JANUARY 2009

Techniques

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HERMES CREATIVE AWARDS

APEX AWARDS FOR PUBLICATION EXCELLENCE

ACTE PUBLISHED BY THE ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION

The New ACTE Web Site

To better serve its members and the public ACTE not only redesigned its Web site, it created an online home for the information and tools that CTE professionals need.

Home

The lowdown on events, education, research, advocacy and membership are all now just a click away! Get around more easily with more sensibly organized materials. Use prominent hotlinks to get to popular areas faster. Search with ease for the materials you need. Find the latest news on specific areas of interest by clicking through the custom tabs.

ACTE Forums

Sound off! Our public and members-only forums are the best place to talk CTE practices, policies and Association matters with other professionals just like you. Network, swap lesson plans and make your voice heard by joining now.

Blogs

From policy to the latest trends in CTE, Association staff and other CTE professionals will be blogging about it. We're looking to build a new blogosphere for educators to read and share their thoughts, so join in the discussion now!

Policy

Our policy tools have never been easier to use. Write to Congress, find advocacy materials, download issue briefs and position papers, or just get a feel for the Association's most important work—advocating for the funding necessary for CTE educators to do their jobs and build a stronger American workforce.

Shop ACTE

The remodeling process is just beginning. In the coming months, the entire store will be reconfigured to allow for more user feedback and easier purchasing.

Techniques

ACTE's award-winning magazine is now easier to navigate and a revamped search function makes it easier and faster to find the articles you need.


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JANUARY 2009

Techniques

CONNECTING EDUCATION AND CAREERS

VOLUME 83/ NUMBER 9

Integrating CTE and Academics


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Features

Departments

Time to be Resolute About the Value of CTE

Janet B. Bray

JANUARY—A TIME OF RENEWAL AND HOPE. A time when most of us traditionally make resolutions to change or improve something. Resolutions always look to the future and seek positive outcomes. With this in mind, it only makes sense that career and technical education (CTE) be a part of everyone's resolutions as it is most definitely about the future and promoting positive outcomes for individuals, institutions, states and our country.

These are interesting and challenging times for our country. Most of us have personally felt the impact of the financial turmoil. The financial challenges are putting significant pressures on all our institutions, especially the education system. At the same time, technology continues to reshape the workplace and put greater need for new or enhanced knowledge and skills. I believe strongly and passionately in CTE. I believe that CTE is a solution for many of the issues and challenges being addressed on a local, state and national level. I believe that ACTE can carry the message of its 28,000 members to those who are searching for solutions. So, as we ring in 2009, I would like to offer my own resolutions:

- That ACTE will be able to reach the hundreds of thousands of CTE professionals in this country and convince them that together we can journey with the winds at our backs; separately we are always climbing uphill.
- That ACTE will not stop searching for programs and services that provide value to its members.
- That ACTE will cherish and embrace diversity within its membership and leadership.
- That CTE will be recognized for its leadership role in the education system.

Change is inevitable. We can beat our chests about the changes, try to ignore the implications of the changing world around us, or we can create our own destiny by shaping the trends impacting the CTE profession. The ACTE leadership has chosen the path of meeting the challenges head-on. On behalf of the entire ACTE staff, I wish all of you a healthy, happy and rewarding 2009. We look forward to the privilege of continuing to serve you.

"A man grows most tired when standing still." -Chinese Proverb

Janet B. Bray

Janet B. Bray
Executive Director

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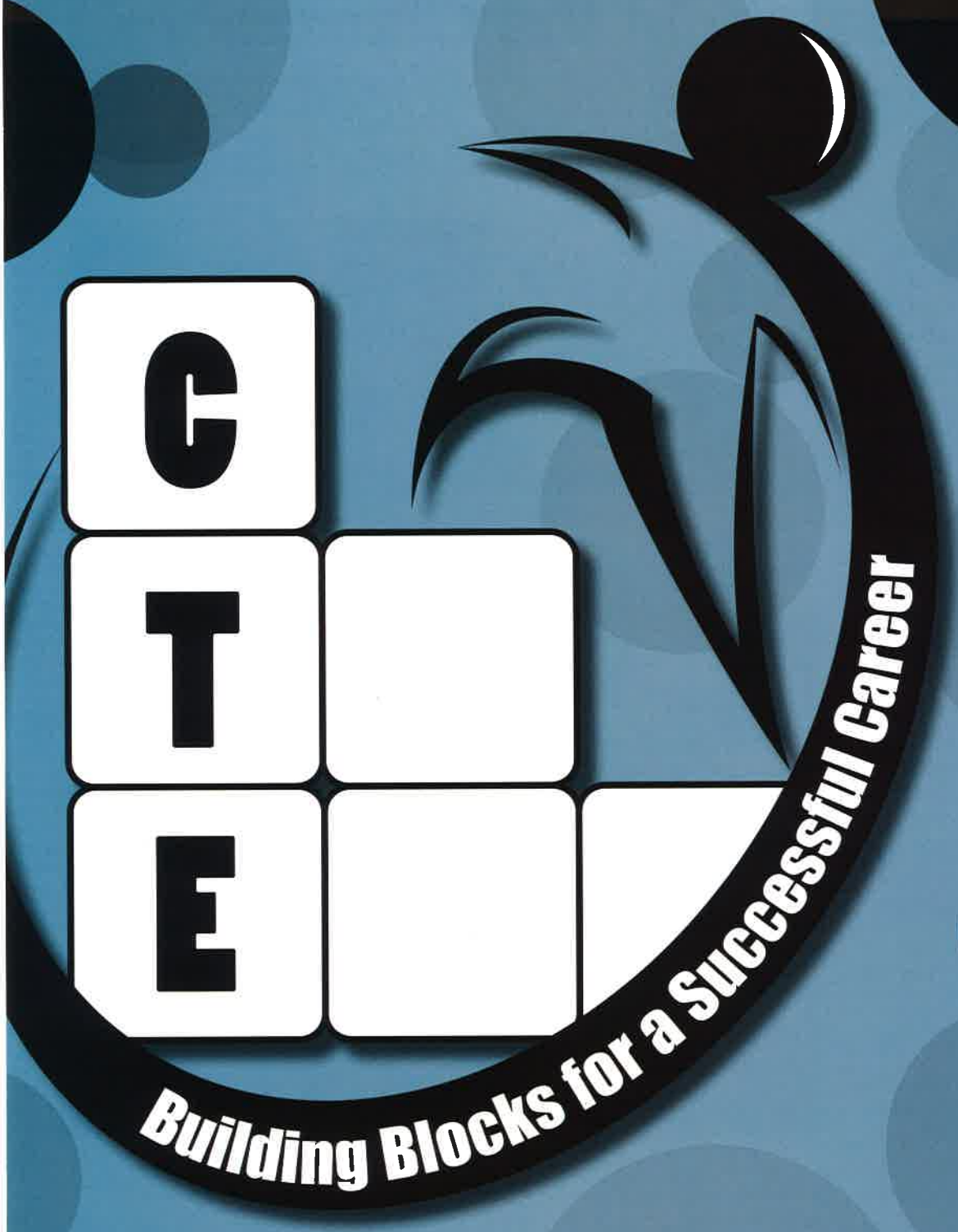

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For more information and tips on how to celebrate CTE Month visit **www.acteonline.org/cte month**.

Teaching **Safety in the Classroom**

By Jonathan Miller

CAREER AND TECHNICAL EDUCATION (CTE) PROFESSIONALS OF ALL STRIPES ARE WELL AWARE OF THE NEED FOR PROPER SAFETY PRECAUTIONS DURING INSTRUCTION. After all, career skills are great, but they can only take someone so far without proper appreciation for the requirements of safe practices in the work environment. For the CTE veteran, safety—in the shop or lab or on the job—is more than just a duty to protect students from harm; it's part of teaching lifelong skills that can literally protect life and limb in all occupations, from the most treacherous to the most mundane.

CTE involves teaching workplace skills, which means bringing the workplace itself into the classroom. It might be a lab, it might be a mechanical shop, it might be an office, but there's no workplace in the world that doesn't require learning forms of personal and professional safety. All children in primary school learn proper procedures, such as fire drills and elementary first aid, for eventual incidents of danger. While a certain level of import is explicit in these lessons, the implicit skills learned have heavy implications for learning parallel skills throughout life—following protocols, maintaining order and helping others. It's by drawing on these lessons and values later in life that CTE students will best react to more complicated safety standards for learning technical skills.

