative directed by the superintendent of schools. Whereas the new four period A/B schedule was instrumental in this district in supporting enrollment opportunities in CTE courses, this was not the reason it was implemented. The superintendent’s decision to mandate the schedule change was based on providing more opportunities for students to take honors and AP classes. Whatever his intent, the schedule change successfully offset the increased academic demands in student schedules and facilitated increases in CTE enrollment. The new schedule was mentioned numerous times during the interviews at this site, and everyone interviewed freely acknowledged the importance of the extra class period in allowing students to enroll in CTE programs.

Although the impetus behind the county-wide scheduling change was not to facilitate student enrollment in CTE classes, the effect may be a successful strategy to address the scheduling challenges resulting from conditions surrounding the high-stakes testing initiative. While Lincoln Tech was not the only school involved in the research utilizing a four period day, it was the only district to purposely acknowledge the schedule

as a strategy to meet the challenges of high-stakes assessments. The impression was that in the other schools, the four period schedule was not a new initiative, nor did the teachers recognize it as an approach related to the assessment program. Of the strategies identified in this research to address challenges posed to CTE as a result of the implementation of high-stakes assessments, this scheduling initiative may provide the quickest and most noticeable impact. Other CTE schools facing enrollment concerns resulting from the emphasis on high-stakes assessment preparation may benefit from investigating alternative schedules providing more opportunities for students.

Implementing minimal or no significant actions. In general, observations throughout the field research at several sites depicted little evidence of significant initiatives at the school level to address current and future challenges to CTE programs as result of the high-stakes assessments. Even though several interviewees acknowledged strategies implemented as a result of the challenges, very few confirmed actions were identified. The references to “SAT word of the day” and a variety of academic/technical integration strategies were apparently made with the belief that these strategies were addressing the skills tested by the high school assessments. It was difficult to determine through this research if the lack of activity was due to newness of the testing program or as a result of a general lack of concern about the assessments and the potential consequences. An air of “let’s wait and see” permeated many of the interviews, especially with several technical department chairs.

At the tech centers, especially at Madison, the tech department chairs were able to distance them and their program from the assessments. These CTE teachers shared different priorities, separate from HSA related concerns, for students in their CTE

classes. Several references were made to ongoing industry standard certification testing of CTE students, as well as the need for state-wide proficiency tests in CTE courses. It was apparent that the technical instructors viewed the certification tests of technical skills as having a more significant impact on their students' future than the high-stakes assessments. The best example of this mind-set was the Automotives Department Chair from Madison Career Center as he referenced the importance of "NATEF" certification and the students' computer and electronic knowledge base. He is confident that students demonstrating strong skills in these areas will receive excellent jobs, with or without a high school diploma, and will be well paid.

The uncertainty of the actual implementation date for the assessments to become graduation requirements for students certainly impacted the reactions of school-based personnel. The daily challenges of operating a high school and teaching students consumes a large amount of time and energy, leaving little vigor to devote to preparing students for a testing program yet to be solidified by the State Board of Education. The lack of real apprehension was almost scary, considering that the state mandate for the tests to officially become graduation requirements for students entering ninth grade in the fall of 2005 was very close to becoming a reality. Even though school-based personnel voiced several concerns for the impact of the assessments to CTE programs, the extent of planning to meet these challenges did not equal the level of concerns shared by interviewees. It appeared that the magnitude of the high-stakes testing initiative, combined with the state board's indecisiveness in the mandate, made it difficult for school-based personnel to focus on specific test preparation strategies.

Conclusions

Limitations of the Study

Several limitations are identified for this case study, which examined the challenges posed to career and technical education in Maryland as a result of the implementation of a state-wide high-stakes testing initiative.

The Actual Data

As all data reported in this research were perceptual data gathered through interviews, I was unable to actually corroborate the perceptions of the interviewees. Although cross-interviewee confirmation of perceptions provides some validity to individual perceptions, all statements given by the interviewees were their opinions and must be taken as that. Additional data sources (e.g., policy documents, additional interviews, on-site observations) may provide alternative findings to those presented here.

Timing of the Study

The field research phase, which included all interviews at MSDE and the four local school districts, was conducted in December 2003 and January 2004. Even though the high school assessments were given to all students in Maryland for two years prior to this date, the program was actually still in the initial stages. The tests were continually topics of discussion in the Baltimore daily newspaper, on talk radio, and in general conversation, and at the time of the research passing the HSA's was not an official graduation requirement for students. Throughout the field research phase, considerable public anticipation surrounded the State Board of Education's impending vote on the fate of the tests becoming graduation requirements. In fact, on the day before the interviews

were conducted at Truman High School, the State Superintendent's alternative diploma plan was outlined in the *Baltimore Sun*. While accountability and testing of students remained in the forefront of educational news throughout the on-site research phase of this study, the fluid nature of the assessment program and the lack of the graduation requirement continued to send mixed messages to high school educators. The vagueness of the testing program engendered a degree of uncertainty in the minds of the district and school-based participants. Had the research taken place after the HSA's were officially graduation requirements for Maryland students, the participants may have displayed different levels of anxiety concerning challenges of the testing initiative.

Site Selection

As with any qualitative study involving "purposeful sampling" (Patton, 1990 p.169) to select "typical cases" (p.173), the data collected during the research is dependent on the specific case sites selected. In Maryland, career and technical education is offered to students through three general formats: comprehensive technical high schools, community high schools with a CTE component, and career/technical centers. An e-mail survey of the twenty-three local CTE directors indicated a high number of tech centers and relatively few comprehensive high schools with CTE components, and even fewer comprehensive technical high schools. The community high school with the CTE component (Truman High), and the two CTE centers (Lincoln and Madison) were strong representative samplings of those two CTE models in the state; however, the technical high school selected (Kennedy Technical High) was not a strong "typical case" for all comprehensive technical high schools in the state. It is common practice for all students in a technical high school, such as Kennedy Technical High School, to be Maryland CTE

completers in a specific technical field such as automotives, carpentry, welding, etc; however, at KTHS approximately one half of the students are not enrolled in CTE program completer courses, but instead attend this school as part of a specific academic magnet program. In fact, further investigation of the nature of technical high schools in Maryland during this research indicated significant differences in the characteristics of CTE programs, school structure, and grades served. Even though technical high schools share similar structure and mission, more variability exists among this model of career/technical school than among the schools represented by the other two models. For this reason, the research data gathered at Kennedy Tech, while valuable to this research, may not accurately generalize to other technical high schools in Maryland or other states.

Influence of the HSTW Initiative

Truman, the community high school with a CTE component, is extensively involved in “High Schools That Work” (HSTW), a recognized high school reform initiative that is endorsed and financially supported by the CTE department at MSDE. Interviews at this site revealed widespread support of academics in CTE courses as well as extensive integration of CTE and academic curriculum. The actions identified at Truman High to address the challenges of the high-stakes testing were certainly influenced by this school’s involvement in the HSTW reform initiative. This comprehensive reform initiative encourages increasing the achievement of higher level academics by all students in high school, including those in CTE programs. Due to the apparent influence of numerous years’ involvement in this reform initiative, the staff at Truman was possibly better prepared to react to the questions referencing the challenges of the high-stakes assessments. This school’s participation in HSTW may also be creating

a false sense of security among staff members in regard to preparing students for the demands of the state high school assessments. As this research was not designed to examine this type influence or make comparisons to schools not involved in initiatives such as HSTW, it was not possible to discern the extent of the impact of the HSTW initiative on the staff's responses to the interview questions.

