



VIRGINIA DEPARTMENT OF EDUCATION

BRIEFING

**VIRGINIA'S INTEGRATION OF
STANDARDS OF LEARNING AND CAREER
AND TECHNICAL EDUCATION
PROGRAMS**

**A REVIEW IN RESPONSE TO
ITEM 138, PARAGRAPH F, CHAPTER 89,
2008 ACTS OF ASSEMBLY**

September 4, 2008



COMMONWEALTH of VIRGINIA

DEPARTMENT OF EDUCATION

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September 9, 2008

The Honorable Charles Colgan, Chairman
Senate Finance Committee
Patrick Henry Building
1111 E. Broad Street
Richmond, Virginia 23219

The Honorable Lacey Putney, Chairman
House Appropriations Committee
Patrick Henry Building
1111 E. Broad Street
Richmond, Virginia 23219

Dear Senator Colgan and Delegate Putney:

I am pleased to submit the Department of Education's review of whether or not the Standards of Learning inhibit students from pursuing career and technical education programs and/or seeking industry certifications, in response to Item 138, Paragraph F, Chapter 89 of the 2008 Acts of Assembly.

If you have questions or require additional information related to this report, please contact Dr. Linda Wallinger, assistant superintendent for instruction, at linda.wallinger@doe.virginia.gov or (804) 225-2034.

Sincerely,

A handwritten signature in cursive script, appearing to read "Billy K. Cannaday, Jr.", written in black ink.

Billy K. Cannaday, Jr.

BKCJr/LMW
Enclosure

C: Laura Wilborne, Division of Legislative Automated Systems
Robert Vaughan, Staff Director, House Appropriations Committee
Betsey Daley, Staff Director, Senate Finance Committee

VIRGINIA'S INTEGRATION OF STANDARDS OF LEARNING AND CAREER AND TECHNICAL EDUCATION PROGRAMS

❑ LEGISLATION

Item 138, 2008 Appropriation Act

F. The Superintendent of Instruction shall review the current Standards of Learning to determine whether these standards inhibit students from pursuing career and technical education programs and/or seeking industry certifications.

❑ BACKGROUND

Virginia's K-12 educational system is built on rigorous standards in academic courses and performance-based competencies in career and technical education. Standards of Learning, which outline what students should know and be able to do upon successfully completing the grade or course, exist for every grade and content area, whether or not there are associated Standards of Learning tests. Additionally, all career and technical education courses in the Commonwealth are designed to reflect challenging competencies that outline expected outcomes for students who successfully complete the courses. These courses, standards, competencies, and assessments complement each other to provide a wide range of rigorous options to meet the needs of a variety of students as we strive to prepare them for a future that has yet to be defined. Rather than inhibiting students from pursuing career and technical education programs and seeking industry certifications, there is an intensive effort to integrate academic and career and technical education in learning and applying knowledge and skills.

Since the implementation of the Standards of Learning in 1995, the Office of Career and Technical Education, with the assistance of the Office of Middle and High School Instruction, correlates all career and technical education (CTE) courses and competencies with Standards of Learning in English, mathematics, science, and social sciences to help teachers in both programs understand how their curricula support each other in theory and in practical applications. The Standards of Learning and the CTE competencies complement each other rather than compete with each other.

Additionally, the reauthorization of the federal Carl D. Perkins Vocational and Technical Education Act of 2006 (Perkins IV) contains new language that aligns CTE programs more closely with academic programs. The new Act also strengthens the connections between secondary and postsecondary education and increases state and local accountability. For example, rather than reporting academic achievement of CTE students, recipients of funds report on the graduation rate of CTE students using the same graduation rate that is required for No Child Left Behind. Another important change is that funding from Perkins IV may be used to help states and localities develop further alignment between academic and career and technical curricula.

This increased emphasis on collaboration between career and technical education programs and academic programs has supported a growth in career and technical education enrollments. The following table shows the enrollments in career and technical education programs for the last ten years. The enrollments began to increase significantly when state funding began to be provided in 2004-2005 to support the cost of industry credentialing for high school students. The number of career and technical education completers has also increased in recent years.

