THE OHIO STATE UNIVERSITY
CENTER ON EDUCATION AND TRAINING FOR EMPLOYMENT
COLLEGE OF EDUCATION AND HUMAN ECOLOGY

CENTERGRAM

Summer 2010

Certificates and Certifications: Credential Clarification Is Critical!

by James T. Austin, PhD

Stimulated by the current economy, adults are returning to training and education to enhance their labor market success. Government workforce-economic development agencies as well as private and community organizations advocate certifications and certificates. *Credential* is the generic term for such designations. Together with educational degrees, state licenses, and registration systems, certificates and certifications signal competence in the individual (Schoon & Smith, 2000) and fit into a movement toward lifelong learning through "stackable credentials" for individuals. Accreditation, which occurs at a program rather than an individual level, can also be considered a credential; it shows the interest of providers in quality assurance for delivery of learning and evaluation. Certifications formed a "parallel postsecondary universe" in Adelman's (2000) summary of Information-Communications Technology (ICT) credentials. Although ICT certifications differ from many others because almost all are vendor specific rather than vendor neutral, Adelman concluded that the number of certifications in ICT enhanced access for individuals who might not have attended postsecondary institutions. Access is enhanced by allowing individuals to demonstrate competence. Thus, one policy argument is that credentials in general benefit stakeholders, for example by sustaining learner persistence. Persistence is sustained by decreasing the distance between rungs on a career ladder or between sections of a career lattice. Or, credentials may enhance access to opportunities or substitute for education credentials.

Stakeholders in credentialing range from individuals seeking jobs and labor market success to bodies awarding the credential, to business firms, governments, and the public. Interpretation of the Perkins IV (2006) legislation funding career-technical education, for example, stakes out a federal position on "state- or industry-recognized certifications" to document secondary and postsecondary technical skill attainment. Ohio developed a precollege Stackable Certificate system with three levels—Basic, Advanced, and College-Work Ready Skills Certificates. Basic and Advanced Skills Certificates are currently awarded. Probably the best known program is I-BEST, or Integrated-Basic Education and Skills Training. In Washington state, researchers from the State Board of Community and Technical Colleges reported a "tipping point" for labor market success. The tipping point is reached with one year of credit-bearing course work plus an industry-recognized credential. The Washington state program, I-BEST, integrates basic education and skills training by co-teaching, which has specific costs flowing from the two-teacher model. Credentials earned through I-BEST range from a Commercial Drivers License to a Child Development Associate.

This article presents materials within the context of standards developers approved by the American National Standards Institute (ANSI). ANSI is the U.S. member of the International Organization for Standardization (ISO). Standards development and conformity assessment are key components of the mission stated by ANSI. The Institute for Credentialing Excellence (ICE), formerly the National Organization for Competency Assurance (NOCA), is an organization for groups involved in voluntary certifications. ICE is a U.S. standards developer that serves as a professional forum for certification agencies and certification vendors (testing firms, database and support firms, etc.). Among the products of ICE are a handbook on developing and maintaining certification programs (Knapp, Anderson, & Wild, 2009), an accreditation program for certifications based on 21 quality standards (National Commission on Certifying Agencies [NCCA], 2004), a side-by-side comparison of certificates and certifications, and a U.S. standard for test-based certificates, *ICE 1100: Quality Standard for Assessment-Based Certificate Programs* (ICE, 2009). A second ANSI-approved standards developer is the Joint Committee on Standards for Educational Evaluation at the Evaluation Center of Western Michigan University (www.wmich.edu/evalctr/jc/). This organization offers the Personnel Evaluation Standards (Joint Committee on Standards for Education Evaluation [JCSEE], 1994) for providers in education and training (teachers, instructors, professors) and the Student Evaluation Standards (JCSEE, 1988) for learners. A third ANSI-approved standards developer is the ASTM (formerly the American Society for Testing and Materials), which released *E2659-09, Standard Practice for Certificate Programs* (ASTM, 2009) and received ANSI endorsement as the national stan-

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Ohio Webxam: Beyond CTE

by James T. Austin, PhD

The Webxam portal serves a range of measurement projects in addition to its primary mission of supporting secondary career-technical education through development and delivery of technical knowledge and skill tests. Two additional assessment systems for secondary students are described in this update from CETE Assessment Services.