Strengths of the Study

While certain limitations of this study are identifiable, several important strengths can also be identified.

Importance to Untested Curriculum Areas

With high-stakes assessment programs sweeping the nation, a void exists in the research concerning the potential impact of these assessments on the untested program areas in our high schools. While this study focused on the challenges to career and technical education, other essential curriculum areas also face un-identified challenges as high-stakes assessments become part of the fundamental “grammar of schooling” (Tyack & Cuban, 1995) in the twenty-first century. The importance of experiences in music, art, foreign languages, physical education, and other subject areas to the overall development of high school youth is well recognized; however, these subjects are rarely included in high-stakes testing initiatives. Beyond the effect of the time and extensive emphasis given to preparing students in the tested areas in schools is the impact of the continual reporting of high-stakes testing results. The annual comparing of student scores on tests of English, algebra, biology, and government sends distinct messages to the public that

these are either the only subjects taught in our high schools or the only areas of importance, and thus the only courses worthy of mass testing.

Research in the arena of high-stakes testing tends to focus on its impact on overall student achievement, dropout and graduation rates, minority achievement statistics, and teacher stress level. While these are critical areas to investigate when examining the impact of high-stakes tests, this case-study sets the stage for future research with a different and important focus. The practice of high-stakes testing in the nation's high schools is unquestionably increasing. It is imperative at this juncture to consider seriously the short and long-term impact of the obsession to test and compare student skills in specific academic areas on the subject areas deemed not important enough to test. The comprehensive high school experience includes a variety of diverse opportunities designed to expand the minds of youth as they prepare to enter the work-force as productive citizens. Undoubtedly, academic skills are an important component of this preparation, but not to the extent that the overall high school education narrows and does not meet the needs of all students.

The Approach of the Study

This research was conducted primarily at the local district and school levels in connection with a limited investigation at the Maryland State Department of Education. Given the fact that all responsibility for preparing students for the state mandated tests falls to local district and school personnel, local educators are the individuals possessing the most knowledge concerning the challenges resulting from the testing initiative. A major strength of this research project lies in the fact that the data were gathered from individuals closest to the concern with responsibility for preparing the students for the

tests as well as for the next phase of life after high school. These school-based personnel are in daily contact with students, observing their strengths, weaknesses, and also their struggles to achieve success. These are the individuals who will first recognize challenges to existing programs caused as a result of an outside force such as the high school assessment program.

This case study captured information from administrators and academic and technical department chairs at four technical schools representing the three different delivery models of career and technical education in Maryland and two local community high school sites. The technical department chairs selected are active teachers in representing diverse CTE programs. These administrators and the academic teacher/department chairs were able to share a wealth of knowledge gained through ongoing experiences dealing with the high school assessment program. This approach produced first-hand source level information valuable to the overall understanding of what is occurring at the local school level as a result of this state mandated program. The results of the research clearly identified the different levels of concern and attention given to preparing students for the assessments at these six school sites. The information garnered from this limited sampling also revealed the diversity in the reactions at different school sites to the same challenge and also raised the question of how these different responses will eventually affect student success on the state assessments.

The Timing of the Study

While identified as a limitation of the research, the timing of the study was also an asset. High-stakes accountability testing is a relatively new practice in American high schools, and it is still in the developmental stages in Maryland where this research was

conducted. This contemporary initiative will undoubtedly leave a well defined mark on the face of high schools in the next several decades. Policy makers responsible for setting directives requiring high-stakes testing for students are currently functioning to some extent in the dark as to the future impact of the mandates. Recent educational history does not illustrate the impact of high-stakes testing programs on untested subject areas. It is only in the course of the ongoing experiences of high stakes testing and through research such as this case study that a picture will begin to develop of the actual impact to other curriculum areas and to the overall high school experience for students.

Concurrent with the actual case-site research phase (2003-04 school year) of this study, the Maryland high school assessments continued in a state of flux and were frequently in the spotlight of news coverage. Even though school officials were purposely preparing students for the assessments, the tests were not officially graduation requirements and were still in the developmental stages in the third year of field testing. The vote to make passing the tests a formal requirement to earn a Maryland diploma was scheduled to take place during the summer of 2004. During the time frame of the on-site interviews the State Superintendent of Schools proposed a plan offering multiple diplomas to students in Maryland high schools. The plan even included a county certified local diploma option. The State Association of Local Superintendents, not in favor of locally endorsed diplomas, countered with a plan to use a system of composite scores on the four tests rather than a requirement that students achieve a specific passing score on each test.

During the 2003-04 school year, schools received results for the assessments given during the preceding school year in January and May. These reports provided

information concerning individual student scores on the assessments; however, the data were not specific enough to allow schools to begin to identify and address deficient areas. Reports containing extensive information concerning individual schools and district performance on the assessments were also available to the public on the MSDE website (www.mdreportcard.org). Although very much a part of high school education in Maryland at the time of this research, the assessments were continually evolving and presenting numerous unidentified challenges to high school educators. This presented an opportune moment to conduct this case study, a point in the implementation of this major testing initiative where uncertainty and anticipation might be expected to surround the program.

Recommendations

For Future Research

A contemporary education initiative in its early stages, the high-stakes testing initiative presents several potential avenues for future research. For example, the unanticipated discovery of the extensive involvement of one school site in the HSTW initiative presents an obvious research focus. This development brought to the surface the opportunity of conducting studies comparing the success on the tests of schools involved in specific reform initiatives to other high schools.

As the testing program continues, follow-up studies similar to this case study examining the actual impacts to career and technical education resulting from the high-stakes testing initiative in Maryland are recommended. Studies of this nature may focus on actual data that would indicate any possible impacts to CTE programs following the

implementation of high-stakes assessments. Specific areas of data collection could include pre and post assessment comparisons in the following areas: CTE student enrollment, number of State CTE completers, and resources (money) available to CTE programs. After the assessments are in place, studies to compare assessment scores of CTE students and non-CTE students will provide insight into the academic proficiency of CTE students. Research is also recommended to investigate the impact of remediation and intervention on student CTE enrollment patterns.

Research similar to this case-study investigating the possible challenges to other untested curriculum areas would also be valuable to the body of knowledge surrounding high-stakes assessments. Future research concerning the long-term impact on students in Maryland as a result of high-stakes testing is essential. Questions addressing whether the high-stakes testing initiative achieves the desired increases in student achievement as well as how the assessments impact student promotion, dropout, and graduation rates are also worthwhile research topics.

To Practitioners

As the high-stakes testing movement continues to evolve, it will be valuable for local school personnel to monitor the actual impact of the assessments on numerous aspects of high schools including untested curriculum areas, specifically career and technology education. As detailed in the review of literature and through these research findings, there are several areas that can be monitored. It will be important to follow the enrollment numbers in CTE courses and the number of students completing CTE programs as the testing program continues. This can also include monitoring the number of CTE courses that students complete to see if there is a tendency for students to

complete fewer credits in their completer areas as a result of testing remediation and intervention practices. Local school personnel can also compare HSA results of CTE students and those of the general population.

