

STATEMENT OF ORGANIZATIONAL CAPABILITY



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INTRODUCTION

VTECS has a thirty-year history of operating as a consortium of states where members pool resources to develop competency-based career and technical education products that are validated by business, industry, and labor. In order to develop these products, VTECS employs a complete occupational analysis system whereby data is collected from incumbent workers for the specified occupational area. With our elaborate and lengthy history, VTECS has had the pleasure of working with numerous federal and state agencies to promote the systematic research, development, and implementation of competency based career-technical education and training.

VTECS functions through a Board of Directors, which provides each member state an equal opportunity for input regarding the critical issues and policies affecting the consortium. The VTECS Executive Director reports to the VTECS Board of Directors, which is made up of one representative from each member state. VTECS operates with a small central staff (six full time professional staff, and two full time administrative support staff) augmented by a highly experienced cadre of consultants, who are assigned to projects based on the specific needs of the project. Both staff and consultants have all conducted and/or managed large-scale research, development and programmatic activities in career and technical education. Each team member is highly skilled in working with state, local, and national level management teams and their stakeholders to reach consensus on the concepts and designs under consideration.

Thirty Years of Experience

VTECS is nationally recognized for its expertise in developing standards and assessment systems based on a valid occupational analysis process. In the early 1990's, John Wirt, author of *Testing and Assessment in Vocational Education*, published by the Office of Technology Assessment, U. S. Congress, 1994, asserted that "*VTECS has had the most influence of any organization in the United States on what has occurred in occupational curriculum and assessment development.*" According to research conducted in 1993 by Joan Wills, Director of the Workforce Development Center, Institute for Educational Leadership, forty states and thirty-two foreign countries have utilized VTECS products, processes, tools, and technical assistance leadership to enrich their analysis, instructional, skill standards, and assessment efforts.

Historically, the VTECS organization has:

- Provided leadership to over 40,000 workers in the analysis and validation of the duties, tasks, and skills needed in some 200 occupational domains representing over 1,000 occupational titles.
- Developed and distributed the VTECS DIRECT© software system designed to manage VTECS occupational and instructional information including item banks. VTECS DIRECT© is used in over 2,500 business, industry, education, and training organizations.
- Developed and distributed the VTECS Connect© software package to manage work-based education programs such as apprenticeship, internship, co-op, and any other workplace learning situation that requires the development of customized training plans.
- Published a set of Workplace Skills validated with business, industry, education, and government leaders in sixteen states. Over 600 test items – both scenario and multiple-choice – have been written to support these Workplace Skills.
- Developed the *Taxonomy of Academic Performance Indicators (TAPI)* (originally titled, *VTECS/Snyder Basic Essential Skills Taxonomy*) and a process for identifying the related academic skills (language arts, math, and science) embedded in occupations. Development was led by the State of Arizona and verified with eighteen other states.
- Developed the VTECS *Linkage Process*© for analyzing and cross walking academic and occupational skill standards using the *TAPI*. Through a contract with Cisco Systems, we have worked with over thirty states to analyze and crosswalk their academic and/or occupational skills

Highlighting Two Statewide Assessment Projects

Two projects managed by VTECS that demonstrate our experience and ability in designing and developing assessment systems are the *South Carolina Assessment Project* and the *Kentucky Manufacturing Assessment Project*. Both projects involved working with representatives from three different state agencies (secondary, post secondary technical education, and community colleges) as well as representatives from business and industry. In fact, the Kentucky work was partially funded by the Blue Grass Skills Coalition, a Kentucky-based business and industry foundation.

In South Carolina, VTECS designed and developed an assessment system that combined both written and performance tests. Twelve assessments for seven areas offered in secondary and tech prep programs were developed, piloted, and implemented. All items and support materials were developed, verified and approved by a Technical Advisory Committee composed of educators (secondary and post-secondary) and business/industry representatives. The performance component was administered by instructors with business/industry subject matter experts serving as evaluators. Student performance was rated using a carefully constructed checklist.

For Kentucky, VTECS designed and developed a certification system, which addressed the core knowledge and skills for manufacturing as a cluster. The instruments were developed around an item bank model for which VTECS also developed and delivered the necessary software and documentation for long-term management of the system. The Kentucky tests are best described as tests that measure the common academic, employability, and technical skills that cut across Manufacturing. The Basic Test is used by Kentucky as an exit exam for high school students as well as an entry-level exam for programs at the post secondary level. The Advanced Test is used as a post secondary completer exam and with workers in business and industry to certify their core knowledge and skills

level. This project serves as an excellent model for developing tests for the 16 career clusters. This spring, the Kentucky Manufacturing Assessment and Management System was judged by SREB HSTW reviewers as the best existing test that addresses both literacy and technical skills for clusters.

More Examples of Large-Scale Project Experience

Four additional activities that clearly demonstrate VTECS ability to successfully manage large-scale national and state level standards and assessment research and development projects are:

- In 1992, the **United States Office of Education** awarded a grant to VTECS to develop the ***Heating, Air Conditioning, and Refrigeration National Skill Standards (HVAC)***. VTECS identified the skills, knowledge, standards, and measurements; and subsequently validated them with groups of workers across the nation. An item bank was developed and a prototype certification assessment instrument was generated.
- VTECS worked with the **Professional Secretaries International** to develop skill standards, measures and test items for the ***Administrative Support Occupations***. This project involved the development of methods to secure demographic data related to the support occupations area, the impact of current technology on these occupations, and validation of the materials with businesses and industries in which administrative support personnel work. The two-year project involved business and industry employees, teachers, administrators, university teacher educators, and others. Since then VTECS has developed two other parallel documents that address ***Business Management*** and ***Financial Occupations***. We have also developed test item banks for all three areas and prototype assessment instruments that include both a written and a performance component.
- As part of a U. S. Department of Education and Labor National Skills Standards Project, the **Electronics Industry Foundation (EIF)**, contracted with VTECS to develop measurement criteria for their draft ***National Skill Standards for Electronics Technicians*** during 1995.
- As part of one of the U. S. Department of Education and U. S. Department of Labor National Skills Standards Project, the **National Automotive Technician Education Foundation (NATEF)**, asked VTECS to lead eight teams of automotive technicians, nine teams of medium heavy truck technicians, and five teams of collision repair technicians in the identification of the related academic skills required as a part of their job. The **TAPI** was the primary tool used during the analysis of the existing ASE/NATEF technician standards. This work was conducted during 1993-1995.