One is an online system for capturing assessor evaluations of Teaching Professions student portfolios using a pathway system rubric for evaluating student portfolios (rubric revised 2008-09). Since the system was rolled out in 2009, CETE staff members have accumulated experience and data from the current mandatory year of operation (the 2009-10 school year). More than 60 teachers have requested and received credentials. Even with documentation, the expected technical support issues emerged, but other issues specific to an assessor- and rubric-based model were prominent as well. The portfolio assessment system operates by first activating teachers approved by an Ohio Department of Education representative, allowing the teacher to enter students and assessors. Then, when the teacher assigns an assessor to a student, several actions occur. The student portfolio in print is provided to the assessor by the teacher and the assessor is sent credentials for logging into the Webxam system. Next, assessors log into the system, complete information about themselves, and enter their judgments using the competencies listed under five sections of the rubric. The teacher has a display that gives averaged judgments for 20+ competencies, 5 sections, and an overall score (4-100). Benchmark scores (pass-fail, pass-advanced) will be established with field input through an online survey of minimal competence. User satisfaction will be evaluated through an online survey. Long-term, electronic submission of the portfolios is a strategic goal of CETE project staff. This method of assessment can be applied to rubrics for projects or other forms of student work.

Another Webxam system consists of end-of-course tests for Family and Consumer Sciences (FCS) programs that are aligned to the 2007 standards released by the Ohio Department of Education. Working with a partner school district, CETE has been offering these tests for five courses aligned to the 2007 FCS standards and another series of tests aligned to the strands of the 2001 Work and Family Studies. Test items are all multiple choice with a blend of scenario and simpler formats. Since 2006, when the system was rolled out, more than 25,000 students have been tested. The Work and Family Studies tests will be phased out following this year of operation, and only tests aligned to the 2007 FCS standards will be available. Current plans call for establishment of content validity, benchmarks, and item review for those tests and new ones (Healthy Safe Food) at a workshop to be held at CETE on June 21, 2010. Contact Jim Austin at austin.38@osu.edu for details.

Project KNOTtT Update

by Paula Kurth

Yolanda Stewart, a graduate student in Educational Policy and Leadership and teacher with Columbus Public Schools, is joining Project KNOTtT (Kansas, Nevada, Ohio, and Texas Transition to Teaching) as a Graduate Research Associate for the summer quarter. Welcome, Yolanda!

Sandy Muir is a new Special Education e-coach for Project KNOTtT. Dr. Muir comes to us with a broad range of experiences as a school superintendent, Ohio Department of Education staffer, and special education teacher. She also has worked with charter schools and preschool programs.

The e-Bilingual module is now completed and ready for access via the KNOTtT website. This module will be used by KNOTtT participating teachers as they prepare to take the PRAXIS or TExES subject-matter test. E-coaching sessions will be held beginning in August for those taking these exams.

Project KNOTtT e-coaches were busy in March, April, and May. In those three months, a total of 13 science, 7 math, 4 PLT (Principles of Learning and Teaching), 6 special education, 1 classroom management, and 2 communications e-coaching sessions were held. Each session is conducted via LiveMeeting, allowing participants to ask questions, and lasts for one to two hours.

Brad Henry, Project KNOTtT, attended an ELT Round Table on Using Technology in Adult Education.

AtA Develops Pathway Test Items

by Michael E. Wonacott

Under Articulation through Assessment (AtA), sponsored by the Ohio Department of Education (ODE), CETE is revising Ohio's career-technical education (CTE) testing system to better serve the needs of CTE students as they transition to postsecondary education. CETE has developed test items in the six pathways shown in the table below.

In each pathway, secondary instructors in appropriate program areas were recruited to act as subject matter experts (SMEs) to write pathway test items in face-to-face workshops. In each item writing workshop, SMEs rated their own experience and expertise in specific areas covered by the pathway test; SMEs were then assembled in small groups and assigned to write items according to their self-rated expertise.

A CETE staff member acted as facilitator for each small group, leading the group process and helping to ensure that items developed meet CETE and ODE quality standards. Small groups addressed two quality standards in particular:

- **Item Challenge.** Twenty to thirty percent of pathway test items are developed at a higher level of cognitive challenge, C2 in CETE terminology. C2 items fall under the four higher levels of Bloom's Taxonomy of Education Objectives: application, analysis, evaluation, and synthesis.
- **Scenarios**. Thirty percent of pathway test items are based on a scenario—a situation, story, or passage of text that provides contextual information in four to six sentences. Each scenario serves as the basis for two or more associated test items. Test takers must locate and use relevant information in the scenario to answer associated items correctly.

