

Credentialing in Career and Technical Education

The Virginia State Board of Education has approved for the student-selected verified credit option 175 credentials for 72 different career and technical education (CTE) courses and/or course sequences.

Approved credentials are being used for awarding student-selected verified credit—required for graduation (standard or advanced studies diploma) for the first time in 2004. Students in Virginia earn two types of credit during high school. Standard credit is based on hours of instruction and successful completion of the course. Verified credit is based on standard credit plus a passing score on an end-of-course Standards of Learning (SOL) test, or other Board of Education approved substitute test.

Credentials in Career and Technical Education have been defined as:

1. a complete industry certification program (e.g., Certified Nursing Assistant, CNA),
2. a “pathway” examination that leads to a completed industry certification (e.g., automotive technician examinations from ASE),
3. a state-issued professional license (e.g., Cosmetology), and
4. an occupational competency assessment (e.g., “Job Ready” assessments from the National Occupational Competency Institute, NOCTI).

1. Industry Certification

Certified Nursing Assistant, Drafter Certification (ADDA), and Microsoft Office Word, are all examples of “completed” industry certifications that can be earned before high school graduation. It should be noted that completed industry certifications can lead to entry-level jobs immediately after high school only when that certification validates most of the essential skills of a particular job (e.g., Certified Nursing Assistant—Nurse Aide). Most industry certifications represent the validation of one or more “skill sets” which represent only a *portion* of a job (i.e., job role). Many certification entities offer entry-level certifications that are “stepping stones” in a certification program leading to advanced credentialing/training that will be needed for employment in the related area. It is important that students understand that obtaining an entry-level certification (e.g., A+ CompTIA, Microsoft Certified Professional) is an important “first step” in exploring job related skill sets while working toward achieving more advanced certification levels and/or other credentials. Achieving certification also assists with a student’s understanding of career pathways, and may result in opportunities to gain on-the-job experience—considered by employers to be a critical resume component. Students, in exploring certifications related to their career interests, discover how validating skill sets with

credentials can become an important part of a developing resume as other components are added to include job experience, post-secondary training, degrees, and other credentials.

- **Other Examples of Industry Certifications:**

- Greenhouse Operators Certification
- Commercial Pesticide Applicator Certification
- Brainbench Dreamweaver Certification
- Certified Internet Webmaster Associate
- Emergency Medical Technician
- Virginia Pharmacy Technician
- Fundamental Concepts of Business and Marketing Certification
- National Professional Certification in Customer Service
- Brainbench AutoCAD Certifications
- Residential Air-Conditioning and Heating Certification
- Telecommunications Electronics Technician Certification
- Firefighter I Certification
- Data Cabling Certifications

2. Industry Certification “Pathway” Examination

Many certification programs offer “pathway” examinations (e.g., Automotive Service Excellence--ASE), A+/CompTIA, CCNA/CISCO) that lead to completed industry certification in a particular area and/or skill level. Other certification entities refer to their examinations as “complete” certifications (e.g., Microsoft Certified Professional, Microsoft Office Specialist Suite), but acknowledge that these are “pathway” examinations that are part of a formal certification “track” (program) which requires *multiple* examinations for full program certification (e.g., Microsoft Certified Systems Engineer (MCSE). Often, a certification examination is one component of a *suite of credentials* that will be required by employers for entry-level jobs in a particular area (i.e., Microsoft Office Specialist Suite, NIMS Machining Skills Examinations).