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Practicum

Indeed, while knowing the location of eyewash stations directly corresponds to similar lessons from kindergarten, it's best that students learn correct practices so that they never have to use the stations in the first place. But in the event of accidents, it's important that students know how to limit damage to their materials and themselves, so developing procedures ahead of time and creating safety checklists—that include right action before, during and after any lesson or hands-on session—and seeing that students understand not only the rules therein, but also why those rules are in place, are extremely important to ensure basic standards of safety.

These lessons can prevent accidents, protect equipment and keep students learning the skills necessary for career suc-

cess rather than figuratively, or literally, putting out fires. These lessons also carry with them the additional skills and safety-first mindset all CTE students need as they transition into the workforce. Some skills, such as storage, organization and remediation of hazardous situations, may be the same from class to work. Nonetheless, safe students are only guaranteed to be safe workers if respect for the nature of the work and understanding of necessary procedure are inculcated by their instructors.

Keeping Up-to-Date

CTE teachers bear just as much responsibility for teaching safety skills as career skills, and the surest way to guarantee up-to-date knowledge of any occupation's requirements is for the teachers themselves to stay up on their own professional development. This may seem like a given, but new guidelines and regulations, such as from the Occupational Safety and Health Administration (OSHA), The National Institute for Occupational Safety and Health (NIOSH), and/or state or occupational bodies, are also being introduced while old ones are amended. Fortunately, resources abound. Every CTE teacher, from the most seasoned veteran to the greenhorn, can turn to a wealth of assistance to aid the quest for safe classrooms and safe working habits. T

Jonathan Miller
is ACTE's online editor. He can be contacted at jmiller@acteonline.org.

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

For More Information

- Federal government agencies—such as the Occupational Safety and Health Administration (OSHA), The National Institute for Occupational Safety and Health (NIOSH) and the Centers for Disease Control and Prevention (CDC)—not only set the rules for workplace safety, they also promote their work through myriad public programs. Visit them online for more information.
  www.osha.gov
  www.cdc.gov/niosh/
  NIOSH's Safety Checklist Program for Schools is among the best:
  www.cdc.gov/niosh/docs/2004-101/default.html
- Safety standards that may surpass even OSHA and NIOSH are often approved by occupational bodies, but the best standards are those certified by the International Organization for Standardization.
  www.iso.org/iso/home.htm
- CareerSafe offers programs to teach young workers how to stay safe on the job. Programs exist for students, educators, administrators and employers.
  www.careersafeonline.com
- Besides practical matters, there are rewards for safety. The ACTE/NIOSH School Lab Safety Award is just one way for the best safety-teaching CTE instructors to receive the recognition they deserve.
  www.acteonline.org
- Curious about how to develop good safety practices in class? There's no shortage of resources on the Internet. Although specific needs require their own sets of standards, a few samples include:
  http://dbs.idaho.gov/school/pdf_files/classroom.pdf
  www.ehs.ufl.edu/Lab/checklst.htm
  http://web.princeton.edu/sites/ehs/healthsafetyguide/A9.htm
- The Accident Fund Insurance Company of America has expanded from providing workers' compensation insurance to providing safe workplace materials for young workers through its WorkSafe Students program.
  www.accidentfund.com/worksafe_students/

Management by **Walking Around**

By Susan Reese

IN THE 1970S, WHEN THEIR COMPANY BEGAN GROWING, BILL HEWLETT AND DAVE PACKARD CREATED A MANAGEMENT STYLE that influenced a number of technology companies that followed. The Hewlett-Packard (HP) style included a technique that became known as "management by walking around." According to the history of the company found at the HP Web site, this technique is "marked by personal involvement, good listening skills and the recognition that everyone in an organization wants to do a good job."

Hewlett and Packard ran their company according to the management by objecting principle, which encompassed communicating overall objectives clearly and giving employees the flexibility to work toward those goals in ways that they determine are best for their own areas of responsibility. While educational settings may not always allow for the flexibility found in the corporate culture of a technology company, the technique of management by walking around has certainly found its way into educational institutions.

An article in *Education World*, "Walk-Throughs Are on the Move," notes that many principals see classroom walk-throughs as an extension of the strategy that was developed by Hewlett and Packard and gained further popularity in the book, *In Search of Excellence,* by Tom Peters and Robert Waterman. Authors Carol Downey, Betty Steffy, Fenwick English, Larry Frase and William Poston brought the technique into the classroom in their book, *The Three-Minute Classroom Walk-Through: Changing School Supervisory Practice One Teacher at a Time.*

What is often referred to as the Downey Walk-Through is a short, focused visit to a classroom. Its purpose is to allow the principal to observe firsthand the instruction that is occurring in the classroom, but it is not intended to be a part of the formal teacher evaluation process. It is generally considered a collaborative strategy that encourages teachers to reflect upon their curriculum and instruction in order to continuously improve their practice.

In the article, "Using the Classroom Walk-Through as an Instructional Leadership Strategy," published in its February 2007 newsletter, the Center for Comprehensive School Reform and Improvement (CCSRI) lists some of the essential elements of a walk-through. They include brevity (closer to the Downey method's three minutes rather than the typical 10 minutes), a common focus between principals and teachers, and dialogue between the principal and the teacher. The dialogue should include feedback and often takes the form of reflective questions.

The Principals' Partnership article, "Leadership by Walking Around: Walk-Throughs and Instructional Improvement," suggests sharing the feedback from walk-throughs at faculty meetings, staff development meetings and instructional council meetings, and advises making the walk-through a part of the daily and weekly calendar and incorporating it into your leadership team's routine. It even cites one Florida principal and

his assistants who try to observe every class every day—in a 1,300-student high school. Even the article notes that this may seem like overkill, but according to the principal, their discipline referral rate has dropped to almost zero. One of his assistants adds that because so many things are taken care of in those short visits, meetings that used to take a half an hour now just take a minute.

School leaders who utilize the walk-through technique look for best practices and ways to improve instruction, but they also get an overall perspective of the curricula. In career and technical education, that may provide insight into how the different curricula and subject matters might be aligned, and helps the administrator to ensure that students are being taught to state and industry standards. As one principal noted in the *Education World* story, walk-throughs help administrators understand what the teacher is doing, create a mutual ground for discussing curriculum and student achievement, and keep the administrator in touch with day-to-day classroom activities.

ISTOCK PHOTO

One additional benefit cited in a couple of the articles about walk-throughs: walking is good exercise, and exercise is great for relieving stress. Stress is certainly something that comes with the job of school administrator.

Not every educator agrees with the benefits of the three-minute walk-through, however. Helen Gieske, a physics and chemistry teacher, presents the survey results she did at her school on teachersnetwork.org. Staff members and students told her they did not find the short visits by the curriculum supervisor to be very helpful. The supervisor's presence sometimes felt disruptive, and some teachers did not receive visits at all. At this school, there did seem to be at least one critical element missing from the three-minute walk-through model—feedback. Gieske mentions that, "The visits without feedback left teachers waiting for some response to what they were doing in their classrooms."

Gieske wisely recommends establishing better communication between supervisor and teachers, more effective dialogue in a non-threatening manner and equal attention to teachers in all subject areas—all of which would make the walk-through practice more closely aligned with the Downey method.

On the School Administrators' Chatboard, "an upcoming administrator" says she has asked various administrators about the three-minute walk-through and has been told it is one of the most useful tools they have to evaluate teachers. She says most teachers like it because it is informal, and they are able to receive feedback quickly about what improvements they should make. Also, when providing feedback, she mentions seeing others who are doing similar lessons, which "opens the door for more discussion between teachers." Putting a sign on her door explaining she is out doing walk-throughs is another way she creates the opportunity for discussion, as other teachers ask about what she saw.

As CCSRI notes, the walk-through can be an effective strategy to increase instructional leadership and to support improved teaching and learning in a school, and, "When principals and teachers can talk openly about what matters in the classroom, the possibilities for continuous improvement are increased significantly." T

Susan Reese
is a *Techniques* contributing writer. She can be contacted at susan@printmanagementinc.com.

Further Exploration into Walk-Throughs

To read more about management by walking around and the three-minute walk-through technique, here are some Web sites to explore.