As it is probable that CTE teachers do not possess allskills needed to integrate HSA skills into their programs, staff development needs to be provided involving strategies for CTE teachers to support tested academic skills in CTE courses as recommended by the MSDE director of the HSA program. Many CTE teachers enter the teaching profession directly from the workforce without formally completing a baccalaureate degree in education. Most likely these teachers are not prepared to offer the necessary strategies to assist CTE students in preparing for success on high-stakes assessments and local school administrators will need to provide this training for teachers. And as outlined by the local director/principal of Madison Career Center it will be critical for local schools to obtain demographic data on specific student performance on the assessments to provide appropriate intervention and remediation for the students not achieving success.

To Policy Makers

Even though improving schools and increasing student achievement are worthwhile and noble goals, implementing sweeping initiatives aimed at achieving these objectives should be carefully thought through and entered into only with caution. Many factors surrounding a major change, such as requiring students to pass high-stakes assessments in order to earn a high school diploma are difficult to anticipate. The current scope of a modern high school has evolved into a diverse experience designed to meet the needs of students with a wide variety of needs, abilities, and interests. An initiative

resulting in the narrowing of the overall experiences of high school students must be entered into with caution, with the long-term effects in mind. For this reason, a recommendation is made to conduct comprehensive investigations into the impact on all aspects of schooling before implementing state mandated requirements and programs, such as high-stakes assessments of specific subject areas. .

The literature surrounding high-stakes assessments and this research indicate that in the furor to impose high-stakes accountability tests on schools and students even for very good reasons, unintended consequences may result. Cooper, Fusarelli, and Randall (2004) also voice concerns referencing the overall impact of high-stakes assessments:

Other critics fear more examples of ‘blaming the victim’ and demonizing poor and children of color, rather than working to improve their circumstances and their schools. Teachers, responding to pressures will jettison the liberal curriculum and concentrate on test-prep subjects and skills, making school both less interesting and less engaging. Sports, music, art, foreign languages, and many of the sciences will be marginalized, while tedious rote and repeat answers will be valued as useful in raising standardized test scores. This issue is as old as public universal schooling; and the future will be no different. (p.300)

Numerous examples of fusing academics into CTE programs were discovered throughout the interview phase of this research. Given the fixed number of hours in a school day, adding anything into a course equates with removing something else. CTE courses can only absorb a limited amount of additional academic instructional time without shortchanging the technical aspects of the programs. Without doubt, CTE teachers will eventually begin supporting student achievement of the academic skills measured on the

high school assessment tests, but at what cost? These career completer programs require students to comprehend a vast array of unfamiliar technical concepts and to demonstrate numerous skills. Successful mastery of these specific talents requires extensive practice, and it is often overlooked that students are developing marketable skills in CTE courses. This is especially important to students not attending college or other post-secondary education. As referenced in several interview responses, these are most likely the same students who will experience difficulties passing the high school assessment tests. Educators must exercise caution when removing these students from CTE courses or diluting the CTE class content to reinforce tested academic skills, as these practices involve making decisions that impact student futures.

Even though narrowing the curriculum is more often than not an identified consequence of implementing high-stakes assessments for high school students, overlooking the long-term value of career and technical programs to students' future careers can become a more important concern. The significance of reinforcing academic skills cannot be argued; however, if this occurs at the expense of losing the mission of high school CTE programs, are we doing what is best for all students? The director from Lincoln Tech Center shared concerns that CTE programs were losing the mission of "preparing kids for employment as well as post-secondary education, and I think that's a danger." His apprehension for the demise of the true mission of CTE programs is a concern that policy makers should heed. James Rosenbaum also emphasizes the importance of programs offering students more than pure academic preparation in his text *Beyond College For All*:

... policy has viewed work-entry problems too narrowly. In focusing on college goals, not job goals, policies have been overly concerned with academic deficiencies rather than other deficiencies. They have put too much emphasis on internal motivators rather than external incentives. As a result, policies underestimate how many students are work-bound, they do not help some students develop soft skills, and they do not help many students prepare realistically for their careers. (p.265)

The question of what type of schooling is really best for students continues to pervade many aspects of education policy, specifically in the arena of theoretical vs. practical education. In this situation; “theoretical” is the tested academic subject areas, and “practical” represents the untested curriculum areas, specifically career and technical education. Is one better than the other? Is it best for students to experience only one or the other? Or, hopefully for students, the two will live in harmony in our public high schools supporting each other and, in the process, help all students achieve success through an education program suited to their individual needs, abilities, and interests.

Final Thoughts

Throughout history numerous forces outside of education have impacted career and technical education programs and helped shape them into their current status, forces such as political pressures, economic needs of the nation, and changes in funding sources. Career and technical education programs will surely continue to evolve as a result of education in general changing to keep pace with the needs of students. High-stakes

testing is a significant external force, a force strong enough to shape the direction of high school education and influence the future direction of career and technical education.

While this research set out to answer questions about the influence of high-stakes testing on CTE programs in Maryland, it also raised several questions. Through raising the academic bar for students, will CTE become a program for only the “more able” academic students? If this becomes a reality, what does the future hold for the “less able” students not included in CTE programs as a result of the extra academic demands of preparing to take and re-take the assessments? These students were traditionally well prepared for productive careers through career and technical education. Are these not the students most in need of career skills? If students have not achieved the academic skills needed to pass the assessments through numerous years of academic instruction, what proof exists that spending more time in academic classes (double-dosing) will change this pattern? Is this really the best use of these students’ time during their final years of formal schooling? Is more time in academic classes really the answer?

In May 2004, as this research project was in the final stages, the national Association of Secondary Principals (NASSP) shared concerns with the proposed reauthorization of the Perkins legislation through the U.S. Department of Education’s *Secondary and Technical Education Excellence Act of 2003*. Validating the concerns of some who participated in this research, there are already recommendations to shift funding away from high school vocational/technical education programs, making the grants competitive and with emphasis on community college technical programs. The *Blueprint for Preparing America’s Future (2003)* states:

The proposed new Secondary and Technical Education Program would shift from providing traditional vocational education to an entirely new focus on supporting academic achievement at the high school level and on providing high-quality technical education at the community college level that is coordinated with local high schools. (p.2)

The NASSP response shares that:

Dismantling the current Perkins program diffuses the focus on career and technical education. Many students gain interest and a better understanding of the application of academics through their career and vocational training. Secondary schools need both academic and career programs. (NASSP, 2004, p.2)

This national debate may become a state-level debate. Minimally it demonstrates that the concerns for students and CTE programs raised through this case study are real and need to be taken seriously by educators and education policy makers.

As educators face the challenges of preparing students for high-stakes tests, countless decisions are being made. Because these decisions are impacting the future of numerous students, it is critical that they be informed decisions. Educators need to consider the overall education of the individual, not just test scores, before altering the scope of a student's overall education experience. A suggestion is for policy makers to visit career/technical high schools across the nation before implementing legislation and make decisions that may virtually dismantle vocational/technical education. Learn more about the population of students currently served by career and technical education. Talk with the students and gain a better understanding of the importance of these CTE programs to them. Educators, monitor the impact of these initiatives on specific programs

such as career and technical education and carefully consider the consequences for students before it is too late.

Appendix A

Perceptions of State and District Personnel about the Mission of High-Stakes Testing and Career and Technical Education in Maryland.