- **Examples of Industry Certification “Pathway” Examinations:**

- Outdoor Power Equipment Certification Examinations (EETC)
- Brainbench Technical Support Certifications
- Certified Internet Webmaster Associate: Site Development Foundations Examination
- ProStart Program Certifications
- Certified Dental Assistant: Infection Control Examination (DANB)
- Automotive Technician Examinations (ASE)
- Automotive Youth Educational Systems (AYES) Exit Examinations
- Collision Repair and Refinishing Technician Examinations (ASE)
- A+/CompTIA Certification Examination (Operating Systems Technologies)
- A+/CompTIA Certification Examination (Core Hardware Examination)
- Carpentry, National Construction Career Test (NCCER)
- Core Introductory Craft Skills, National Construction Career Test (NCCER)
- CCNA Certification (CISCO): Introduction to CISCO Networking Technologies Examination
- CCNA Certification (CISCO): Interconnecting CISCO Networking Devices Examination

Electrical Certification (HVAC Excellence)
SENSE (AWS) Training Program (Level I Examination, Entry-level Welder)

3. State-Issued Licensure

Licensures used for credentialing in secondary Career and Technical Education normally represent validation of the essential skills needed for a specific job as determined by a state licensing agency. Cosmetology and Barbers licensures are examples, and are required for most jobs in their respective areas. Real Estate Salesperson licensure is an example of an “entry point” in a profession that usually requires additional training and credentialing. Many other state issued licensures are beyond the scope of secondary-level coursework.

- **Other Examples of State Licensure:**

Nail Technician Licensure
Licensed Practical Nurse

4. Occupational Competency Assessment

The Virginia Department of Education uses “Job Ready” occupational competency assessments from the National Occupational Competency Testing Institute (NOCTI) to provide credentialing options in the Career and Technical Education (CTE) area. NOCTI is an assessment organization that has been working with the CTE community for over forty years. The Board of Education has approved 53 NOCTI “Job Ready” assessments for the student-selected verified credit option. Many of these assessments include both knowledge and performance-based components. The verified credit option requires *only* the knowledge-based component of a NOCTI assessment. Because of NOCTI security requirements, CTE instructors cannot take a NOCTI assessment and must arrange for a school proctor to administer the knowledge-based component to their students. The national norm for a specific test is used for the “cut score” as related to the verified credit option. NOCTI assessments are not considered industry certifications, but are valuable tools in providing external credentialing for a CTE program as well as being used for program improvement purposes.

- **Examples of NOCTI “Job Ready” Occupational Competency Assessments:**

Horticulture-Floriculture Assessment
Production Agriculture Assessment
Accounting—Basic
Administrative Assisting Assessment
Early Childhood Care and Education Assessment
Food Production Management and Services Assessment
Health Assisting Assessment
Dental Assisting Assessment
Retail Trades Assessment

Pre-Engineering Assessment
Manufacturing Technology Assessment
Advertising and Design Assessment
Collision Repair Assessment
Construction Masonry-Bricklaying Assessment
Plumbing Assessment
Cosmetology Assessment
Criminal Justice Assessment
Welding Assessment

Why Credentialing in Career and Technical Education?

While the option of earning verified credit through credentialing in Career and Technical Education courses is an important recognition of the quality instruction and learning that occurs in CTE programs, equally important related issues and perceived benefits regarding the use of standardized credentialing in secondary Career and Technical Education are summarized below.

1. Verified Credit Option for CTE Courses

The use of CTE related credentials for student-selected verified credit (graduation credit) is proving to have less of an impact in Virginia than was thought several years ago. However, the success stories of students earning a needed verified credit through a Career and Technical Education program should not be overlooked as an ongoing incentive for external credentialing. Career and Technical Education becomes another “standard of learning” area in this context.

2. Exploring Critical Job Roles and Skill Sets

A major value for students and teachers related to industry skill standards and related credentialing is the opportunity to explore standardized and industry accepted skill sets related to job roles in specific career pathways. Most credentials (certified nursing assistant and cosmetology licensure being notable exceptions) do not verify entire jobs, but only parts of jobs (job roles, etc.). Most industry credentialing is really a verification of one or more critical job related skill sets. Students can gain a better understanding of specific industry credentialing as the component “parts” of jobs as they gain a better understanding of related career pathways, and the credentialing programs that may make a difference in achieving major career objectives. A good example of this issue can be found in several certification areas related to Agricultural Education. Students explore skill sets related to the Greenhouse Operators Certification Program, Outdoor Power Equipment Certification areas, and the many specialty areas of the state required Commercial Pesticide Applicator Certification examinations. Agricultural Education also utilizes a number of curriculum related NOCTI occupational competency assessments which identify and test nationally standardized skill areas by topic.