Pathway	Career Field
Agricultural and Industrial Power Technology Animal Science and Management Horticulture	Agriculture and Environmental Systems
Visual Design and Imaging Media Arts	Arts and Communication
Integrated Marketing Communications	Marketing

A Survey of Transitions in ABLE

by Traci Lepicki

Ohio continues to work toward an integrated educational system for adult learners, a system that encourages aspirations beyond the GED to postsecondary education and employment. So, how are Adult Basic and Literacy Education (ABLE) programs faring in the push to move students beyond the GED into postsecondary education and employment?

To begin answering this question, the staff of the ABLE Evaluation and Design Project surveyed Ohio ABLE administrators to better understand student transitions from a local program perspective.

Overall, administrators rated their activities favorably and offered examples of positive student experiences as key indicators of successful programming. However, in spite of their students' positive experiences, administrators listed difficulties in attracting new students and retaining and moving current students forward in their education as major challenges. Also, administrators mentioned additional funding, professional development, and policy guidance among their greatest needs.

In May, project staff Traci Lepicki and Adrienne Glandon presented these preliminary findings and strategies for consideration to a statewide meeting of ABLE administrators and Ohio Board of Regents staff. The full report of the survey will be available later this summer.

For more information about the Ohio ABLE Transitions Survey, contact the ABLE Evaluation and Design Project staff: Traci Lepicki (lepicki.1@osu.edu), Adrienne Glandon (glandon.8@osu.edu), Jim Austin (austin.38@osu.edu).

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dard. The broad components of the ASTM E2659-09 standard include requirements for certificate issuers (body providing the certificate) and requirements for certificate programs (content presented to learners). Requirements for certificate programs are divided into two categories: (1) Certificate Program Plan and (2) Analysis, Design, Development, Implementation, and Evaluation (ADDIE).

What then distinguishes certificates and certifications? Primarily, a *certificate* is a credential that recognizes individuals who follow a clearly defined path through content, based on a combination of courses and learning experiences. The content can range widely, and there is no standard requirement for accreditation of the certificate provider or to distinguish between certificates verifying attendance and those verifying learning outcomes. A test to document achievement is optional, although I would argue that better certificates offer an in-house or a third-party test to confirm learning outcomes. On the other hand, *certifications* are credentials awarded for demonstrated mastery of a defined domain of practice or body of knowledge (Rops, 2002) through a combination of education, experience, and examination score. There is no requirement for specific courses and separation between education and certification is mandated by NCCA. Multiple learning pathways and routes can be followed, as illustrated in the information technology (IT) certification domain. These three requirements—education, experience, and examinations—can be configured in many different ways. Additionally, all are capable of validation or verification. Certification agencies and vendors typically belong to ICE whereas licensing professionals and vendors belong to the Council on Licensing, Enforcement, and Regulation (CLEAR).

Having distinguished certificates and certifications, what is the status of certificates within Ohio? A broad range exists, spanning short-term, narrow-tailored certificates to two-year associate degrees, four-year bachelor degrees, and postgraduate degrees. Educational institutions are major providers of certificate programs, although government agencies, community organizations, and business firms offer them as well. Dennis Budkowski of Marion Technical College has crosswalked subjects to career fields for the Ohio Board of Regents. On behalf of the Ohio Association of Chief Academic Officers (CAO), Dennis also coordinated a master listing of certifications and their links to certificate programs across Ohio public institutions, now known collectively as the University System of Ohio (USO; http://uso.edu/). This listing divides certificates by their intensity (time-span) from short-term to associate degree level. The certificate/certification categories range from short-term programs through technical, "one + one," credit toward degree, examination, and skill development.