Year	Students Enrolled in Career and Technical Education (Duplicated count - number of students enrolled in one or more CTE courses.)	Career and Technical Education Completers (Unduplicated count - students who have completed a CTE concentration.)
2007-2008	593,429	34,425
2006-2007	590,921	32,045
2005-2006	582,314	31,275
2004-2005	597,254	29,186
2003-2004	585,115	26,828
2002-2003	574,686	25,112
2001-2002	557,940	24,885
2000-2001	559,172	27,868
1999-2000	569,941	31,369
1998-1999	564,733	35,108

□ **PERFORMANCE OF VIRGINIA STUDENTS COMPARED TO THE NATION**

Numerous sources have noted that today's students must be prepared to compete not only with the student next door or in a neighboring state, but also with students around the world. This global competitiveness reinforces the point that Virginia's educational programs must focus on defining content and skills that can be used in a variety of settings. With that in mind Virginia students have made steady progress since the implementation of the Standards of Learning in 1995 and consistently perform well in both academic and career and technical education comparisons across the nation.

- ◆ **The National Assessment of Educational Progress (NAEP)** is a nationally representative and continuing assessment of what America's students know and can do in various subject areas. Assessments are conducted periodically in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history. Since NAEP assessments are administered uniformly using the same sets of test booklets across the nation, NAEP results serve as a common metric for all states. The assessment stays essentially the same from year to year, with only carefully documented changes. This permits NAEP to provide a clear picture of student academic progress over time.

A sample of schools and students is selected to represent a participating state for the year in which each content assessment is administered. In an average state, 2,500 students in approximately 100 public schools are assessed per grade, per subject assessed. In general, the selection of schools uses stratified random sampling within classes of schools with similar characteristics.

During the last administration of the NAEP science assessment in 2005, Virginia students led the nation in science achievement, exceeding the national average by 12 points in fourth-grade science and 8 points in eighth-grade science. In 2007, Virginia's students scored higher than students nationwide in reading and mathematics: 7 points higher in fourth-grade reading and 6 points higher in eighth-grade reading; 5 point higher in fourth-grade mathematics and 8 points higher in eighth-grade mathematics.

- ◆ Virginia was one of only three states in the **Southern Regional Education Board (SREB)** that **narrowed the achievement gaps for both African-American and Hispanic students on statewide high school exams in both English and mathematics or Algebra I between 2002 and 2006.**
- ◆ Virginia is one of only a few states in which 20 percent or more of high school seniors earned a **grade of 3 or more on an Advanced Placement (AP) examination.** A grade of 3 is the score at which many colleges and universities begin to consider offering college credits to students who have taken an AP examination.

Virginia Public School Students Participating in AP Testing, Grades 9-12

	1997			2008		
	All students	Black students	Hispanic students	All students	Black students	Hispanic students
# AP Exams Taken	33,812	2,081	998	97,480	7,988	5,099
# Students Participating	20,145	1,387	644	54,219	5,319	3,096
# Scores 3 or Above	22,029	826	689	56,714	2,545	2,658

- ◆ Further data analysis of the intersection between students in Advanced Placement courses and those in career and technical education courses indicates that 17.6 percent of CTE completers took at least one Advanced Placement examination. Also, 45.1 percent of CTE completers earned an Advanced Studies Diploma, further indication that students are able to complete both rigorous diploma requirements and continue their career and technical education studies.
- ◆ The 2005 General Assembly first provided funding to support fees for students to take assessments associated with industry credentials. The amount of funding and the number of credentials earned by high school students are shown in the following table:

Fiscal Year	Funding to Support Industry Credentialing for High School Students	Number of Credentials Earned by High School Students the Previous School Year
2005-2006	\$682,082	6,347
2006-2007	\$848,123	10,115
2007-2008	\$1,065,133	13,325
2008-2009	\$1,065,133	TBD

□ ALIGNMENT OF HIGH SCHOOL AND POSTSECONDARY EXPECTATIONS

Much of the discussion within Virginia's P-16 Education Council has been devoted to the level of rigor found in Virginia's high school programs as compared to that required for success in a postsecondary setting, whether it be higher education or the work force. Content rigor is addressed in academic and CTE courses in different ways.