3. Internal Evaluation Plus External Credentialing

Career and Technical Education has always excelled in its competency-based approach to teaching and instructional evaluation. The use of specific course task lists and “Student Competency Records” is a comprehensive internal documentation of student achievement. CTE programs could enhance this “self evaluation” system by providing students the opportunity to verify skills learned by passing external industry certification examinations, and/or by meeting the national norm on related NOCTI standardized occupational competency assessments. Business and industry normally considers external credentialing a reliable “predictor of success” for entry-level student employment. Many companies use testing entities like Brainbench to assess employee competency in a given job role using a defensible external testing source. It is also quite common for companies to use external testing to screen applicants for the interview process—only interviewing candidates that can score acceptably on a series of skill set tests that relate to their application area.

4. Building Student’s Self-Esteem and Confidence in Meeting Job Standards

Building student self-esteem as well as developing their confidence in being able to perform specific job roles should be valued. Over 80% of students who attempt Microsoft Office Suite testing pass one or more exams. Does this not say something for student achievement as well as the quality of the related training programs? An Automotive Technology program teacher recently reported that 90% of his students passed the AYES end-of-program tests in all four core ASE automotive technician task areas. This achievement gives students confidence and encouragement to seek employment in this technical field as well as to attempt more challenging ASE exams leading to full industry certification as an automotive technician. Over three hundred students passed state requirements for certified nurse aid in 2005; 361 achieved state Cosmetology licensure. Over 250 Marketing Education students demonstrated competency in basic customer service skills by achieving the National Professional Certification in Customer Service; 110 students verified basic skills in Marketing Education by achieving the Fundamental Concepts of Business and Marketing Certificate.

5. Credentials as “Predictors of Success”

Industry certifications, licensures, or occupational competency assessments do not normally guarantee entry-level employment as “stand-alone” credentials. However, many employers recognize that skill set verification through credentialing can be a good predictor of employee success in a specific job role. As an example, the administrative assistant job candidate who has achieved Microsoft Office Certification in critical skill areas, such as Word, Excel, and Powerpoint, is more likely to succeed as opposed to the candidate who has not externally verified these skills. Many employment agencies use this type of

testing before sending candidates on job interviews. Early Childhood Education program students who can achieve at least the national norm on a NOCTI occupational competency assessment are considered likely to be successful in related job roles. The value of credentials of any type is greatly enhanced by successful completion of the related training program.

6. Program Improvement

Credible accountability for Career and Technical Education programs through high levels of student achievement can at least be partially demonstrated through external testing. Much like what was experienced in the early years of the SOL testing program, there is a natural tendency to assume that student learning is occurring just because material has been presented, or that successful learning is only illustrated by a minority of students who achieve impressive levels of competency. Early SOL scores in many schools showed less than 20% of students passing standardized testing in specific academic areas. CTE programs should be able to demonstrate that a majority of their students can pass accepted industry competency standards in one or more critical skill areas that are included in the instructional program. If NOCTI occupational competency assessments are used, national and state testing norms are available for comparison and program improvement purposes. Student achievement related to specific topical content can also be compared to determine areas where instruction might need to be strengthened. CTE programs can also demonstrate improvement and consistency by being able to show increasing percentages of student achievement each year as well as to increase the number of skill areas being targeted for external verification.