State and District Personnel

Interviewee	Response
MSDE	
Assistant Superintendent of Planning, Results, Information Management	To see that all students are able to meet objective performance standards...a replacement of the old functional testing program.
Assistant Superintendent of Career & Technical Education	Increase academic, career and technical skills of students so they graduate from high school prepared for the next steps in a career, as well as further education.
District Directors	
Comprehensive Technical High School (Kennedy)	Preparing students academically, technically and interpersonally for employment and post-secondary education, we focus on the whole child.
Community High School with CTE component (Truman)	We do not have a separate mission for career and technology education... the purpose of high school is to prepare students for post-secondary education, training and the world of work.
Large Career Center (Lincoln)	Well, pretty much I think what I would say is that career and tech-ed's job is to prepare young people for post-secondary education and for the world of work, that's it in a nutshell, we do both.
Small Career Center (Madison)	Prepare kids for work and future education, emphasizing work ethic, basic skills in math and language and basic competencies.

Question No. 1

What do you see as the mission of the high-stakes testing program in Maryland?
To: Assistant Superintendent of Planning, Results, Information Management.

What do you see as the mission of career and technical education in Maryland?
To: Assistant Superintendent of Career & Technical Education.

Appendix B

Perceptions of Local School Personnel about the Mission of High-Stakes Testing and Career and Technical Education in Maryland.

Local School Personnel

Interviewee

Responses

Interviewee	Responses
<p>Comprehensive Technical High School (Kennedy)</p>	
Principal	To explore avenues beyond the comprehensive high school
Academic Department Chair (math)	To provide all of the mathematics instruction... this year we are servicing all of the intensity five students.
CTE Department Chair (health-sciences)	Provide students with hands-on skills, technical skills needed in today's work-fields...a skills component, an academic component and a job-readiness component.
CTE Department Chair (automotives)	Provide a seamless transition between what's taught at school and what's expected in real life.

<p>Community High School with CTE (Truman)</p>	
Principal	The same as any of the programs... We don't want any difference between an elective and academic and a career tech.
Academic Department Chair (English)	Create life-long learners and preparing students for the outside world...educating students for whatever they choose to do beyond high school... and the aesthetic side of English as well.
CTE Department Chair (Business Ed)	Preparing young people for a career in work... emphasizing further education... to be ready when they graduate.
CTE Department Chair (automotives)	Link up students with the industry or post-secondary education.

<p>Large Career Tech Center (Lincoln)</p> <p>Principal</p> <p>CTE Department Chair (health sciences)</p> <p>CTE Department Chair (Construction)</p> <p><i>Feeder School (Jefferson)</i></p> <p>Principal</p> <p>Academic Department Chair (English)</p> <hr/>	<p>Provide entry-level skills in 26 different career programs...and get them out in the world of work with those skills.</p> <p>Cooperate with businesses in the community and we do a lot with parents and businesses to try to make our students successful.</p> <p>Exposure, to introduce students to the variety of job opportunities out there... and to get them proficient in some (technical) area.</p> <p>To provide students opportunities to explore career interests... to help them find their niche in the world of work.</p> <p>Increase reading scores; provide rigorous academic electives as well as academic courses. Our HSA drives the ninth grade curriculum.</p>
<p>Small Career Tech Center (Madison)</p> <p>Principal (Assistant)</p> <p>CTE Department Chair (health sciences)</p> <p>CTE Department Chair Automotives)</p> <p><i>Feeder School (Adams)</i></p> <p>Principal</p> <p>Academic Department Chair (math)</p>	<p>Prepare students for success in the world of work, their life after secondary education.</p> <p>Prepare students for the world of work and work ethics and increase their math skills and general technical skills.</p> <p>Provide a safe learning atmosphere that's as close to industry as possible... our whole purpose here is to provide students with a foundation.</p> <p>For all students to find a program that is suitable for their interests and their needs... provide programs that will meet the needs of students in today's economic profiles.</p> <p>We are preparing students for two Maryland tests, one is algebra and one is geometry... we are also trying to increase achievement and enrollment in AP classes.</p>

Question No. 1

What do you see as the mission of the high-stakes testing program in Your School?

To: All Local School Personnel

Appendix C

Perceptions of State and District Personnel about How High-Stakes Testing will Influence the Mission of Career and Technical Education in Maryland.

State and District Personnel

Interviewee	Responses
<p style="text-align: center;">MSDE</p> <p>Assistant Superintendent of Planning, Results, and Information Management</p> <p>Assistant Superintendent of Career & Technical Education</p>	<p>I don't see any difference between a career/tech approach and a regular high school approach. If they don't have those core skills that we measure in English, algebra, government and biology, they won't be successful...they're going to struggle.</p> <p>It can only support whatever we do in career and technology education....getting people's attention focused on the fact that every student, particularly students in career and technology education career paths need more advanced academic achievement....every kid needs algebra, every kid needs geometry.</p>
<p style="text-align: center;">Local Directors</p> <p>Comprehensive Technical High School (Kennedy)</p> <p>Community High School with Career Tech (Truman)</p> <p>Large Career Technical Center (Lincoln)</p>	<p>There's impact on scheduling, our mission is to get students through a sequence of courses to be ready for employment and we are already finding challenges to get the full sequence of a career completer through... to get all four credits...the doubling-up of algebra, plus algebra and reading assistance too... takes away time in the schedule.</p> <p>No, I don't. All of the lower level academic courses have been eliminated and all students take advanced academic English, academic earth science, world history and a minimum of Algebra... we encourage our career and technology students to take advanced placement courses.</p> <p>Well, I don't have my crystal ball, but I think it may happen, It may impact some kids, but I think it can truly benefit career and tech ed programs, who may not in the past academically been up to the challenge. I think their first goal is that they've got to graduate from high school. So, I think we may be faced with the situation where we've got a lot of young people that need additional work in order to be successful on those tests –</p>

<p>Small Career Technical Center (Madison)</p>	<p>additional course work, and they may be forced to forego course work in career and tech ed... We're going to find that those kids who choose career and tech ed are going to be stronger future workers because they are going to have a stronger academic background. But I do foresee that there is going to be a population of kids that may in fact have to make some choices schedule-wise. They can only do so much; they can only fit so many things in.</p> <p>We haven't seen a big influence on that at the moment. I want to get information on these kids with their testing especially in the area of language arts and math; to tell if our kids are the ones failing, if our kids are the ones passing, so we know what we can do with our two resource people, and how we can aid these kids accomplishing what they have to accomplish.</p>
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Question No. 2:

How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in Maryland?

To: Assistant Superintendent of Planning, Results, Information Management and Assistant Superintendent of Career & Technical Education.

How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in your district?

To: Local Directors

Appendix D

Perceptions of Local School Personnel about How High-Stakes Testing will Influence the Mission of Career and Technical Education in Maryland.

Local School Personnel

Interviewee	Responses
<p>Comprehensive Technical High School (Kennedy)</p>	
Principal	Will more time need to be placed into those things tested? Our career/tech offices have been incorporating as many requirements that are needed for the kids into those programs.
Academic Department Chair (math)	There will have to be a change in focus on arithmetic in career and tech...we are all reading teachers...we focus a lot on curriculum connections in this building... I see the focus changing so it's more algebraic.
CTE Department Chair (health-sciences)	We need to look at how we connect with those academic fields and then reinforce what we can from the testing. We're administering tests that are going to be something familiar to the students so that they are better able to handle those tests.
CTE Department Chair (automotives)	I see it having a very positive impact on career and technical education. We seem to think of CTE programs as being aside and apart from academic studies, but when you take a holistic view of them, we realize that all of this is part of the education process.