CTE courses in Virginia are based on competencies that outline the tasks and skills that students must successfully complete in order to pass the course. The competencies for each program area are reviewed on a three-year cycle to ensure that the courses remain current with work force demands. Representatives from business and industry meet with staff from the Department of Education for several days to review the competencies and make suggestions for updating them.

Similarly, all Standards of Learning are reviewed on a seven-year cycle, with the Board of Education most recently approving revised History and Social Science Standards of Learning in January 2008. The Mathematics Standards of Learning are in the review process now, with approved revised standards anticipated by June 2009. A review of Science Standards of Learning and English Standards of Learning will follow with anticipated approval of revised standards in those areas by June 2010.

Department of Education staff regularly conduct a comprehensive correlation of CTE course competencies to the Standards of Learning. This correlation is available on the Internet at <http://www.cteresource.org/tasklists/index.html>.

Virginia has been working with a number of third-party validators to review the rigor of the Standards of Learning, particularly in the areas of English, mathematics, and science. A summary of their findings follows.

- ◆ In January 2007, the Board of Education authorized the Department of Education to conduct studies to determine factors contributing to success in postsecondary education. As part of that effort, the Department of Education requested **ACT** and **The College Board** to conduct studies comparing their respective standards for postsecondary readiness to the Virginia Standards of Learning in English/Reading and Mathematics. These studies were conducted at no cost and in collaboration with Department of Education content specialists and the executive director for research and strategic planning. Both

the College Board and ACT found that Virginia's mathematics and English standards showed strong alignment with their respective postsecondary readiness standards. In both studies, there was stronger alignment with Virginia's mathematics standards than there was in English.

[http://www.doe.virginia.gov/VDOE/VA_Board/Meetings/2007/sep-itemN.pdf]

- ◆ **Achieve, Inc.**, an organization created by the nation's governors and business leaders, helps states raise academic standards and achievement so that all students graduate ready for college, careers, and citizenship. Under Achieve's auspices, a quality review has been conducted of Virginia's Mathematics Standards of Learning as compared to the American Diploma Project benchmarks [<http://www.achieve.org/>]. The review found that Virginia's courses in Algebra II and Algebra, Functions, and Data Analysis are strong courses, though they prepare students for different options. Students who successfully complete a course sequence of Algebra I, Geometry and Algebra II should be very well prepared for college level mathematics, including mathematics required for students planning to major in mathematics or pursue careers in science, technology, engineering, and mathematics (STEM) fields. Students who successfully complete the course sequence of Algebra I, Geometry, and Algebra, Functions, and Data Analysis will be prepared to take non-remedial credit bearing courses such as College Algebra, but will not be as well prepared for more advanced mathematics courses. This feedback, coupled with feedback offered during a public comment period, will be considered in conducting the review of the Mathematics Standards of Learning this year. Additionally, representatives from business and industry as well as from higher education will be included in the review process as efforts are made to tighten the alignment between high school and postsecondary programs. The quality review for English is still in progress.

- ◆ **NASA** provided a staff member on loan for approximately a year to work in the Secretary of Education's office, with the express purpose of reviewing Virginia's K-12 Science Standards of Learning and engineering programs as they relate to 21st century needs. Findings included a concern that while competencies have been developed for CTE courses in engineering, Virginia does not have Standards of Learning for engineering. An additional finding was related to the need to include current information in physics and chemistry, especially as it relates to business and industry applications.