"Leadership by Walking Around: Walk-Throughs and Instructional Improvement"
The Principals' Partnership
www.principalspartnership.com/feature203.html

School Administrators Chatboard
http://administrators.net/chatboard/topic9464/9.23.08.13.51.25.html

"Using the Classroom Walk-Through as an Instructional Leadership Strategy"
Center for Comprehensive School Reform and Improvement
www.centerforcsri.org/files/TheCenter_NL_Feb07.pdf

"Walk-Throughs Are on the Move"
Education World
www.education-world.com/a_admin/admin/admin405.shtml

"Walk-Through Supervision"
Teachersnetwork.org
www.teachersnetwork.org/TNLI/research/growth/gieske.htm

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

Using Technology to Advocate for CTE

By Stephen DeWitt

ADVOCATING IS TRICKY STUFF. SOMETIMES YOU UNDERSTAND AN ISSUE, BUT HAVE LITTLE TIME TO ACTUALLY DO ANYTHING ABOUT IT. Other times you know you should act, but you just don't understand the nuances of the issue or how it affects you at the local level. Today's technology can help address some of these matters by reducing the time it takes to react, and by providing you with information to be a stronger advocate. The Congressional Management Foundation, a non-profit, non-partisan organization "dedicated to promoting a more effective Congress," recently partnered with the polling company Zogby International to conduct research with more than 10,000 citizens on online advocacy. The resulting report, "Communicating with Congress: How the Internet has Changed Citizen engagement," offers some interesting findings:

- The Internet has become the primary source for learning about and communicating with Congress.
- Forty-three percent of Americans who contacted Congress used the Internet as their means of communication, more than twice the percentage that used postal mail or the telephone.
- A majority of people who contacted Congress had been asked to do so by a third party—primarily through interest groups—and they place a high value on the role of advocacy campaigns in our democracy.

The research supports the need for such technologies and underscores the importance of these tools. It's no secret that almost every advocacy organization in Washington uses a vendor that specializes in advocacy software to help organize advocacy Web services. The vendor that ACTE uses is Capitol Advantage and its product provides the framework for our online Action Center. Here, you will find basic information about Congressional representatives, media contacts and sample letters on CTE policy priorities. Most importantly, the Action Center allows you to quickly identify and contact *your* federal representatives.

Part of the Action Center's role is to provide legislative alerts on important issues. All ACTE members should receive these alerts by e-mail, so check your member profile to make sure we have a current e-mail address if you are not receiving them. You can also sign up other interested advocates, such as your business partners, online. ACTE will provide you with the talking points and a sample letter that only needs a few personal aspects added to make it powerful and persuasive. A phone call or an e-mail will be suggested by ACTE. If the issue is extremely urgent, ACTE will institute a "call only" alert that lets you know that phoning your Member of Congress is crucial to making an impact on the particular issue.

ACTE's new Web site includes much of the information you will need to support your work as an advocate. Look for the "Issues and Advocacy" section on the left side of the home page to receive synopses on bills, Congressional activity, regulatory information from federal agencies, successful advocacy and other links to research and media help. Look to ACTE's CTE Policy Watch blog to read about the activities ACTE staff is undertaking to support CTE, but remember that your voice is most critical to influencing your Senators and Representative at the federal level.

In spite of all the technology we have today, the most persuasive and successful form of advocacy is the good old-fashioned personal contact, either by phone, or better yet, in person. Consistent contact with your federal representatives and their staff builds awareness that the issue you are advocating for is important. During this new Congressional season, gather a group of reliable advocates, look for those legislative updates in your inbox, go online to ACTE's Action Center, pick up the phone, and call your Member of Congress to make yourself heard! T

Stephen DeWitt
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Key Web Sites to be a Successful Advocate!

ACTE's Public Policy Web page:
www.acteonline.org/content.aspx?id=226
Get up-to-date information on key policy issues impacting CTE.

ACTE's Action Center
http://capwiz.com/acte/home/
Contact your federal and state policymakers, by just entering your zip code.

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

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National Policy Seminar

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Registration Options

	Advance 2/13/2009	Full after 2/13/09
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ACTE requires a copy of the P.O. to process registrations. Registration forms are required.

Hotel Information
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Arlington, VA 22202

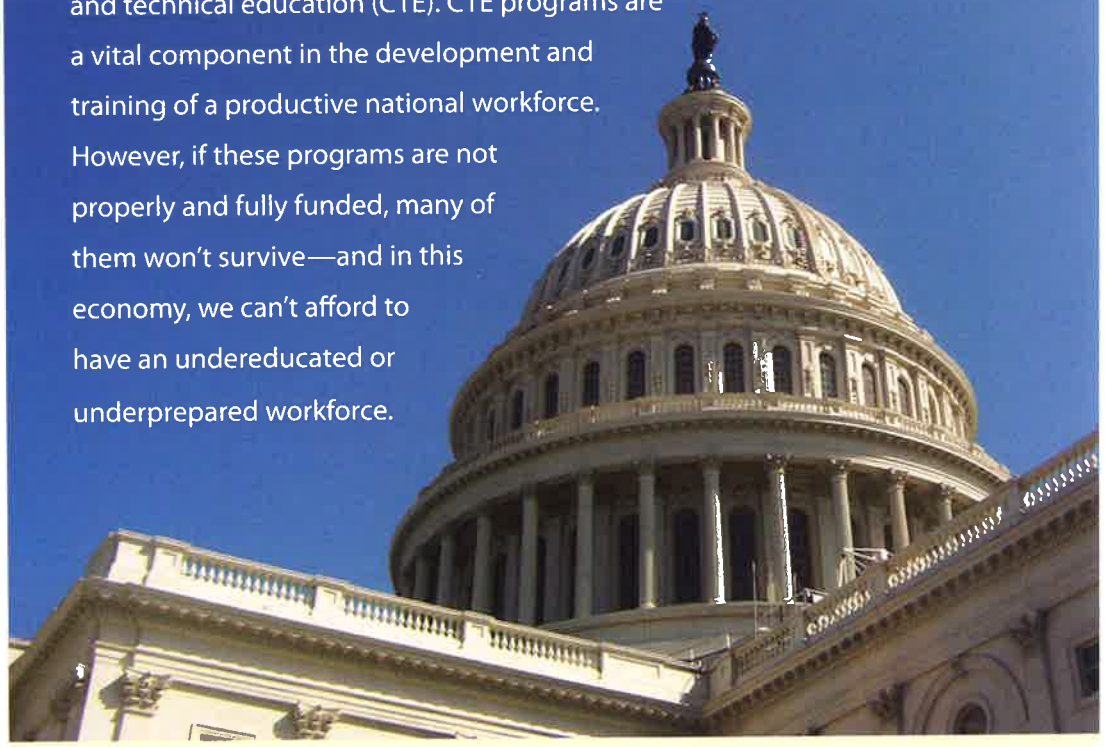
You may reserve a room at the Crystal Gateway Marriott by calling 800-228-9290 or 703-920-3230. Refer to Association for Career and Technical Education 2009, code CTECTEA to receive the ACTE discount.

Rate is $229.00 single/double. You must make your reservation by February 2, 2009, to receive the ACTE conference rate. *All rates are subject to Virginia tax of 10.25% per room, per night.*

ACTE REFUND POLICY: ACTE WILL GRANT REFUNDS, MINUS A $75 PROCESSING FEE FOR ALL CANCELLATIONS RECEIVED PRIOR TO MARCH 1, 2009. NO REFUNDS WILL BE ISSUED AFTER THIS DATE.

March 9-11, 2009 • Washington, D.C.

With a new administration and a new Congress, the time is now for career and technical educators to bring their voices and stories to Washington, D.C., to educate legislators on the importance of career and technical education (CTE). CTE programs are a vital component in the development and training of a productive national workforce. However, if these programs are not properly and fully funded, many of them won't survive—and in this economy, we can't afford to have an undereducated or underprepared workforce.



It's Up To You!

It's up to you as a career and technical educator to learn about the issues being debated on Capitol Hill. It's up to you to bring your program, your teachers, your students to Washington, D.C. It's up to you to educate your legislators—and the Association for Career and Technical Education (ACTE) can help.

The ACTE National Policy Seminar (NPS) is an annual event focused on educating career and technical educators about the national issues affecting CTE. At NPS you will receive up-to-date information and research on those issues and how you can use that information to educate and influence your federal legislators.

With so many new names and faces in Washington, D.C., it is vital that the 2009 NPS be the most attended and well represented policy event for career and technical educators. Learn all about this event at **www.acteonline.org**.