<p>Community High School with CTE (Truman)</p>	
Principal	I have reservations about anything you put extra emphasis on, anything that measures a school and an individual student at that school, will receive higher priority than electives.
Academic Department Chair (English)	I think it is influencing... we spend more time with ourselves writing models and preparing students for testing, whereas before, I think there was a lot more

<p>CTE Department Chair (business-education)</p> <p>CTE Department Chair (automotives)</p> <hr/>	<p>emphasis on blended instruction... you find yourself now working on writing tests and questions and talking to other teachers about how to prepare for BCR's and ECR's.</p> <p>I'm not sure if it will have any real impact or not... I just feel that with the testing, they are raising the academic expectations, and they'll be able to perform better in all areas. So it is bound to have some kind of positive influence.</p> <p>It keeps the students more focused on their academics, which is good.</p> <hr/>
<p>Large Career Tech Center (Lincoln)</p> <p>Principal</p>	<p>Right now we are seeing a high failure rate in algebra in our county, and there is going to have to be remediation and that may have some impact. Initially we were concerned...but now we have an A/B four period day schedule so students can get up to 32 credits.... Special needs kids perhaps will have some higher consequences because they will need to pass the tests, but right now we don't see any major impact with this testing on us.</p>
<p>CTE Department Chair (health sciences)</p>	<p>With the A day/B day, the students are going to be able to take more course work. It would have affected the number of students and enrollment... students would have to drop this (CTE classes) to complete the algebras, geometry and things they need for the testing... A lot of teachers in the system don't like the A day/B day.</p>
<p>CTE Department Chair (construction)</p>	<p>It depends on what the county or state does with the results. If a student doesn't pass the exam, does the state send them for remediation?... which means that the student may not be able to take career classes because he may be entirely involved in remediation... I think they are going to find that there are students that will not pass these tests no matter how many times they take them... and I don't know whether the kids will hang in there.</p>
<p>Feeder School (Jefferson)</p> <p>Principal</p>	<p>It has had an affect, although the action taken at the county level to implement the four period A/B days has worked to help eliminate scheduling concerns for students attending the Tech Center.</p>

<p>CTE Academic Department Chair (English)</p> <hr style="border-top: 1px dashed black;"/>	<p>I do A friend of mine works at the Tech Center, and being able to get a science or math credit for courses taken at the Tech School is being questioned. The Superintendent doesn't see it as equivalent.... We have English reflections, it's another academic class, like a support in their schedules...so there's a student who wants to leave and go to the vocational center, and he can't because he's enrolled in biology, English, English reflections, algebra, algebra support...that's five of his eight classes already... and some need corrective reading...they are unable to send that student to get their exploration at the center.</p>
<p>Small Career Tech Center (Madison)</p> <p>Assistant Principal</p> <p>CTE Department Chair (health sciences)</p> <p>CTE Department Chair (automotives)</p>	<p>I have no problem with high-stakes testing; my concern is that it could impact career and technology education from the standpoint that parents are going to want the diploma... If they don't pass those courses, counties are going to do remediation, and force kids into making choices that will not permit them to come to the career center.</p> <p>As far as the mission of the career center, I don't really see it changing anything regards to the mission.</p> <p>Well, I really don't. I think we need to have some sort of an assessment. I am looking at an assessment in more of the competency-based assessment as to what my students can do that's going to help or benefit what they are going to do in industry.</p>
<p>Feeder School (Adams)</p> <p>Principal</p>	<p>My concern is that as they become the requirement for graduation, that part or our student population involved in remedial courses... I do believe it is going to impact us... I'm concerned about our mid-level academic students, our general level students and our special-ed students. That's the ones I see that could possibly have to become involved in remedial course work.</p>

CTE Academic Department Chair (math)	I think it is going to have a lot to do with how these diplomas are hashed out. I think we're kind of in transition, because before we had a lot of our courses geared towards the careers and now they seem to be a much higher level and higher level thinking and may be too hard for these kids that we also have going down to the career center.
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Question No. 2:

How do you foresee the implementation of high-stakes testing influencing the mission of career and technical education in your school?

To: All local school Personnel

<p>Large Career Tech Center (Lincoln)</p>	<p>studies and science. All of our end of course assessments in CTE have ECRs, BCRs and SRs., and the students have even remarked in culinary arts that “this looks like a geometry high school assessment I just took.” So we try to mirror the academic programs so that CTE students see that the level of expectation is just as high as if they’re in English or a geometry class.</p> <p>A couple of things. Yes, to answer your question, I think a number of things have been done, some related directly to career and tech ed and some not necessarily. We have each of our high schools on the same scheduling system. We all have a four period A/B day... It has allowed us to align our offerings so that kids relatively easily, can flow from one to another... The other has been that we, career and tech ed, are involved with a lot of decisions that are made with our high school folks – in terms of schedules, in terms of proposed graduation requirements. We of course, also provide efforts to remediate, provide students with additional opportunities to learn more... We’ve been able to dovetail our scheduling into the total high school schedule.</p>
<p>Small Career Technical Center (Madison)</p>	<p>We’re just starting it... The dichotomy is that you have people sitting, I think it is true throughout the state of Maryland, in power positions at the board, who don’t have the vaguest idea of what is going on in career and tech ed and it’s not a negative; they understand high-stakes testing, but they don’t understand how that can influence career and tech, because they don’t have an inside view of it. That has to come from us.</p>

Question No. 3:

Has anything been done at the state level to align the goals of the high stakes testing program with the goals of career and technical education?

To: Assistant Superintendent of Planning, Results, Information Management.

Has anything been done at the state level to align the goals of career and technical education with those of the high-stakes testing program?

To: Assistant Superintendent of Career & Technical Education.

Has anything been done in your district to align the goals of career and technical education with those of the high-stakes testing program?

To: Local Directors

Appendix F

Perceptions of Local School Personnel about the Alignment of the Goals
of Career and Technical Education with the Goals of the High-Stakes
Assessment Program.

Local School Personnel

Interviewee

Responses

Interviewee	Responses
<p>Comprehensive Technical High School (Kennedy)</p> <p>Principal</p>	<p>They (CTE director's office) are in the earliest stages, but they have worked aggressively in those offices to take a look at our "Blueprint for Progress" for No Child Left Behind, taking a look at what is being asked of as far as the future is concerned, as far as testing, etc. and they are working to put as much as they can into their program areas to dovetail with the other programs. (tested areas)</p>
<p>Academic Department Chair (math)</p>	<p>No, I think for the most part, the career and tech teachers see it as not impacting them. I think they think it's the academic teachers that are responsible for it.</p>
<p>CTE Department Chair (health-sciences)</p>	<p>Yes, we have a program here, it's called, "Test You," that's going to be implemented with our students and that is specifically to help with SAT testing. We also have an "SAT Word of the Day" that we are supposed to incorporate into our lessons to help our students understand these words, so we do work on vocabulary. As well, the career and tech teachers developed our own career and tech SAT plan to help our students.</p>
<p>CTE Department Chair (automotives)</p>	<p>I'm not completely sure that the mission of high-stakes testing is any different from our mission in career and technology education. I'm seeing great similarities in those goals and our goals... I think what we're all doing is significant and contributing to a broad spectrum of exposure.</p>