Considering the range of certificates offered within Ohio postsecondary institutions is instructive. The institutions are broadly defined to include adult workforce education and training centers as well as traditional postsecondary educational institutions. For example, multiple certificates have been offered in Manufacturing by the Rhodes State College; they range from a 40-hour Basic Certificate that covers broad introductory content to an Intermediate Certificate to an Advanced Certificate that earns an Associate Degree. For this certificate, an end-point certification might be the Certified Production Technician (CPT) offered by the Manufacturing Skill Standards Council (www.msscusa.org), which requires that the candidate pass four tests (passing one of the tests earns a "certificate," which is another case of imprecise language). Another short-term certificate is Pre-Employment Training (PET) as offered by C-TEC of Licking County in a series of courses. A medium-term example is the Stark State College of Technology certificate in Fuel Cells offered through Engineering Technology. This one-year certificate can count toward an AA degree or course transfer. Although there is no certification at present for Fuel Cell specialties, the National Institute for Certification in Engineering Technology offers other certifications in the broad occupation that may serve as exemplars of appropriate national certifications linked to Ohio certificate programs. Consider an example from ICT certificates offered at multiple levels by multiple providers. Specifically, a Cisco Academy networking series of courses offered at the secondary (HS) level may fit a program of study that counts toward high school graduation, also meets Perkins IV requirements, and finally aligns to a national certification (CCNA, Cisco Certified Network Associate, for instance). Behrens, Collison, and DeMark (2005) discuss Cisco Academy assessment models within a framework of "Seven Cs" that acknowledges the experience gained in delivering 40,000,000 assessments through the NETPASS system. Likewise, the same set of skill standards can be offered by institutions that provide adult career technical education for individuals with HS or GED (General Educational Development) credentials or by community and technical colleges. Clearly, it is in the best interest of Cisco to accredit the programs through indicators of quality (instructors should be certified, etc.) that offer its skill standards due to the effects on Cisco reputation of poor-performing providers.

Certifications are numerous. Two dominant occupational domains within the certification sector are ICT and health care, with vendors dominating the former and voluntary associations the latter. It is also possible to organize certifications along two related dimensions: (1) specificity of content (from broad workforce readiness through intermediate levels

to narrower technical domains) and (2) career progressions (entry, continuing, advanced). By way of illustration, two broad workforce readiness certifications for entry-level workers are the ACT National Career Readiness Certification (WorkKeys-based) and the National Work Readiness Credential (based on Equipped for the Future content standards and developed under the sponsorship of the U.S. Chamber of Commerce). Certifications for the National Restaurant Association Education Foundation Serv-Safe (food, alcohol) or the National Retail Federation Customer Service might be considered broad and entry level. Intermediate certifications include the International Computer Driving License (ICDL) or the Internet and Computing Core Certificate (IC3), which address digital literacy; the Certified Production Technician offered by the Manufacturing Skill Standards Council; and the Child Development Associate certification for child care workers. Narrower certifications include Computer Security certifications such as those offered by Cisco and Microsoft or health care specialties such as Medical Technologists or Medical Laboratory Technicians. The table summarizes selected credentials (examples) according to type of granting body and credentialing "model."

What conclusions can be drawn about stackable certificates? They certainly fit into a market space that relies on demonstrations of competence by individuals and by providers (accreditation). One conclusion is that stackable certificates create a workforce development system with multiple routes, access points, and providers. In stackable certificate initiatives, for instance, multiple types of providers move learners through inputs, processes, and outputs. Two of them are fixed. Inputs are prescribed variously as competencies, as a body of practice (knowledge-skill-judgment), or as content/skill standards. Outputs are evaluated through learners who take tests or assessments (broadly defined). But what varies is who transfers and how they transfer the inputs to learners. Specifically, the teaching-instructional cycle is left to multiple providers with the output verified by the assessment. Thus,

Selected Credentialing Providers by Type and Credentialing "Model"

Type	Example	Credential "Model"
Government Regulatory Board	Well-driller (www.license.state.tx.us/wwd/wwd.htm)	State license (i.e., Texas) based on a national certification test
Professional Association	National Board for Respiratory Care (www.nbrc.org) or Council for Professional Recognition (www.cdacouncil.org)	Registered Respiratory Therapist (RRT) and Certified Respiratory Therapist (CRT) Child Development Associate (CDA)
Trade Association	National Automotive Technical Education Foundation (NATEF) (www.natef.org/end_of_program_test.cfm) National Restaurant Association Educational Foundation (www.nraef.org)	Automotive Service Excellence (ASE) certification (test scores with performance standards), also featuring End-of-Program Tests for secondary students Serv-Safe certifications for food and alcoholic beverages as well as other restaurant sector positions, with separate learning systems
Vendor-Specific	Microsoft Office Specialist (MOS) (www.microsoft.com/traincert)	Microsoft Official Certificate with successful test score: Core and Expert levels
National Skill Standards Board (former U.S. government entity)	CorePlus "Model" for industry sectors (manufacturing, retail, health care)	Document core standards *plus* one specialization (voluntary partnership certifications)
Testing Nonprofit (ACT, Inc.)	National Career Readiness Certification (NCRC): Applied Mathematics, Locating Information, Reading for Information	Pass a battery of WorkKeys tests (applied academics) at levels 3-5 to earn a Bronze, Silver, or Gold certificate (based on lowest score)