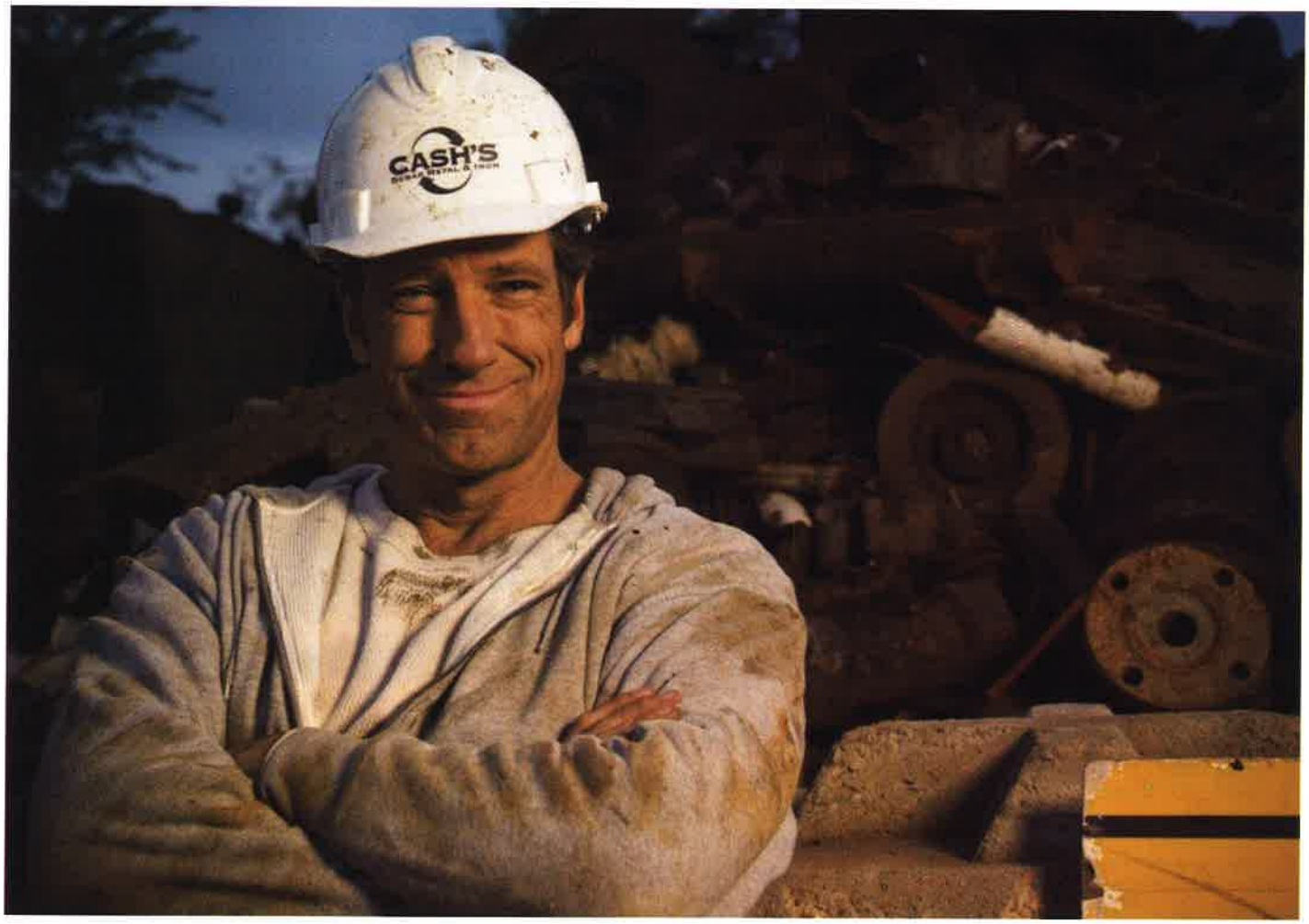
Make your commitment today!

ACTE NATIONAL POLICY SEMINAR

For more information, go to www.acteonline.org.

An Interview with **Mike Rowe**

Mike Rowe, host of the Discovery Channel series "Dirty Jobs," talks with ACTE about his show and celebrating a skilled workforce. Each week, Rowe serves as an apprentice to hardworking men and women who do difficult, dangerous and dirty jobs. His experiences on the show led him to start mikeroweWORKS (MRW)—a campaign to celebrate skilled labor and hard work.



ACTE: **Tell us about mikeroweWORKS and the MRW Foundation.**

MR: mikeroweWORKS is a PR campaign for skilled labor. In terms of a message, it's really a call to arms designed to stimulate conversation and encourage a dialogue around what I believe to be a kind of a dysfunctional relationship with hard work. I think the country has redefined what a good job looks like, and declared a kind of cold war on the traditional notions of skilled labor—at least the way we've always understood them to exist. Consequently, today we have a shortage of skilled tradesmen, along with rising unemployment, which is just a strange combination of facts to try and digest. mikeroweWORKS is an attempt to point out the casualties that come from waging a war on work, namely, a declining interest in the trades and a crumbling national infrastructure. And both of those things, obviously, affect everyone.

ACTE: **And is the MRW Foundation related to that?**

MR: Yeah it is. But to be honest, I just set it up because I had a suspicion it would come in handy at some point in the future. What happened was, not long after I arranged it, I started looking into

some other nonprofits that were out there, and realized that there were many. A big part of what I want to focus on first is just creating a resource of all the organizations and associations that exist on a state-by-state basis for people who want to investigate a career in the trades. Get all of those in one place. And mikerowe-WORKS, I hope, will be the place where that can happen. We've already started, and I'm really encouraged by what I've seen.

ACTE: **Does your collaboration with Ford and now Grainger Industrial Supply fit in with mikerowe-WORKS?**

MR: Well, it might. I can tell you that Grainger had a role in this, whether they knew it or not, about a year ago. I haven't brought it to Ford, specifically, yet, but I'm hopeful that we might be able to work something out. There are so many companies that have a vested interest in being heard on this. And I've been contacted by a lot of them. But since you mentioned Grainger, I can tell you that they've been great. About a year ago, I was giving a talk to their company. This is something I'd been doing for a long time. I'd go around the country and I'd talk to Fortune 500 companies.

After 200 different jobs, you know, on the show, there are a lot of patterns that begin to emerge from people that I worked with and spoke with. And their collective attitude about work got me thinking about the country's attitude and the difference between the two became pretty glaring; so I started giving these talks a couple of years ago about things people with dirty jobs know that the rest of us don't. And I started sharing my experiences from the show, and my belief that we'd wage this war against the Puritan work ethic. The response to those talks was always amazing. So I started to get booked more and more frequently, and last year, I was speaking to the employees at Grainger. Afterwards, the president, a guy named Jim Ryan, approached me about his concern that the very trades that his company served were starting to diminish. And he expressed a desire to take a leadership position in reinvigorating the trades, but he wasn't sure how to do it without seeming self-serving. And that's really how the idea first occurred to me.

ACTE: **So do you imagine it benefiting students, as well as people who are currently in the workforce, or who may be adults who are looking to retune their skills to a new field? Maybe all those groups?**

MR: There's still this belief in the country that I see all the time, that the only real recipe to success involves some kind of college degree. And I'm the last guy in the world you'll ever meet who's going to disparage a college degree. I think it's great; but I also think that training and education ought to go hand-in-hand, and they're not. There are way too many people in college, that I've seen, that are going way into debt and winding up with degrees that they're really not passionate about. And they're starting these careers that they're really not fully engaged in, and I just don't know if we need any more venture capitalists and MBAs.

I'm not sure of that, but I'm positive that there are fewer welders this year than there were last year, and a whole lot fewer than there were five years ago. That means there's an opportunity for people. They just need a place where a welder is shown to be a successful, intelligent, articulate person, who's really good at what he or she does.

ACTE: **Could the recent economic downturn be an opportunity for promoting skilled labor, sort of, "stockbrokers are out; Joe the plumber is in?"**

MR: Sure.

ACTE: **You could definitely follow up with that.**

MR: Well, yeah. In an election year, it's amazing how the candidates will scramble to try and associate themselves with the middle class, the working class, whatever it is they call it. And it's been a real challenge this year because...well, every year, the definition changes a little bit. You know, when you see Hillary Clinton doing shots of rye in a bar in Pennsylvania with a bunch of steel workers, it's kind of funny. These guys see right through that, but that's how eager the candidates are to align themselves with these issues.

I don't know if you saw the cover of *TIME* magazine recently with both McCain and Obama on it portrayed as construction workers. They're dressed in steel-toed boots, and had the hard hats and they're smiling, and they're ready to go to work. But, again, it's like, "Where do you really stand on the trades? Where do you really stand on the infrastructure?" You know, the business with Joe the plumber is just another great example.