<p>CTE Department Chair (health sciences)</p>	<p>Well, I do sit in on the SIT, Instructional Leadership Team, and that is something we've talked about quite often in trying to make sure that we're doing enough math, doing more English writing in our classes. We do get related math and related science credit, now that may go by the wayside.</p>
<p>CTE Department Chair (construction)</p>	<p>They've asked instructors to implement as much math and science in their lessons as possible, but there again that's based on the instructor's abilities and knowledge. There's no testing going on in our classes here...If a student receives an A in carpentry he may be much better off or worse off than a student who receives an A in Carpentry in another county. There's no statewide test for that.</p>
<p><i>Feeder School (Jefferson)</i></p>	
<p>Principal</p>	<p>We have conducted lots of staff development for our staff. Training involving blended instruction has been going on for years here. We are involved in the "High Schools That Work" (HSTW) initiative and some of the key principles of HSTW will help our CTE students be better prepared for the high-stakes assessments.</p>
<p>CTE Academic Department Chair (English)</p>	<p>I know there is articulation with our career and tech center, but I don't know how flexible they are... They definitely have staff development, but they don't come into the home school or anything, but I know they have it. It's their school, but I know they have it.</p>
<hr style="border-top: 1px dashed black;"/>	
<p>Small Career Tech Center (Madison)</p>	
<p>Assistant Principal</p>	<p>I work very closely with our master plan for the county and I had input into that and they clearly support CTE over there and they are weaving us in and out of their programs... We're supporting the way kids see tests given, the format, the language that they are given in, and exposure to terms or words. The SAT prep words, we have a "word of the day" in all of our classrooms.</p>

CTE Department Chair (health sciences)	We incorporate a lot of math. I don't know if that's so much in regard to the high school assessment exams, but it is more in regard to what the business community is telling us they want and need. We've incorporated math on a daily journal basis and we started incorporating English this year... they need to be able to read and write efficiently and productively and we're working hard.
CTE Department Chair (automotives)	Oh, I think so yes. We're supporting a lot of math and a lot of English grammar in several ways... we do a journal... We, also in our programs, have students write and prepare orders just like they would in industry... We have an advantage here because it's what they are interested in, if you take a student that's interested in, for example, doing brake work on a car, and I show him how math is critical in doing brake work or measuring brake components, they tend to utilize it more than they would sitting in a plain math class.
<i>Feeder School (Adams)</i>	
Principal	No sir, it has not, and partially the reason for that is that as a system we are trying to establish what the whole system is going to do in order to ensure that these students will still have the opportunity to participate in programs that they have an interest in.. we've fared pretty well on the HSAs and the MSAs, we certainly have areas to improve, but we also know there are going to be students affected by this... this year's seventh graders will be the one's two years from now when students start looking at what they are going to be able to sign up for.
CTE Academic Department Chair (math)	Not right now. We used to work a lot with the career center teachers when we had a major tech ed program here... we tried to coordinate, and our classes and course work were more aligned than they are now. (Interviewer: What do you think changed that?) These tests.

Question No. 3:

Has anything been done in your school to align the goals of career and technical education with those of the high-stakes testing program?

To: All local school personnel

<p>Community High School with Career Tech (Truman)</p>	<p>completer course, and about 15,000 kids on a pathway to finish, they are in completer courses, so we are talking about a lot of kids, which demonstrates to me that CTE courses meet a need, and I don't want to remove that opportunity for children... so I think the challenge for us is to be front and center in the public eye, to get in front of our administrators, show our successes because so much focus is on data, on those test results.</p> <p>I think career and tech students will fare as well as any other student on any of the assessments... I think the issue is that we have an obligation to every student that sets foot in our school system to provide them with the most challenging academic program that we can provide them, and differentiate instruction to best meet their needs... I think we need to stay current.. the world is changing and career development is an important issue with all of this and we've got to keep current with industry and its just another reminder of that.</p>
<p>Large Career Technical Center (Lincoln)</p>	<p>Well, I think one of the challenges is going to be redirection of resources, probably towards making sure young people have adequate preparation. I guess it's fair to say, redirection of resources away from our program towards getting kids ready to pass these tests. I think that's going to be state and local, actually it's also federal, too; but I think that's going to be a challenge... I think one of the challenges at some point is trying to keep some kids who are borderline from dropping out of school... So I think the drop out and the resources are two big challenges, and I think the availability of our programs for some kids is going to be a really big challenge. And I think at the state level, we run the risk of being careful that we don't lose the true mission to help prepare some young people for the labor market... We need to be careful because of schedules and because of some philosophy sometimes, that we don't lose emphasis, that we don't lose that we are preparing kids for employment as well as post-secondary, and I think that's a danger. And some of our systems have done that.</p>
<p>Small Career Technical Center (Madison)</p>	<p>At the school level, it's going to benefit us... we can change the math and English program to give kids what they need... In the district level, it's going to have a negative effect, in fact because we are now going away from teaching what we should be teaching to teaching the tests, whether they say it or</p>

	not. I think the whole thing is going to be negative in the end. At the state level, somebody's going to realize it some day and one day they will wake up and say – ah – forget it.
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Question No. 4.

What challenges do you see the high-stakes testing program posing to career and technical education, at the state, district or local school level?

To: All state and district personnel.

Appendix H

Perceptions about the Challenges that the Maryland High Stakes Testing Program will Pose to Career and Technical Education at the State, district and Local Level.

Local School Personnel

Interviewee

Responses

Interviewee	Responses
<p>Comprehensive Technical High School (Kennedy)</p> <p>Principal</p>	<p>Well the biggest challenge is going to be, and this has been a challenge for years is being able to support it financially. If monies are put in targeted areas, the question will be what can be eliminated again... in the past the first things that have gone have been some of the career and tech programs... It comes down to dollars and cents and how much of this can be supported... if it turns out you have to eliminate a program, that (CTE) would probably be the first to go... on a local level, that's already occurred here, where a number of programs have already gone by the wayside; example: masonry, carpentry, electricity...when it came to making decisions about staffing, it just wasn't in the cards, and those disappeared first.</p>
<p>Academic Department Chair (math)</p>	<p>Well, fortunately here, our culture has always been that they were important tests so, that our children are doing ok. But when it gets to the point that we have some non-diploma bound students, I think that's going to be a huge impact on instruction, and those kids would be in career and tech programs.</p>
<p>CTE Department Chair (health-sciences)</p>	<p>It's a matter of being able to connect with those (the tested subjects), because high-stakes tests are here to stay. So we have to adapt what we're doing, not changing our curriculum, but we have to look at how we access students and sometimes make some adaptations so that we are in line with those tests.</p>
<p>CTE Department Chair (automotives)</p>	<p>Oh, yeah, indeed I do, challenges with respect to the quality of work that the student puts out. Because this student realizes he is under the gun. He realizes that. Sometime ago there was real definite boundary between academic and career and technology education, a lot of parents were quite presumptuous as to the degree of difficulty of our coursework. They thought what we did was easy and dirty. But with this alignment, parents realize that what we do requires the same amount, if not more, concentration of and on academic and scientific principles.</p>