❑ POLICY ACTIONS THAT PROMOTE CAREER AND TECHNICAL EDUCATION

The General Assembly and the Virginia Board of Education have adopted numerous policies to acknowledge the value of career and technical education and to offer opportunities for all students to avail themselves of career and technical education courses in a manner that complements their academic studies rather than competing with them. A summary of some of these policy actions follows.

Credit and Diploma Options for CTE Students – The Board of Education has provided opportunities for CTE courses to meet graduation requirements in a number of ways. The Regulations Establishing Standards for Accrediting Public Schools in Virginia (SOA) (8 VAC 20-131 et seq) contain the following relevant provisions.

- ◆ **Student-selected verified credits.** To satisfy the requirement for a student-selected verified credit for both the Standard and Advanced Studies Diplomas, a student may utilize additional tests in computer science, technology, career and technical education or other areas as prescribed by the Board in 8 VAC 20-131-110.

In this provision, the Board may approve additional tests for the purpose of awarding verified credit. These additional tests must, at a minimum, meet the following criteria:

1. The test must be standardized and graded independently of the school or school division in which the test is given;
2. The test must be knowledge based;
3. The test must be administered on a multistate or international basis, or administered as part of another state's accountability assessment program; and
4. To be counted in a specific academic area, the test must measure content that incorporates or exceeds the SOL content in the course for which verified credit is given.

The Board of Education has acknowledged the rigor of recognized industry credentials by approving 151 industry credentials that may satisfy the requirement for a student-selected verified credit. The complete list is available at

http://www.doe.virginia.gov/VDOE/Instruction/CTE/certification/Board_Approved_Credentials.pdf.

- ◆ **Substitution for a student-selected verified credit and a science or history or social science credit.** For a Standard Diploma, students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry, or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The Board of Education has approved 151 industry credentials that may be used to satisfy this requirement.
[\[http://www.doe.virginia.gov/VDOE/Instruction/CTE/certification/Board_Aproved_Credentials.pdf\]](http://www.doe.virginia.gov/VDOE/Instruction/CTE/certification/Board_Aproved_Credentials.pdf)
- ◆ **CTE course sequence as a substitution for physics and one elective.** The sequence of Principles of Technology I (9811) and Principles of Technology II (9812) satisfy one standard unit of credit in laboratory science for physics and one elective credit. Students who enroll in Principles of Technology courses for a physics credit must have completed Algebra I and two other laboratory science courses as specified by the Standards of Accreditation prior to enrolling in Principles of Technology.
[\[http://www.doe.virginia.gov/VDOE/Instruction/webcrses.html\]](http://www.doe.virginia.gov/VDOE/Instruction/webcrses.html) The Principles of Technology courses are laboratory courses where students learn to apply physics and mathematics concepts through a systems approach to develop a broad knowledge base of the principles underlying modern technical systems. In level I, students study seven technical principles: force, work, rate, resistance, energy, power, and force transformers. In level II, students focus on an additional seven technical principles: momentum, waves, energy converters, transducers, radiation, optical systems, and time constants. In each level, there is an emphasis on how each principle plays a role in the operation of mechanical, fluid, electrical, and thermal systems in high-technology equipment.
- ◆ **Sequential electives.** The Standard Diploma requires students to earn at least two sequential electives as required by the Standards of Quality. Many CTE courses meet this requirement.

Awards for Student Performance – The SOA provide the opportunity for students to earn Board-approved diploma seals when they demonstrate academic excellence and/or outstanding achievement. Among the relevant awards are:

- ◆ **Governor's Seal** - for students who complete the requirements for an Advanced Studies Diploma with an average grade of "B" or better, and successfully complete college-level coursework that will earn the student at least nine transferable college credits in Advanced Placement (AP), International Baccalaureate (IB), Cambridge, or dual enrollment courses. [This includes dual enrolment courses in career and technical education.]
- ◆ **Board of Education's Career and Technical Education Seal** - awarded to students who earn a Standard or Advanced Studies Diploma and complete a prescribed sequence of courses in a career and technical education concentration or specialization that they choose and maintain a "B" or better average in those courses; or (i) pass an examination or an occupational competency assessment in a career and technical education concentration or specialization that confers certification or occupational competency credential from a recognized industry, trade or professional association or (ii) acquire a professional license in that career and technical education field from the Commonwealth of Virginia.
- ◆ **Board of Education's Seal of Advanced Mathematics and Technology** - awarded to students who earn either a Standard or Advanced Studies Diploma and (i) satisfy all of the mathematics requirements for the Advanced Studies Diploma (four units of credit including Algebra II; two verified units of credit) with a "B" average or better; and (ii) either (a) pass an examination in a career and technical education field that confers certification from a recognized industry, or trade or professional association; (b) acquire a professional license in a career and technical education field from the Commonwealth of Virginia; or (c) pass an examination approved by the board that confers college-level credit in a technology or computer science area. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements.

Instructional Program Requirements – The SOA contain the following provisions regarding requirements for career and technical education:

- ◆ The middle school shall provide each student a program of instruction which corresponds to the Standards of Learning for English, mathematics, science, and history/social science. In addition, each school shall provide instruction in art, music, foreign language, physical education and health, and career and technical exploration and shall require students to participate in a program of physical fitness during the regular school year in accordance with guidelines established by the Board of Education.
- ◆ The middle school shall provide a minimum of eight courses to students in the eighth grade. English, mathematics, science, and history/social science shall be required. Four elective courses shall be available: level one of a foreign

- language, one in health and physical education, one in fine arts, and one in career and technical exploration.
- ◆ The secondary school shall provide each student a program of instruction in the academic areas of English, mathematics, science, and history/social science that enables each student to meet the graduation requirements described in 8 VAC 20-131-50 and shall offer opportunities for students to pursue a program of studies in foreign languages, fine arts, and career and technical areas including:
 - Career and technical education choices that prepare the student as a career and technical education program completer in one of three or more occupational areas and that prepare the student for technical or preprofessional postsecondary programs;
 - Coursework and experiences that prepare the student for college-level studies including access to at least three Advanced Placement (AP) courses, college-level courses for degree credit, International Baccalaureate (IB) courses, Cambridge courses, or any combination thereof. [CTE dual enrollment courses may satisfy this requirement.]
 - ◆ Secondary schools must provide a minimum of 11 course offerings in career and technical education.

College Preparation Programs and Opportunities for Postsecondary Credit - Beginning in the middle school years, students shall be counseled on opportunities for beginning postsecondary education and opportunities for obtaining industry certifications, occupational competency credentials, or professional licenses in a career and technical education field prior to high school graduation. Such opportunities shall include access to at least three Advanced Placement courses or three college-level courses for degree credit pursuant to 8 VAC 20-131-100. [These may be CTE dual enrollment courses.] Students taking advantage of such opportunities shall not be denied participation in school activities for which they are otherwise eligible. Wherever possible, students shall be encouraged and afforded opportunities to take college courses simultaneously for high school graduation and college degree credit (dual enrollment)

□ **MORE OPTIONS FOR STUDENTS: FURTHER INTEGRATION OF ACADEMIC PROGRAMS AND CAREER AND TECHNICAL EDUCATION**

The 1997 Standards of Accreditation were the first to outline more rigorous graduation requirements that became effective with the ninth-grade class of 1998-1999. A transition period occurred during the late 1990s and early 2000s to allow the graduation requirements to become effective for all students. The following

table outlines the transitional nature of the increased requirements:

Ninth Graders in:	If Student Graduated in Four Years:	Must earn # Standard Credits	Must earn # Verified Credits
1997-1998	2001	21	Must pass the Literacy Passport Test (LPT); 0 verified credits
1998-1999	2002	22	Must pass LPT; 0 verified credits
1999-2000	2003	22 Must include 2 sequential electives ¹	Must pass LPT; 0 verified credits
2000-2001 2001-2002 2002-2003	2004 2005 2006	22 Must include 2 sequential electives ¹	6 verified credits: 2 English; 4 student-selected
2003-2004 and beyond	2007 and beyond	22 Must include 2 sequential electives ¹	6 verified credits: 2 English; 1 mathematics; 1 science ^{2,3} ; 1 history/social science ^{2,3} ; 1 student-selected ⁴

¹ Required for graduates in 2003 and beyond. Students often use CTE courses to satisfy the sequential electives requirement.