My best friend from high school is actually a plumber. His name's not Joe, it's Jeff. He's a shining example of what these guys were trying to articulate, I think, through Joe. Jeff makes a very comfortable living, six figures or so a year; has four kids; has enough time to coach the softball team. He's active in his community. And he's got this great, balanced life. He's just a regular guy, but if your toilet's backed up, he's a superhero. People love him, and he loves his life and his career. T

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

To listen to the podcast of the full interview with Mike Rowe, host of the Discovery Channel series "Dirty Jobs," visit **www.acteonline.org/content.aspx?id=1254.**

Creating a Successful Academic Climate for Urban Students

BY TERRI SLAUGHTER

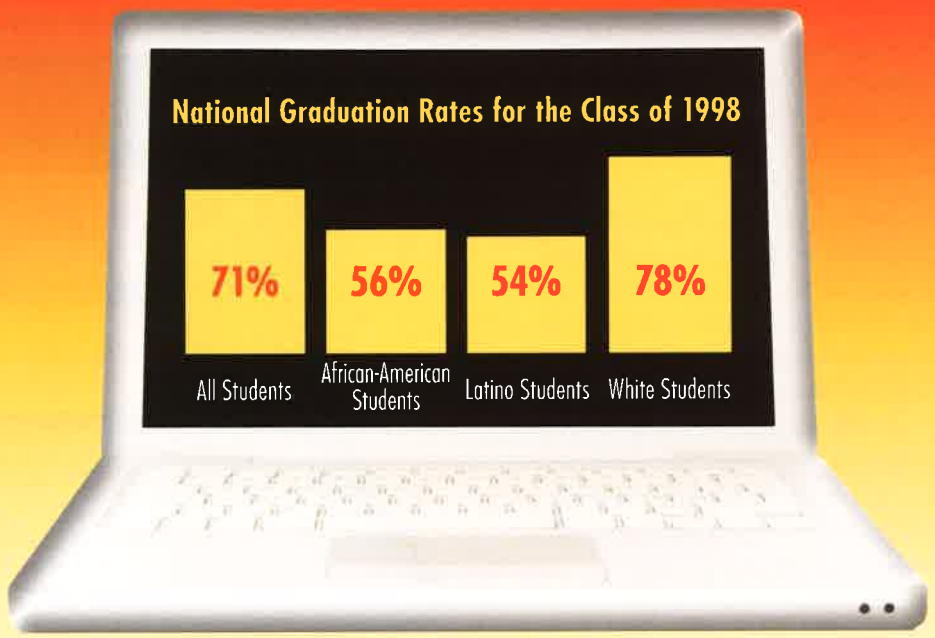
Teaching students in the inner city has been likened to hugging a porcupine—teachers nudge them toward success while getting pricked along the way. Many urban students perform below proficiency level and are difficult to manage. Their apathy toward completing class assignments, let alone homework, compounds the problem. As a whole, educators do their best to reverse the tide, despite the student's resistance. Statistics confirm that children who live in poverty are more likely to drop out and for many students who lack even one supportive, motivated role model at home, life gets in the way of following through with educational goals and plans.

Even with those statistics in mind, when urban teachers observe the yearly trend of students who fail to return to school after an unsuccessful freshman year, the question begs, "What else could our school have offered to encourage them to finish their education?" As part of the noblest profession in the world, we as educators must take the time to assess how technological innovations might assist us in delivering relevant instruction in our 21st century classrooms.

Need for a Change

John Dewey, philosopher and educator, was viewed as the father of progressive education. Even today, more than 50 years after his death, we can learn from his educational philosophies. Dewey advocated a "new movement in education" to fulfill the needs of the industrial revolution. Today, we have all but completely moved from that industrial society into the era of technology. However, many educators are still tied to the educational mode of a time passed. Our world today has become the electronic world. Cell phones, instant messaging, texting, chat rooms and wikis are the predominant means used today by our youth to communicate and disseminate information. Is it any wonder, then, that our students have become

bored, restless and discontent in our four-walled classrooms? As Venezsky notes in his book *Technology in the Classroom*, "a new level of teaching and learning must be advanced to a new level of effectiveness and social importance in order to keep our students engaged" and attracted to the idea of lifelong learning.



Urban Graduation Rate Crisis

The United States has little to take comfort in when viewing its graduation rates; they have dropped to an all-time low when compared globally. According to a May 2008 article in *The Economist's View*, the United States ranks 17th among nations reporting high school graduation rates; in China, virtually all high school students graduate. Of even greater concern today is the United States urban graduation rates. We are well acquainted with the fact that our nation's high school graduation rate hovers between 68 and 71 percent in this country. However, these figures are highly inflated for many of our large cities. Statistics show that districts where most students are members of racial or ethnic minorities have graduation rates almost 20 percentage points lower than districts with a white majority (*Education Week*). Sadly, the odds of graduating from high school in 50 of America's largest urban cities amounts, essentially, to a coin toss. The public, and even many educators, remains largely unaware of this national crisis. The data suggest that as educators, we must rethink how to empower and engage students in order to keep them as active participants in our country's future.

Shenzhen, China

Half a world away Shenzhen, China, is the second busiest port in mainland China. Looking back a mere 30 years, this city was a small fishing village with dirt roads and rice paddies. Now in 2008, it is a metropolis with a landscape of skyscrapers, luxury apartments and shopping malls. This modern city sends out barges loaded with shipping pods at an astounding rate of one pod per second—seven days a week, 365 days per year—with half of the exports headed to the United States (Wikipedia). What do these shipping containers hold? In part, iPhones, iPods, Apple notebooks and personal computing components from manufacturers with names such as Dell, Sony, Compaq, HP, Apple, NEC, Gateway and Toshiba. With the trend of overseas manufacturing, it is hard to deny that America has transitioned from being the world's largest manufacturing country to being heralded in 2008 as its largest consumer. As a result of this shift, our nation's middle class jobs have been reduced.

Obsolescence: Chalkboards and Slide Rules

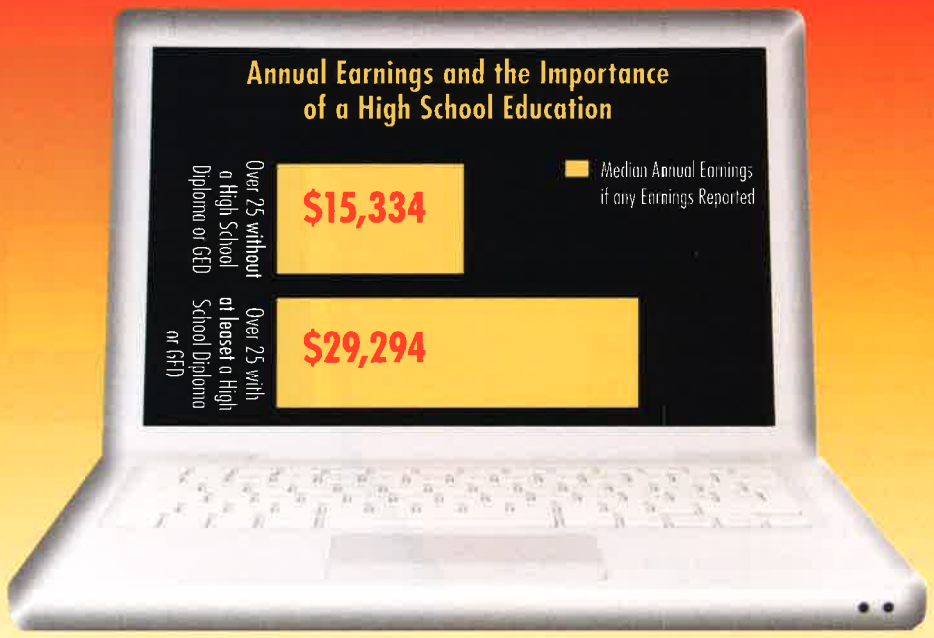
American labor and service industry trades, commonly referred to as blue-collar or skilled labor, are increasingly being outsourced to overseas companies. However, many of the remaining jobs have evolved from manual labor to computer-based systems. In order to compete, managers and supervisors must have extensive knowledge of business, science and heightened technological abilities. If we are not solidifying these skills with our students and requiring them to think creatively, systematically and methodically, our students' futures will be limited to menial labor positions.

Ohio, Michigan and many other pockets of the Midwest have lost their industrial and manufacturing jobs. Steel mills along the Ohio River have disappeared and the manufacturing of these products is being sent overseas. Similar to the story of the tortoise and the hare, the Midwest is steadily and quietly losing its production trades—the jobs in years past which were the foundation of our workforce and economy. In order to keep pace with counterparts in other countries, it is imperative that we add relevance to our children's lives and provide them with a solid technological foundation.