<p>CTE Department Chair (health sciences)</p> <p>CTE Department Chair (construction)</p> <p><i>Feeder School (Jefferson)</i></p> <p>Principal</p> <p>CTE Academic Department Chair (English)</p> <p>-----</p>	<p>take, it should give them enough room in their schedule to keep putting in our programs... As far as the state level, I'm not exactly 100% sure where we're headed with that. That failure rate in algebra has got me concerned. I think that's a pretty substantial failure rate – what's it about 50% failure rate?</p> <p>Well, I think the biggest challenge, like I said, going with A day/B day has helped us a lot. The other challenges; students not successful in those assessment tests will then have to either retake classes or have tutoring, or something on the side. It would cause them to go back to their home school and not finish their technical program.</p> <p>I don't see it yet, but I do see some turf battles coming, by that I mean in our county students can receive math and science credit for their vocational class. If they are not doing well in math or science tests, I'm not sure who's going to take the heat on that... which means taking the math credit away and saying you have to take three straight math credits over there (at the home school).</p> <p>So many of the skills tested in the high school assessments are elements of CTE courses that they can support. At the state level, the division of funds concerns me, there is only so much money and resources to go around and something will have to give. I don't think it will be in the tested areas. I foresee scaling back of some programs.</p> <p>Okay, scheduling definitely is going to be a factor. Finding time in their schedule to get them in. I think it is going to be difficult for career and tech schools to make it, to make the students aware of what they have to offer, because the home school is doing to be so driven by test scores and needing to increase things.</p> <p>-----</p>
<p>Small Career Tech Center (Madison)</p> <p>Assistant Principal</p>	<p>I think they are going to come at odds. I know at the state level they are trying to get certifications attached to programs and that would be in my mind a way of showing that we upped the rigor of our programs and that industry themselves are testing our students; but if high-stakes testing pulls them</p>

CTE Department Chair (health sciences)	back and doesn't allow them to be able to give the time to come here, then that could be a problem. At the district level, they are most concerned with that "No Child Left Behind," and that everyone achieve at the prescribed level.
CTE Department Chair (automotives)	I'm a little hesitant on the question of high-stakes testing because I haven't paid a whole lot of attention to it, but I don't feel like it influences the career center a great deal. I know they have to pass the basic math and sciences and English portions at the home schools, but I don't think that plays out so much here.
<i>Feeder School (Adams)</i>	Not really. I think our biggest challenge here in my program is to have some of these kids pass some sort of test in their area. For example, our area is ASE testing, which is done right here in our school twice a year for industry. My challenge is to encourage the better students, or to the students who are very much interested to get involved and take that test and do well on it. Because these are difficult tests (the automotive ASE tests).
Principal	The challenge I see is being able to ensure again that the students continue to have the opportunity to take our career/technical center pathways programs and meet their graduation requirements in the areas of fine arts, physical education, tech ed, and receive appropriate assistance... We are going to have students who are going to be restricted in course selection because of remediation...I see a challenge scheduling-wise and staff-wise. I see it becoming greater stakes for them to get out and recruit kids in their pathways... I see these groups saying, "hey, if I don't do something, then my (CTE teachers) job could be at stake."
CTE Academic Department Chair (math)	Well, the thing that's happening now is we're running, at least now in math a couple of double periods classes, and then English wants to run some double period classes, and then that's going to influence who can take double period classes at the career center.

Question No. 4.

What challenges do you see the high-stakes testing program posing to career and technical education, at the state, district or local school level?

To: All local school personnel.

Appendix I

Perceptions of How Maryland's High-Stakes Testing Program Will Influence the Operation of Career and Technical Education Programs.

State and District Personnel

Interviewee

Responses

Interviewee	Responses
<p>MSDE</p>	
<p>Assistant Superintendent of Planning, Results, and Information Management</p>	<p>If students don't have those core skills, in English, math, biology, and algebra data analysis, or government, they're going to struggle in not only your program, but also once they leave your programs... Can those programs (CTE) be customized, or not be customized, but at least support the reading target or the writing target that may be holding them back in English? I don't think anyone has ever done that kind of training or curriculum work for that person who is teaching CTE to support when they are using text and asking kids to write... They're not taking over the reading job, but they're supporting it and that's being a challenge for some folks. Most of the older folks like you and me.</p>
<p>Assistant Superintendent of Career & Technical Education</p>	<p>We (CTE) have opportunities to influence and provide examples of the application of high school assessment areas so that student learning can be supported across that student school base; so they don't think algebra is something we only do at 9:35 am, but that algebra is something that is part of the work I do in my auto mechanics, in my cosmetology class and in my engineering class – that kids see the relevance of it. We have a great opportunity to help kids see why it is important to be in school... So I think that's one thing CTE can really step up to the plate and needs to take that leadership role... We can look at where our programs might be able to buy additional time, looking at some of our six credit programs in CTE which might not need to be six credits. We might need to look at how we use our time in a better fashion, so that for students needing more intensive academic assistance, they could have that time.</p>

Local Directors

Comprehensive Technical High School
(Kennedy)

We started doing class matches, I'm going to guess 3 or 4 years ago, to align out programs to demonstrate that technical skill and academic skills needed by, let's say system networking programs, also corresponds with math and science and language arts skills the students would need entering the high-stakes testing... And the instruction has changed. We absolutely are holding workshops, staff development, on you know, how to write sample test items that look like what you'll find on an HSA, or more recently, MSA. We did that for years for end-of-course exams. So we've definitely changed the curriculum and staff development to focus on high-stakes testing including the SAT's... They (CTE teachers) often have days where they would break-up into departments and then each department would be focusing on their content and how it relates to testing.... But they (high-stakes tests) have affected curriculum and instruction, but I feel better. That's not a complaint at all, I think it's an improvement in focusing both the academics and tech. It's just more work.

Community High School with Career Tech
(Truman)

Certainly if students fail the high-stakes assessments, there are several different scenarios. If they fail an exam, but they've passed Algebra 1, then they are they going to have to retake the course, or are we just going to have to provide remediation or enrichment for them and is that going to cut into a CTE course? We don't know yet. I don't think it will, I think we are going to look probably at other options that schools are going to come up with... I just don't see it affecting our students. I don't see us pulling students out of culinary arts because they have to do 16 hours of remediation for the English 1 test... I think what we need to remember is that career and technology education is one of three mechanisms for a student to graduate. If they don't have two credits of foreign language or an advanced technology, you've got to have four credits in a state approved career and technology program. So that becomes equally important as passing or taking the assessment in English... So I think our teachers for career and technology have to be cognizant of the fact that they've got to support reading and math instruction in the classroom and we provide that kind of staff development to them.

<p>Large Career Technical Center (Lincoln)</p>	<p>I think it is clearly going to impact a kid who is questionable academically. I don't know how else to say that. I think there is definitely going to be an impact. I think it is going to impact a significant number of kids who are special-ed and I'm afraid they're not going to be able to do both. And I think that's a shame... But we may see that we play a bigger role in the future in terms of trying to help extend learning for these kids so they can be successful to pass the algebra, the geometry, and the English tests. I don't think the content of our CTE per se is going to change that much. We have for about 10 or 12 years or 15 years now – we matched up all our content areas against the old Core Learning Goals... No I don't necessarily think our content, I don't see how our content could change that much. If it does, we might just as well have it as another math class.</p>
<p>Small Career Technical Center (Madison)</p>	<p>...it will influence us as much as we want to let it influence us... because we're pretty well at times, much to the dismay of the board office, we pretty much operate on our own... CTE teachers would make a faster adjustment than regular high school teachers... If they would tell us what other skills the kids need, we can now adapt to that area, and to whatever is needed... We now give kids a pre-test, they have an assignment every day to do a basic English assignment, and then we post-test them at the end of each report period. That's just started this year, so if we knew where the weaknesses were, we could directly address it.</p>

Question No. 5:

How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, and actual CTE course content and daily activities? Also do you foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

To: All state and district personnel.

Appendix J

Perceptions of How Maryland's High-Stakes Testing Program Will Influence the Operation of Career and Technical Education Programs.