² Students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry, or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an additional test to verify student achievement.

³ Students who do not pass Standards of Learning tests in science or history and social science may receive locally awarded verified credits from the local school board in accordance with criteria established in guidelines adopted by the Board of Education.

⁴ A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education or other areas as prescribed by the board in 8 VAC 20-131-110.

With the implementation of the new Standards of Accreditation, the Department of Education began immediately to provide technical assistance to school divisions by detailing the many options available to students to meet the new requirements. The Office of Career and Technical Education, with the assistance of the Office of Secondary Instruction, began the complex process of correlating all CTE courses with courses in English, mathematics, science, and social studies to help teachers in both programs understand how their curricula support each other in theory and in practical applications. In compliance with the Code of Virginia, the Standards of Learning are reviewed every seven years. The CTE competencies are reviewed every three years, with a special effort to update the correlations to any new revisions to the Standards of Learning. These correlations are available online at

<http://www.cteresource.org/tasklists/index.html>.

□ **THE FUTURE OF INSTRUCTIONAL OFFERINGS THAT INTEGRATE ACADEMIC AND CAREER AND TECHNICAL EDUCATION PROGRAMS**

The increased focus on the need for students to have stronger skills in communication and in science, mathematics, engineering, technology (STEM) has provided significant opportunities to begin “blending” academic and CTE programs into a more seamless continuum rather than working in isolation. Current examples of this collaborative work include:

- ◆ **Proposed Revisions to the Standards of Accreditation** – In January 2008, the Board of Education approved for first review proposed revisions to the Standards of Accreditation that include the creation of a Technical Diploma and an Advanced Technical Diploma. Both diplomas propose a requirement for four standard credits in career and technical education, creating a career concentration as approved by the Board. For concentrations that require less than four courses students must complete additional courses that are related to the student’s career concentration.

An additional proposed requirement in the SOA is that all middle schools must develop and maintain a personal Academic and Career Plan for each seventh- and eighth-grade student that includes specific components established by the Board. The components of the plan shall include, but not be limited to, the student's educational goals and program of study for high school graduation and a postsecondary career pathway based on the student's academic and career interests. The plan will be included in the student's record and must be reviewed and updated, if necessary, before the student enters the ninth and eleventh grades.

- ◆ **Development of Virginia’s State Plan for the Carl D. Perkins Career and Technical Education Act of 2006** – The reauthorization of Perkins IV contains language that aligns CTE programs more closely with academic programs, particularly in the areas of mathematics, science, and English (communication). Frequent references are made to “providing career and technical education students with the academic and career and technical skills (including the mathematics and science knowledge that provides a strong basis for such skills) that lead to entry into technology fields,

including non-traditional fields.” Virginia sought extensive involvement from CTE stakeholders as well as from academic stakeholders, business and industry, and higher education in developing a plan for the implementation of Perkins IV in Virginia during the next five years that makes a concerted effort to incorporate elements of both theory and practice in both areas.