The Influence of Their Surroundings

Looking back at respondents of a March 2006 report by Civic Enterprises for the Bill & Melinda Gates Foundation, it was noted that nearly half (47 percent) of U.S. students who dropped out said that classes

were not interesting. Translation: the connection between real-world relevance and the curriculum had not been made. This has left a chasm of frustration for the student that grows with each passing year. Middle and high school teachers have long observed that a large percentage of students in urban districts become disengaged at the start of the middle grades. When this occurs, research shows that it greatly reduces the odds that they will eventually graduate. Our challenge then, is to create an atmosphere where students can feel successful and enjoy learning. Thankfully, there are many innovations to assist the effective teacher.



Accessible Technology

Creative classrooms take advantage of the many emerging technologies available such as White Boards (SmartBoard), EduBlogs, computer-assisted instruction (CAI) and online products such as Blackboard and WebCT to promote collaboration across content areas within a school or district.

Wikispaces, as well, provide an interactive learning experience for the user. As one member confirms, "Using a wikispace is an amazing tool that encourages the free exchange of ideas and emphasizes high level, clear communication and critical thinking." Such active learning tools are being used in the technology classroom of Gary Thomas, at the Africentric High School in Columbus City Schools. Students use Blackboard to pen journal entry blogs for their weekly writing assignment. Use of this media is a highly effective means of engaging students with thought-provoking, relevant questions.

Each Monday, in order to jumpstart students' thought processes, educator Baba Thomas reads a reflection from Sean Covey's book, *The 7 Habits of Highly Effective Teens,* to stimulate his students' thinking. Students are then asked to respond to a given scenario in a concise, grammatically correct paragraph, using the guidelines from the book. For example, in chapter one, students are encouraged to "Be Proactive, Not Reactive" and understand that although they can't control everything that happens to them, they do have control over how they respond to it. Then, based on that premise, the writing prompt is crafted as follows:

You overhear your best friend badmouthing you in front of a group. He or she does not know you overheard the conversation. Just five minutes ago, this friend was sweet-talking you to your face. You feel hurt and betrayed. What will be your proactive responses? (Describe your responses and explain each).

By having students summarize and reflect upon what they have been taught and discussed, they are challenged to reflect and use higher level thinking processes.

What's Out There?

Effective, interactive instruction has been discovered to include three key components: how learners are connected to the content of the course, the instructor, and each other. By using PowerPoint-based games you can incorporate all three. Free Web sites abound such as games created for the classroom by Mark E. Damond (**http://jc-schools.net/TUTORIALS/PPT-GAMES/**). Through these downloads, teachers can quickly transform games such as "Jeopardy," "Who Wants to be a Millionaire," and "Are You Smarter than a Fifth-grader?" into interactive learning tools for their classrooms. Many of these game boards are wonderful to use when you have an unexpected day away from school. You can catalog them in your sub plans so that the students stay on track even in the event of your absence from the classroom.

Another aid is the use of a colorful digital clock which is especially useful for any timed activity (**http://people.uncw.edu/ertzbergerj/ppt_games.html**). Jay Ertzberg at the Watson School of Education at the University of North Carolina, Wilmington, has developed this PowerPoint aid along with a variety of educational templates. At his site, all the work is done for you—simply enter your information and use immediately. Permission to use these models in educational settings is given—and best of all, downloads are free!

Additional Web sites such as

The Global Schoolhouse (**www.globalschoolnet.org**) provides online project-based learning activities as does another developed by the University of Vermont, (**www.uvm.edu/~jmorris/Sci.html**) which contains links to many science programs. There are virtual field-trips and experiences, science museums, lesson and unit plans, science information and ideas, and videos. Not all of the sites there are free, but there are a variety of programs described. This site is a good place to start probing, analyzing and investigating ideas to incorporate a wealth of resources into your curriculum.

Technology and science teachers alike can't miss the Web site of FIRST (**www.usfirst.org**). FIRST is an acronym: "For Inspiration and Recognition of Science and Technology." This organization sponsors a national robotics contest for elementary, middle and high school students. The largely unknown organization allows students to discover the excitement and rewards of science, technology and engineering. For urban educators, there isn't a better, cost-free opportunity to offer your students hands-on experience in a national robotics competition. Registration is open to schools and youth organizations from September through December with the building and competition process lasting from January through March of each year. NASA generously supplies every competing school with $6,000 to cover the fees and robotics kit. Area technology and engineering partners supply the mentors and additional funding for meals, hotels and spending monies for the students to travel to the competitions. For central Ohio schools, Battelle Memorial, Honda and the National Society of Black Engineers are major sponsors for individual schools. Additionally, mentor teachers can be provided a stipend for their time. These amazing events not only build self-confidence among the students, but encourage collaboration among them, and provide mentoring opportunities with engineering professionals.

Of course, there is no greater way to enhance students learning than when educators work together. As professionals collaborate by using technological resources, teachers can greatly solidify their students' knowledge by using interactivity to accelerate the learning process. The possibilities are, pardon the pun, virtually endless! Experience-based learning can offer greater academic diversity for urban students as well as offer a connection into complex world issues, ideas and concepts.

The use of technology forms the bridge into real-world relevance and creates a more authentic learning experience for students. Innovative teachers can enhance student learning processes and even thwart the would-be dropout by employing effective delivery of instruction. Teachers who are willing to go the extra mile to personalize the education of students and provide a rigorous and engaging curriculum are rewarded by greater student connection and gains.

Empowered for Success

Students need to partner with us to be creators of content. They should not simply take in all that we, as teachers, dish out. As they pull together pieces of information that relate to the tasks at hand—be that reading a novel, analyzing a math problem, or seeing the cause and effect of the conflict in Iraq—a connection is made that creates authentic learning and increases the relevance of each lesson. Teachers must strive to incorporate technology and 21st century skills into the curriculum of the urban student. By doing so, students will become more knowledgeable, and, in turn, more comfortable in embracing the skills needed to compete in an ever-changing global community. T

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The use of technology forms the bridge into
real-world relevance
and creates a more authentic learning experience for students.

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What You Need to Know About Web 2.0

BY CATHERINE IMPERATORE

Web 2.0 is a term that is heard in the media, in the boardroom and increasingly in schools. But what is it, and is it more than a buzzword? Also known as the read/write or participatory Web, Web 2.0 includes such tools as blogs, podcasts, forums, wikis and social networks. It gives users the ability to take in information and create, organize and connect with others interested in the same topics. Web 2.0 is revolutionizing education because students and educators can easily and cost-effectively receive and create information and interact with each other.

In its first chapter, the Web featured one-way communication of information, from company, expert or media outlet to user. In Web 2.0, people can take control of information, rating and responding to what they like and don't like and sharing their favorite resources through social bookmarking services such as del.icio.us and Digg. Internet users can communicate with each other on forums and discussion boards, general social networks such as MySpace and Facebook, and smaller social networks that bring together those interested in a particular topic. People can easily create information by sharing their thoughts, experiences and expertise on blogs (online journals on which others can comment), wikis (easy-to-edit Web sites that users can modify or add to) and podcasts (radio shows broadcast on the Internet). The ability to create and organize information in addition to passively receiving it is why Web 2.0 is sometimes called the read/write or participatory Web. Increasingly, many of these activities can be carried out on a mobile phone, releasing Internet users from their desks.

RSS

Web 2.0 allows users to pull to themselves only the information that interests them instead of receiving what is pushed out by media outlets and other traditional content producers. This is useful as the amount of information grows exponentially owing to the relative ease and low cost of creating online resources. The tool that enables this pulling of information is called RSS. Sometimes translated as Really Simple Syndication, Wikipedia describes RSS as "a family of Web feed formats used to publish frequently updated content." First, the user subscribes to a Web site, blog, podcast or other online resource that interests them. When that resource is updated, the new content appears in the user's RSS feed reader or aggregator. With search engines such as Google, the user can also search for a topic of interest and subscribe to that search. When new content is published on that topic, the user receives it in his or her aggregator. The RSS aggregator, which is usually free, can be a program you download to your computer or a Web-based application that you sign into with a username and password. Common aggregators include Google Reader, Bloglines, Netvibes and Rojo while a major aggregator specifically for podcasts is iTunes.