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a distance-blended approach could be used, or an inquiry-based approach offered face-to-face. The results, in an experimenting society (Campbell, 1969, 1991), would be evaluated and used in system or program improvement efforts. Also, when considering a systems perspective on certificates and certifications it is important to ensure alignment as in the case of the University System of Ohio. This state-supported system is designed to serve adults from very basic levels of seeking the GED (adult basic education and English for Speakers of Other Languages) through training at adult career centers (formerly adult workforce education), two-year colleges, and four-year institutions with undergraduate, graduate, and professional degrees.

A second conclusion flows from the beguiling term "industry-recognized" from the Perkins IV legislation, which covers a multitude of issues. Which industry sector(s) recognize the credential? As well, do individuals and firms understand the value of credentials? Clearly, there can be awareness and marketing issues for certificates and certifications in contrast to traditional and long-standing credentials (diplomas, licenses). For example, smaller or medium-sized enterprises might have lesser awareness of certifications. Recall that Adelman (2000) defined three interacting platforms: (1) establishing certification of competence, (2) providing opportunity-to-learn and testing, and (3) awarding certifications. All platforms and actors should be carefully analyzed when establishing a system that deploys certificates or certifications. The logic of analyzing the platforms is the insight provided into awareness and marketing efforts—perhaps a logic model of certifications could be constructed.

Third, legal minefields are associated with the use of certifications in hiring if careful procedures are not followed to justify the certification in the hiring organization. The issue is that a certification is designed to evaluate a content domain or body of knowledge across firms and settings, while an organization is a specific firm and setting. Therefore, it is crucial that organizations considering using credentials in hiring should make sure that they conduct their due diligence, most often through local job analysis and linkage.

System Building

In Ohio the postsecondary providers of credentials consist of a system of two-year and four-year institutions plus adult workforce education and training centers. Examples include C-TEC of Licking County, Miami Valley Career-Technology Center, and Butler Technology and Career Schools. Continuing the focus on adults, there is a shared funding (federal-state) adult basic education component as well that supports learners in achieving the GED (which will be updated and revised over the next five years). Clearly, other states provide different configurations of public providers but there is a movement toward consolidation (Minnesota, for example). In addition, proprietary schools add a competitive component to the credential market. As a final message, contemplate the powerful system that could be created if the following conditions were implemented as policy.

First, certificate design should remain under the creative control of postsecondary institutions, who can best gauge and respond to local-regional requirements expressed by business-industry and workforce policy advisory boards (for instance, in sectors of manufacturing, retail, or health care). In the manufacturing sector, for example, it is possible to define competency models for entry and advanced manufacturing, as well as specialized certificates in biotechnology manufacturing, nanotechnology, or alternative energy (fuel cell, solar-photovoltaic, geothermal).

But, verification of individual competence following certificate completion should be shared by the certificate-awarding entity (community college or adult technical career center) and through alignment to certifications accredited by NCCA (www.credentialingexcellence.org). One model for this third-party verification is the Manufacturing Skill Standards Council, which offers a tiered system in which passing any one of four tests earns a credential, but passing all tests earns a more prestigious Certified Production Technician™ designation. Under this model, a range of organizations and institutions provide program content.

> The credential titled Automotive Service Excellence (ASE) from NATEF is a classic example of a well-established certification that is understood by small, medium, and large car dealers and repairers all over the U.S. The importance of the brand cannot be overemphasized. This program can be introduced in secondary and adult programs, with awareness and initial proficiency as objectives of curriculum. Then, at more advanced educational levels if degree and certificate program designers recognize and use the regular NATEF task analysis, which drives the certification examination, they could legitimately point to the certification as an end-point that should satisfy the tipping point hypothesis for labor market success.
>
> A network systems IT pathway to the same tipping point could also begin in high school and be routed through the large number of Cisco Academies (Behrens, Collison, & DeMark, 2005). Following

graduation, individuals could pursue different routes to achieve entry-level certification as a CCNA and higher-level, advanced competence credentials. These routes include simultaneous work and learning. The learning can occur through (1) self-study of widely available print and online materials offered for a fee, (2) company-provided instruction (associated with size), or (3) firm-institution collaboration to provide employee access to formal certificates and degree programs.