- ◆ **The Governor’s Career and Technical Academies** – The Virginia Board of Education has approved to date seven Governors Career and Technical Academies that are designed to expand student options in science, technology, engineering and mathematics (STEM) literacy and the related skills and credentials that will prepare students for high-demand, high-wage and high-skill careers. Virginia used funds from the National Governor’s Association, coupled with matching funds from the Workforce Investment Act, to provide planning and implementation funds to six new Academies that will open their doors in fall 2008. Academies consist of partnerships among public school divisions, business and industry, and higher education. Completion requirements include course selections from high level academic and CTE programs, including college-credit options. In order to be approved by the Board of Education, proposed career and technical academies must undergo a rigorous curriculum review by mathematics, science, and CTE specialists at the Department of Education, in the context of the Standards of Learning and the CTE competencies. A higher education review by the State Council for Higher Education in Virginia (SCHEV) is also required.
[\[http://www.doe.virginia.gov/VDOE/Instruction/ct_academies/index.html\]](http://www.doe.virginia.gov/VDOE/Instruction/ct_academies/index.html)
- ◆ **The Governor’s Career and Technical Exemplary Standards Award Program** - The purpose of the Governor's Exemplary Standards Award program is to raise the rigor and quality of CTE programs across the state. It consists of a two-step process: programs work with business advisory groups and postsecondary faculty to validate their attainment of rigorous standards, and then apply for the Governor's designation. Over time there will be a growing network of Governor's Exemplary Programs that share best practices with each other and with other programs striving for this designation. Virginia used some of the funds from the NGA grant to

provide startup money to the Virginia Career Education Foundation, which administers the program. The standards were developed during the fall of 2007, and the Board of Education approved them in March 2008. [<http://vcef.net/page.php?id=18>]

- ◆ **Career Clusters and the Development of Career Pathways** – Career Clusters help students investigate careers and design their courses of study to advance their career goals. For this reason, the Office of Career and Technical Education in Virginia has adopted the nationally accepted structure of career clusters, career pathways, and sample career specialties or occupations. Career Pathways and the resulting “plans of study” are an integral part of the Career Clusters. Collaborative work among the Department of Education, the Virginia Community College System, and the State Council of Higher Education continues to promote career and technical programs as an integral part of successful transitions from high school to a postsecondary work, education, or training. Sample plans are provided for school divisions in each of the sixteen career clusters along with an information sheet concerning career and technical education programs and a blank template the schools may utilize to develop their own career pathway “plan of study.” To view these samples, go to <http://www.doe.virginia.gov/VDOE/Instruction/CTE/careerclusters/>. Additional sample “plans of study” will be developed for the remaining sixty-three career pathways over the next three years. The “plans of study” are part of the Local Plan Application for federal Perkins funds and the local school divisions must continue to submit “plans of study” until all career and technical education programs that are offered at the local level have a “plan of study.” These “plans of study” must be developed in conjunction with a community college or four-year college/university and documented by signature from the postsecondary designee and the school superintendent. The “plans of study” include the basic required components of the Governor’s requested Academic and Career Plan plus additional information. These are currently available in an electronic format.

- ◆ **The Board of Education’s Virginia Index of Performance (VIP)** – The VIP recognizes and rewards fully accredited schools and school divisions that make significant progress toward achieving

specific measurable goals and objectives established by the Board of Education and supported by the Governor. It is intended to measure the extent to which students are progressing towards advanced proficiency levels in reading, mathematics, science, and history and social science and on other indicators of school and student performance. Included among the performance objectives used to identify a school and school division for a VIP award are an increase in the percentage of high school students taking Advanced Placement, International Baccalaureate, and dual enrollment courses [including CTE dual enrollment courses] and an increase in the number of career and technical industry certifications, state licenses, or successful national occupational assessment. A complete description of the Virginia Index of Performance is available online at http://www.doe.virginia.gov/VDOE/VA_Board/Meetings/2007/jul-itemI.pdf.

❑ CONCLUSION

There is a clear message in Virginia that career and technical education programs enhance the educational experience for all students. Rather than inhibiting students from pursuing CTE programs and seeking industry certifications, an increased effort is underway to promote the interdependence of academic and CTE programs in learning and applying knowledge and skills. There is ongoing collaboration between the Office of Middle and High School Instruction and the Office of Career and Technical Education in terms of course development, knowledge and skill integration, and professional development for teachers. This partnership will only grow with the implementation of the Governor's Career and Technical Academies and the awarding of the new Technical and Advanced Technical Diplomas.