Applications for Education Professionals

Educators, administrators and guidance counselors are turning to Web 2.0 to learn more about these educational technology tools and to quickly and easily share resources with colleagues. By subscribing to education blogs, Web sites, wikis and podcasts through RSS, education professionals can keep on top of the daily flow of information. And they can become more active online participants by creating their own blogs, wikis and podcasts; joining education social networks; and sharing information on education forums and discussion boards. "It's become more important than ever for teachers to actually practice lifelong learning. And one way of doing that is to stay connected to the community of practitioners, of experts, in order to get the latest information, the latest techniques," notes David Warlick, a 30-year educator and an author, consultant and public speaker on 21st century teaching and learning. (ACTE recently spoke with Warlick during a Career Tech Talk podcast. You can listen to it at **http://careertechtalk.podbean.com**.)

Applications in the classroom

Web 2.0 is useful in the classroom because it is an easy and inexpensive way for students to learn, create and share with each other and their teachers; Web 2.0 tools can create conversations. For instance, an educator can post an assignment, a piece of writing or a scenario on a classroom blog and students can respond in the comments section. Students can also post their own writings, images, and audio and video clips on a classroom blog for evaluation by fellow students, becoming more involved with and excited about assignments because they are submitting

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blog: **Blog:** (bläg) n. Online journals on which others can comment.

podcast: **Podcast:** (päd-kast) n. Radio shows that broadcast on the Internet.

RSS: **RSS:** abbr. Updates that appear in a subscriber's application or aggregator.

wiki: **Wiki:** (wi-kē) n. Easy-to-edit Web sites that users can modify or add to.

them for the eyes of the entire class, not just the teacher.

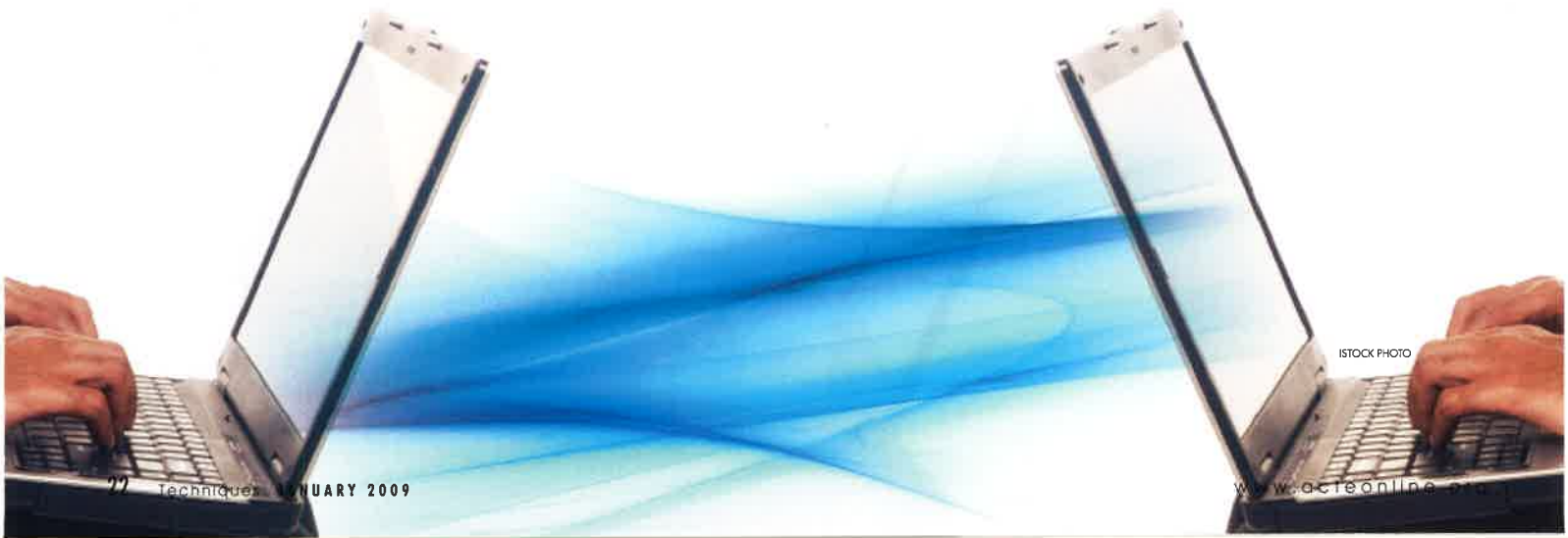
Blogs are not the only online services suitable for use in the classroom. Warlick gives the example of a computer science class that collaborates to write the course textbook on a wiki. By creating podcasts in place of writing reports, students can share with each other and their teachers and learn audio recording techniques and presentation skills. A common postsecondary application of Web 2.0 tools is when professors record and podcast their lectures so that students can access the information at any time. Also, virtual worlds built for children to learn through science and math games, and career exploration, can have an increasing presence in the classroom. Even social networks, often the pariah of education technology, can offer a place for classroom conversation, especially if the community is restricted to educators and students.

Digital Literacy and Safety

The Internet is more than a tool that educators can use to engage students—students must learn to use the Web wisely for their own safety and success. Doug Johnson in a 2005 article for *EdTech* magazine notes that students are going to seek out or stumble upon inappropriate Web sites; educators should use these opportunities to guide and instruct. He recommends resisting the urge to overreact, "Technology-use behaviors should be treated no differently than other behaviors—good or bad—and the consequences of student behaviors should be the same." Students must also be taught how to evaluate Internet information sources; this digital literacy is important as lifelong learning increasingly occurs on the Internet.

Accessing Online Resources at School

What can you do when a Web site, blog, wiki or podcast you want to access is blocked on your school's computers? According to the FCC, the Children's Internet Protection Act (CIPA) requires that schools and libraries receiving funding support from the E-Rate program for Internet access or internal connections verify that they have Internet safety policies and technology protection measures, including the blocking of sites that are defined as obscene, child pornography or harmful to minors. In an effort to protect students, however, some schools and districts prevent access to online resources that could have value to students and education professionals. CIPA does allow Web sites to be unblocked by authorized individuals for legitimate reasons, so determine if your school or district IT department or IT oversight committee has a review process for unblocking online resources. For instance, the school district Web site for South Burlington, Vermont, includes a review process in which the staff member making the request e-mails the technology committee with the Web site address and



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"It's become more important than ever for teachers to actually practice lifelong learning. And one way of doing that is to stay connected to the community of practitioners, of experts, in order to get the latest information, the latest techniques," notes David Warlick.

a brief explanation of why the site should be unblocked. Within a few hours, the staff member will be notified whether the request has been temporarily approved or rejected; a review committee will then determine if the site will be permanently unblocked. Remember, you won't know if a Web site can be unblocked until you ask. T

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Online Resources for Education Professionals:

www.classroom20.com—a social network for educators interested in Web 2.0 in education.

http://davidwarlick.com/2cents—David Warlick's education technology blog.

Online Resources for the Classroom:

www.ePals.com—a community of classrooms, this service also offers safe e-mail and blogging.

www.wikispaces.com/site/for/teachers100K—a wiki service currently offering free wikis to K-12 educators.

Can Web 2.0 Improve Our Collaboration?

ISTOCK PHOTOS

BY EMILY B. RHOADES, CURTIS R. FRIEDEL AND A. CHRISTIAN MORGAN

The overhead projector was invented in 1944, but it was not until the 1960s that it became a mainstay in classrooms across the country. Some of the most senior members of our profession who are reading this article may remember attending a workshop on how to better use transparencies to improve classroom learning. Once again, we find ourselves faced with a new classroom technology. Clearly, the latest technologies are more advanced than the old overhead projector and transparencies. Today's faculty members (elementary through college) are using podcasts, wikis, chat rooms, online curricula and virtual realities to help students become successful in the classroom.

Technology has helped to improve student learning by making the curriculum interactive and engaging. However, has technology affected our research in the same way? That is, has technology enabled us to better collaborate through data sharing and dissemination of our findings? As the importance of assessment and accountability of student learning becomes more pervasive in education, we should be proactive in examining ways to improve our research given the latest developments in technology.

What is collaboration? What is this new Web 2.0 technology? Can it be used to foster such research collaboration in career and technical education (CTE)? Can it be utilized to achieve our research agenda? In this article, we will provide a framework of collaboration using Web

Collaboration is "the process of shared creation: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own. Collaboration can occur by mail, over the phone lines, and in person. But

the true medium of collaboration is other people."

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2.0, and present some possible examples of its application. We hope that this article will start a discussion to answer the previous questions.

What is Collaboration?