Another route forced on some individuals is the displaced worker model, in which job loss creates an immediate need for rapid retraining on the part of involuntary career parachutists. Consider the Microsoft community investment program just launched in 2009—Elevate America. This program makes sense for workforce development stakeholders including students, IT professionals, and entrepreneurs.

A final theme is the importance of evaluation of certificates and certifications. Mahlman and Austin (2003) proposed that credentials could be judged for their merit against standards. The accreditation of certification programs against ICE-NCCA or ANSI is another example. Certificates too can be evaluated against standards, and recent systems include ICE 1100 or ASTM E2695-09. The Southern Regional Education Board released a 2009 report in which certifications were evaluated against criteria in three sets: Essential (nine standards), Necessary (two standards), and Desirable (four standards). Moving beyond description to evaluation of credentials will become increasingly prominent.

A final point is that there are few integrated packages of third-party certifications that are also accredited. CETE staff members believe that it is an indicator of professionalism and quality assurance for a certificate or certification provider to seek accreditation. Recall that accreditation for certificate providers is offered by ICE and by ASTM, while accreditation for certification providers is offered by NCCA and by ISO/ANSI. Systems seeking to use certificates and certifications should ask whether the credentials are offered by a reputable and accredited body, but should also ensure that they receive an answer before they expend public dollars. Recent legislation proposed by Senator Feingold (Skill Standards Certification Evaluation Act of 2009) would create a system of evaluating and ranking certifications repeated every two to three years. Accreditation and legislation may be two ways to ensure the quality of certifications and ensure that access and quality goals are achieved.

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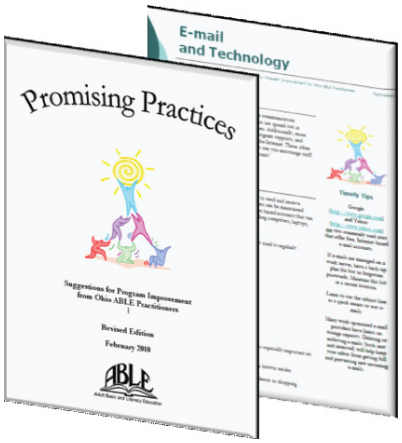
Promising Practices in Adult Education

by Adrienne Glandon

In 2008 CETE staff members published *Promising Practices*, a collection of scenarios, practitioner advice, and suggestions from research and policy focused on realistic issues in ABLE (Adult Basic and Literacy Education) programs. This document follows themes, including:

- Orientation
- Goal Setting/Review
- Curriculum/Instruction
- Technology
- Monitoring Performance
- Retention
- Follow Up
- Data
- Program Management
- Recruitment
- Partnerships

The 2010 edition of *Promising Practices* has just been released. In this revision, CETE staff members have expanded current entries and included additional practices. It is now available on the University System of Ohio's website.



http://www.uso.edu/network/workforce/able/reference/best-pratices/promising-practices.pdf

For more information on *Promising Practices*, contact Traci Lepicki, lepicki.1@osu.edu.

Events

DACUM/SCID

DACUM (Developing a Curriculum) Institute, July 12-16, September 13-17, or November 8-12, 2010, 8am-5pm, hosted by CETE, Columbus, OH; $1,495

SCID (Systematic Curriculum and Instructional Development), July 19-23, September 20-24, or November 15-19, 2010, 8am–5pm, hosted by CETE, Columbus, OH; $1,395

For information, contact Robert Norton, norton.1@osu.edu; John Moser, moser.120@osu.edu; Debbie Weaver, weaver.22@osu.edu; www.dacumohiostate.com.

Test Development Workshop

July 12-14, 2010, 8:30am-4:30pm, Columbus, OH; $1,100

Constructing valid, reliable assessments of job-specific knowledge and skills is critical to effective human resource practice. This workshop provides participants with practical knowledge and skills to understand the creation of valid, reliable, and legally defensible assessments. For information, contact Kathy Summerfield, summerfield.1@osu.edu or 614/688-4000, or Jim Austin, austin.38@osu.edu or 614/292-9897.

Centergram is published quarterly by the Center on Education and Training for Employment, College of Education and Human Ecology, The Ohio State University, 1900 Kenny Road, Columbus OH 43210-1016; 800/848-4815; fax: 614/292-1260; cete.org. Editing and Layout: Sandra Kerka.

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