Local School Personnel

Interviewee	Responses
<p>Comprehensive Technical High School (Kennedy)</p> <p>Principal</p>	<p>...if they (CTE courses) are not enhancing and/or giving us what we need within this building to help our kids to be successful as far as these testing situations are concerned, than they will either have to adapt to what we need, or they will, just much like the dinosaur, disappear from the face of the earth... If we start with appropriate assistance as mandated, or we have to have programs in our comprehensive portion of our school, that we didn't before to meet the needs of the kids, this could impact the programs... there could just be individual issues for students that may not be able to stay in this type of program and may have to go back to a standard, comprehensive school as opposed to a career and tech school such as this one... we have had them take the subject twice a day, which is not my favorite thing to do, but we will do it.</p>
<p>Academic Department Chair (math)</p>	<p>I don't think it is going to impact the enrollment. Scheduling is going to be a concern. We currently are the only high school in the county that does not offer algebra with assistance, which is a double period of algebra for students who are not your traditional algebra 1 students... the trend in this county is for them to take double periods of algebra. And, I think the pressure will be on... Or more children are going to have to be identified as non-diploma bound... there are kids who do a marvelous job in the hands-on environment and don't do anything in an academic environment. And this program says everybody has to be academic.</p>
<p>CTE Department Chair (health-sciences)</p>	<p>Well, like with the functional tests that were previous, I mean we just kept working and working with those students, and our resource people kept working with them, providing them with extra coaching classes. It will probably be after school, because there is only so much we can lose with our curriculum. And this (HSA) is probably going to mean more coaching time after school with</p>

<p>CTE Department Chair (automotives)</p> <hr style="border-top: 1px dashed black;"/>	<p>students having trouble.</p> <p>I see more of the high-stakes assessment mechanisms in all programs or certifications. My particular program now has a governing body with respect to curriculum delivery that is NATEF. I think all of these things work on the premise of high-stakes assessments... We're trying to raise the national standard of curriculum delivery into all of our programs, and I think they are using high-stakes as a model for that.</p>
<p>Community High School with CTE (Truman)</p> <p>Principal</p>	<p>Well, it has already changed the lessons and approaches and that was a conscious decision on our part...one of the initiatives that is in our action plan is to model all short responses, reconstructed extended responses in all tasks and practice those school-wide... But the greatest impact would be taking so much resources to get ready for these tests that it would take resources from the CTE program. That is probably the darkest cloud on the horizon for CTE's. We've worked really hard in the last ten years to get into shape, to be something that is very challenging and just as challenging as someone preparing to take all AP classes.</p>
<p>Academic Department Chair (English)</p>	<p>I think it sends a subtle message to parents and to kids that it is almost an elitist system, you know what we can test by paper and pencil is most important, and so I do think there's a real subtext of messages being sent... I think career and tech teachers are going to have to do a lot more thinking about how to PR their program to allow parents and students to understand how important it is.... There is one other thing too; I think we are spending a lot of time shuffling papers. I think our guidance counselors probably see less of the students, you know, so that they are spending more time helping test coordinators during the time that we used to spend actually working with kids, guiding them into the right pathways.</p>
<p>CTE Department Chair (business-education)</p>	<p>We have changed our test questions to match the high stakes assessments, the high school assessments, so that part we addressed. Enrolling in classes? That is always a challenge for us because</p>

<p>CTE Department Chair (automotives)</p> <hr style="border-top: 1px dashed black;"/>	<p>we are an elective. I really believe the “High School That Works” program that was implemented six or seven years ago has helped us tremendously, because now, all of our students, even those that are college bound, are to be high school ompleters...It’s going to be a huge problem because we’ve lumped every level of child into college-prep and advanced placement. We have no other levels of courses here.</p> <p>I’m not sure; I can’t speak for the other programs. I know that we do in-services and stuff within; you know when the teachers teach the teachers. The only thing I can think of is their writing skills and their reading skills. Reading is big and writing... It’s hard to tell what’s going to happen. But, I think, if they’re, if they have to pass those tests before they receive a Maryland diploma, it’s going to be difficult – it’s going to be difficult.</p>
<p>Large Career Tech Center (Lincoln)</p> <p>Principal</p>	<p>Whether it’s math, science, or English, we’ve got to do something to supplement the instruction that the home school is giving and help these kids through those tests. Because if they fail the tests and they have to remediate, it could be at our expense... I’m concerned about losing the math and science applied credit though. That’s going to be a hit for some of our special needs kids... The kids who are going to suffer are going to be the less able kids... which our population is about 26% special needs, those kids once they come here and get involved here and with the support of our support team, they usually make it... What’s going to happen to those kids? I mean those kids have to go somewhere, they need a livelihood. We’ve been good for those kids. That’s my worry.</p>
<p>CTE Department Chair (health sciences)</p>	<p>It has affected us because our principal is very proactive.... So you know in our lesson plans, we are mandated basically to have math and science and English kind of spelled out in those lesson plans.... We’ve had a lot of in-services on how to incorporate a lot of this information into our lesson plans and into our classes.</p>
<p>CTE Department Chair (construction)</p>	<p>They’re not the gifted and talented and AP type students, so they are probably going to have a more difficult time on the tests to begin with. And, so if they do have to get put in remedial classes, they’re taken out of the center. I mean they won’t have the</p>

	<p>way to the top as far as a management position (without a high school diploma), but they're perfectly content with turning wrenches their whole lives. And, I hate to tell you there are some of them out there turning wrenches that are making more money than both of us. (If the students were good mechanics, do you think automotive dealers would care if they did not have a high school diploma?) Probably not, probably not. It's the bottom line, if he understands how the automobile works, understands the electronics, it's getting more difficult, computer skills are becoming a real issue and also electronics. They've become real issues. If you're good in those areas, then they're going to pick you up, and they are going to pay you the bucks, big bucks.</p>
<p><i>Feeder School (Adams)</i></p> <p>Principal</p>	<p>I think that as a system, we are going to have to take a closer look at changing our current approach to how we service our students at the career center that may help in this situation... like trying to divide our career center into half-days. As part of that half-day, they would receive instruction outside of the career pathway and helping the students in those remedial programs or maybe even picking up an English or a science or a math or something else at the career/technical center before they come back to their home school... I believe that is the big thing I see – they are going to have to get more than just masonry, cosmetology, or nursing. They are going to have to pick up some core subject areas or some remedial work in those spots... I understand the high-stakes exams, I understand the reasoning for it, I understand trying to keep the curriculums aligned so that students throughout the state are getting the same information. I just have a problem when they're all being asked to do the same thing, when they are all not the same.</p>
<p>CTE Academic Department Chair (math)</p>	<p>I know that they (CTE teachers) do cover at least for math; they do try to cover some math skills that the students need in the career center. But anymore than that, I don't know that they can take the time away from what they are doing. I don't know if student enrollment is going to drop because of these problems of having to repeat classes or take double period classes... But the ones who would benefit the most are the ones who are also going to struggle with these tests and they need to be in the career center and getting the skills to go out in the workplace; and they're stuck and could be stuck in remedial classes for these tests, unfortunately.</p>

Question No. 5:

How do you foresee the implementation of high-stakes testing influencing the operation of career and technical education in specific areas such as student enrollment in CTE classes, scheduling concerns, actual CTE course content, and daily activities? Also, do you foresee CTE teachers changing their courses or instructional approaches to address the high-stakes assessments?

To: All local school personnel

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