Examples of Research in Assessment

We are pleased to report that we have also done comprehensive research in the assessment area. In 1998 VTECS published ***The Status of Alternative Assessments Through the 1990's – Performance and Authentic Assessment***, by Dr. Barbara Border, VTECS Consultant. The purpose of this research was to identify current models, methods and practices of performance and authentic assessment. As a result of this research, Border found that most of the models and tools identified were still incomplete in terms of measuring total student performance, but many models reviewed did show significant promise.

VTECS has done extensive research in recent years on the use of performance scenarios as both instructional and assessment vehicles. When VTECS began developing item banks in 1986 it focused on three types of items: multiple choice, matching, and performance. Later VTECS expanded its work in assessment to include scenarios. This work continued through the U. S. Department of Education Career Cluster Project for the ***Arts, Audio-Video Technology and Communications Career Cluster***. As a part of this project we have worked with nine local pilot sites to develop and pilot test over 150 scenarios with standardized rubrics. As a result of this work, Melissa Briscoe, VTECS Consultant, authored a handbook published by VTECS titled, ***Developing a Scenario: A VTECS Skill Standards, Instructional Design, and Assessment Strategy Module***. Earlier this year, VTECS pilot tested performance scenario assessments where test taker performance on each scenario was evaluated using a rubric developed and verified by subject matter experts. The instruments cover foundation skills in communications and employability and career development that were identified as common across all 16 clusters.

Other Educational Research

In addition to projects already cited, we offer a few other examples of our work in educational research that have contributed to the literature in the field.

- In 1994 the Workforce Development Center, Institute for Educational Leadership, commissioned the Executive Director of VTECS to write a paper for the U. S. Department of Labor regarding issues related to the development of occupational/skill clusters. The paper was published as *Observations Regarding the Development of Occupational/Skill Clusters*. (McCage)(1994). This paper addressed two issues posed by the sponsor. (1) If one could group occupations by industry using commonalities such as directly related knowledge and skill sets, how many industrial families would one have? How many pathways or concentrations would be in each family based on common skill sets? (2) The second issue centered around using knowledge and skill sets to describe cluster content instead of using work units, i.e., duty/tasks/functions as descriptors, etc. All of this work served as a basis for the creation of the VTECS Career Cluster Wheels in 1995 and was later used by the U. S. Department of Education as one of its sources of information for arriving at its sixteen clusters.
- In 1995 the **U.S. Department of Labor, Bureau of Labor Statistics**, commissioned VTECS to write an advisory paper regarding the revision of the Standards Occupational Classification System using a skill-based concept. The paper was published as *Observations Regarding a Revised Standard Occupational Classification System Using a Skills Based Concept*. (McCage, Olson) (1995).
- In 1997 the **State Administrators of Family and Consumer Sciences** selected VTECS to coordinate the development of the *Family and Consumer Sciences (FACS) National Standards*. This project involved collecting and analyzing state models, designing a national model to incorporate both the academic and occupational aspects of this discipline, establishing a design for each element of the product, including standards, competencies, academic proficiencies, process, and scenario assessment. National groups involving most of the states and several universities were assembled three times and states were asked to review materials and the data from each of these events compiled, with the standards and related elements development based on the research and feedback. Over 11,000 copies of the FACS standards have been disseminated by VTECS.
- **U. S. Army Project.** Currently, VTECS is conducting a research project for the United States Army Recruiting Command (USAREC) at Fort Knox, Kentucky. As a premise for this project, USAREC wants to reward entry level recruits with a higher rank, which translates to more pay and/or exempt them from all or part of their Advanced Individual Training if they can document the technical knowledge and skills they possess upon entry into the service. Consequently, USAREC has contracted with VTECS as a preferred provider to develop a crosswalk of career and technical education courses and programs that match up with selected military occupational specialties, as well as a way of documenting these skills at the recruiter's office.

Experience in Professional Development for Educators

As a part of our everyday duties at VTECS, staff routinely conduct numerous presentations and workshops regarding competency-based occupational-technical education, occupational analysis, instructional design, skill standards, assessment, and the use of our software, VTECS DIRECT© and VTECS Connect© for local, state, national, and international audiences. In addition, every project we manage involves some form of in-service or training regarding the development of standards, assessments, assessment systems, and software systems to manage the type of information we develop.

Other related activities include, but are not limited to, having:

- Co-sponsored, with the National Association of State Directors of Career and Technical Education, the National Career Clusters Institute for about 400 people in Phoenix, Arizona, in June 2003.
- Provided leadership for the conduct of four national conferences regarding critical issues in vocational-technical education assessment of standards and measures.
- Hosted a National Forum on State Level Standards and Assessment Systems for Vocational-Technical Education, with sixty-six individuals from twenty-two states in attendance.
- Hosted forty-five delegations from some 35 foreign countries at the VTECS offices in Decatur. These visits were arranged by the U. S. Department of Labor or the World Bank.
- Conducted VTECS training sessions for 10 US Army Branch Schools.

VTECS ORGANIZATION AND FUNCTION CHART