7. Taking Career and Technical Education to the Next Level

Many educators feel that pursuing highly challenging industry skill standards with related certifications “raises the bar” demonstrating that secondary Career and Technical Education programs often go far beyond the “foundational” preparation level for their respective career paths. Achieving an entry-level industry credential in “academy” programs like CISCO, Oracle, or Microsoft is most impressive for the secondary level student. Passing electronics/telecommunications certification examinations, or achieving the national norm (or above) on standardized NOCTI culinary arts assessments are other examples of impressive “stepping stone” achievements for students as they prepare for additional post-secondary training and/or advanced certification in their respective career paths. Over 80% of students in drafting programs and technical design and illustration courses who annually attempt AutoCAD testing achieve this Brainbench certification. Another example would be an observed Dental Assistant program where the instructor makes arrangements for all students to attempt the “Radiology Health and Safety Examination” as a first step to entry-level employment as well as making progress toward achieving full Dental Assistant certification. The particular program cited often has a 100%

passing rate for that credential. The cited credentials with related training represent an important “leg up” for students as they prepare for post-secondary education and/or jobs in related careers.

8. Identifying Extended Career Pathways

Training and credentialing in certain career pathways by combining both secondary and post-secondary education is required for careers in many CTE programs. Utilizing articulation and/or dual-enrollment courses with credentialing benchmarks is one of the best ways of identifying the specific job roles related to selected career pathways, and for preparing for skill requirements within that area. Recent statewide articulation agreements between the Virginia Department of Education and the Virginia Community College System are excellent first steps. This effort is in addition to many excellent regional articulation and/or dual enrollment agreements that have been in place for some time. While not to minimize the importance of CTE programs that prepare for immediate entry into the workforce, many CTE programs need to be advertised and recruited to students and parents as “pathway” programs leading to additional post-secondary preparation for the majority of jobs that are cited by many sources as requiring some post-secondary training by 2010.

9. Meeting the Needs of a Highly Skilled Workforce

Career and Technical Education programs have always been major contributors to a school’s reputation as a prime supplier of skilled entry-level workers for local communities as well as the state as a whole. New legislative requirements that industry credentials and occupational competency assessments be included on the “Virginia School Report Card” gives an opportunity for each school to publicly document the number of Career and Technical Education students who achieve a licensure or industry certification, pass an industry certification “pathway exam,” or meet (or exceed) national norms on NOCTI occupational competency assessments.

10. Building the “Mosaic” of a Robust Resume

The development of robust student resumes is really the primary job obtaining “currency” of the market place—robust resumes usually require long-term development, and include specific job related courses, identification of learned skill areas, on-the-job experiences, recognized industry credentials as well as diplomas and degrees. The “whole picture” is most meaningful to the employment marketplace—usually not individual parts and pieces of achievement. Industry standard credentials are important parts of a resume, and are normally obtained over a period of time at all learning levels.

11. Career and Technical Education Teacher Preparation

A discussion of credentialing cannot exclude the need for CTE teachers to become trained (certified) in at least in one credential they have chosen to target for the programs they teach. Industry certification with related training expands the teacher's content background in the skill set areas and job roles for which they train students. It also enables them to better explain the requirements of specific jobs in related career pathways as well as to put into perspective for students the relative market value of related industry certifications and other credentials. Over 90 industry certification training and testing sessions have been conducted by the Office of Career and Technical Education in the last two years with 2,313 CTE teachers participating. Over 62% of Career and Technical Education teachers in Virginia have achieved at least one industry certification credential.

12. State and Local Support for Credentialing

The Virginia Department of Education (DOE) has supported the Career and Technical Education credentialing initiative with full reimbursement to school divisions for student examination expenses for school year 2004-05, and partial funding for 2005-06. In addition, full state funding for industry certification teacher training academies for selected credentials has served over 2,300 CTE teachers with 1,703 using this training to achieve full industry certification, or to pass industry certification examinations which lead to full certification. An Office of Career and Technical Education staff member is also assigned to research and update information on industry credentials (including NOCTI occupational competency assessments). Responsibilities include the coordination of training academies, data collection and reporting on school division implementation of credentials as well as serving as a consultant to school personnel and DOE staff regarding credentialing issues as related to Career and Technical Education programs. In the 2004-05 school year, eighty-five school divisions reported they had begun student testing using either industry certification examinations and/or occupational competency assessments. Local school division support for teachers who target various credentials for use in their CTE programs is critically important.