Collaboration is not only a current buzzword in science research but in academia as well. However, this new emphasis in academic circles may have permitted educators to focus on it as a product instead of a process. Schrage (1990) defined collaboration as "the process of shared creation: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own" (p. 40). Schrage further writes, "Collaboration can occur by mail, over the phone lines, and in person. But the true medium of collaboration is other people" (p. 41). From this definition, we can be sure that we have been collaborating, but can we increase the degree of our collaboration to further our knowledge in our field?

Theory with respect to collaboration can be traced back to Vygotsky, who viewed learning as a social process in which a teacher guides a student through learning activities that may only be achieved by the student with the help of the teacher (Montiel-Overall, 2005). It is in this case that knowledge is co-constructed. The onset of mass collaboration through utilization of the Internet has given researchers an opportunity to re-examine collaboration theory for the purpose of helping practitioners understand the process.

Ghazawneh (2008) examined theories revolving around mass collaboration and suggests a process to foster mass collaboration. The process includes the following modules: pre-adoption—identification and planning; adoption—marketing the product to stakeholders; and post-adoption—maintenance and evaluation of performance. During pre-adoption, the group approves of a project based on the needs of the organization, goals to achieve, and limitations on the ability of mass communication to achieve the organization's goals. Next, planning is used to determine the process for achieving the organization's goal. During planning, the organization should focus its concern on four aspects critical to the success of collaborating: type of technology to use; the vendor that can provide this technology; the group dynamics of the team; and the structure (or format) to how individuals will work together, as well as the openness and sharing that will occur during collaboration. Ghazawneh argues that it is best to find successful collaboration projects to serve as a model. Once the collaboration is implemented, it can be marketed to stakeholders. However, the work is not done; Ghazawneh suggests that the collaborators, the network and the newly created knowledge all need to maintain quality.

Collaboration and Technology

What is Web 2.0 technology? According to Wikipedia (an informally peer reviewed source of information), Web 2.0 is "a living term describing changing trends in the use of World Wide Web technology and Web design that aims to enhance creativity, information sharing, collaboration and functionality of the Web" (Web 2.0, n.d.). A key characteristic of Web 2.0 technology is the ability of the end user to edit or create information provided by another user. These second generation Internet technologies have opened new doors for educators, researchers and scientists to share information, ideas and even data to further our understanding of specific topics. The use of open access Web sites, blogs, podcasts and virtual realities can offer new opportunities to further CTE more than at any other time in our history.

However, with the excitement surrounding these new technologies it is important to note there are just as many barriers to its use. Who owns the information if it is open access? Will tenure committees count information that is openly peer reviewed? It takes time to learn new technology, do educators have time to add this to their plate? No matter what the inhibitors are to adopting new collaboration tools, it is important that we start exploring it. Old tools like e-mail and face-to-face collaboration do not allow ideas to be fully shared and explored by multiple people. In Figure 1, we demonstrate how traditional e-mail collaboration on a document works versus such collaboration using new Web 2.0 technologies. Wiki collaboration is much more efficient and allows for more idea sharing.

Tapscott & Williams (2006) discussed in their popular book *Wikinomics* about the idea of "peering" in which individuals use these new Web 2.0 opportunities to create new information-based products. One example of peering is the phenomenon of open source software technology. Many of you may be familiar with some open source software available: Firefox (Web browser), OpenOffice (word processing, spreadsheets, etc.), Linux (operating system), and Apache (Web server). These are just a few of the open source applications available free of charge for anyone to use. In open source software all of the programming code is available to users who are encouraged to modify and improve the programs. The only rules are that users must make available their improvements to everyone else so all may benefit from the improvements, and that no one can sell the program, *i.e.*, capitalistic entrepreneurs are not allowed. These rules were established so that everyone using the software can benefit from the input of the thousands of people who are tinkering with and improving the program (Friedman, 2005).

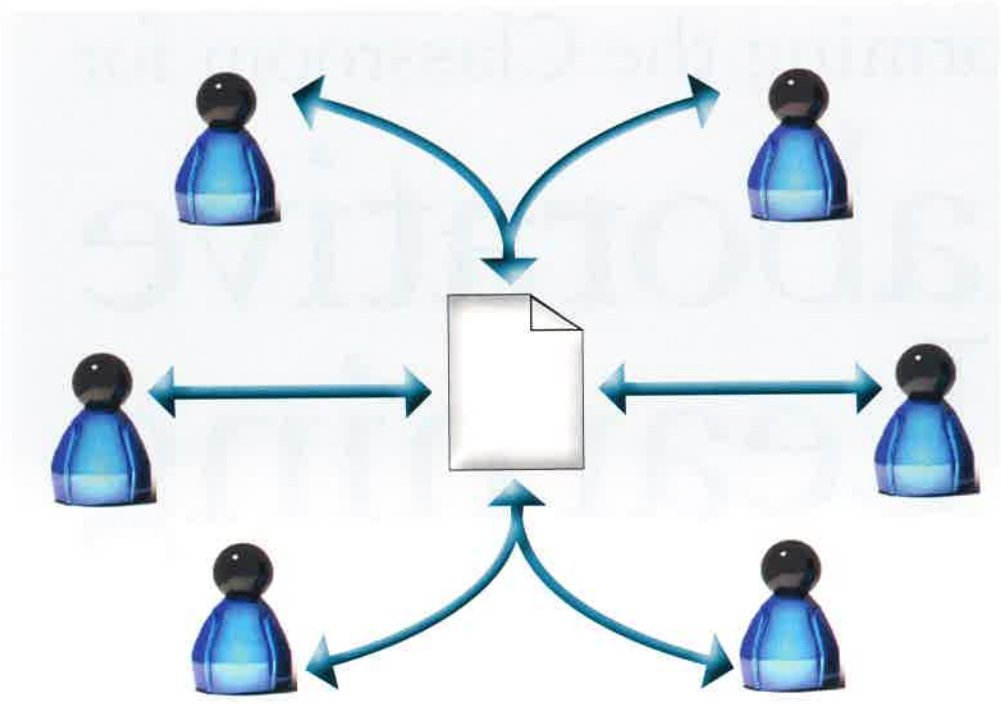
While several software companies have adopted this form of "peering,"

Figure 1. e-mail versus wiki collaboration

several scientists are also collaborating in this new way to further scientific discoveries in a quick manner. With all peer reviewed research there is lag time from when the data is analyzed until it is finally printed in a journal and shared with the world. However, several open source journals, such as the *Journal of Biomedical Discovery and Collaboration* (**www.j-biomed-discovery.com/**), have moved to a format which still keeps intact the traditional peer review process, but allows researchers to share their findings quickly with mass audiences who can use it. Other organizations like ResearchGate (**www.researchgate.net/**) are setting up open access sites where researchers can collaborate and share data. In a recent initiative, they encouraged research on Amyotrophic Lateral Sclerosis (ALS, or Lou Gehrig's disease) to be posted to offer an ongoing ALS conference online, aimed at speeding up the discovery of new treatments and a possible cure. With such collaboration, the opportunities for new discoveries are endless.

Current and Future Collaboration Ideas for Utilizing Web 2.0 Technologies

To be certain, we do currently collaborate in the education profession. Workshops, seminars, and many types of formal and informal professional development allow educators the opportunity to network, share ideas and collaborate with one another. Through these formal and informal interactions we share and borrow ideas, improve our lessons, develop experiential learning activities, and advance the learning experience for our students. However, as stated above, Web 2.0 technologies are another outlet being utilized by many of us to improve our teaching in an efficient and collaborative way. For example, ACTE developed a Communities of Practice Web site that allowed members to share information with each other in



Wiki Collaboration

any of 12 different communities. eXtension (**www.extension.org/**) is another example of how agricultural educators have been collaborating. This site was established to allow experts around the country to share and develop resources for adult education. Still, can we do more to further our research and our knowledge of successful teaching practices?

Could similar communities be developed that allow for collaboration in other areas as well? Can teachers post their best ideas for instruction (*i.e.*, lessons, activities, games) to a Web 2.0 site and share their best practices with other teachers? Likewise, can researchers collaborate with classroom practitioners in a similar manner? Can classroom teachers download questionnaires, administer them to their students, and then post the results on a Web site for researchers to analyze? Is there a way to reward teachers who participate in this?

The implementation of these ideas requires us to think differently about our current collaboration systems. For example, if someone contributes to a wiki article, which is later edited in a way that the original work is no longer recognizable, does the original author get credit? For educators in higher education how can they count this work toward tenure if it is changed? Should we be developing our own online social networks that keep conversations going after conferences and workshops? Will such networks allow for more collaboration and sharing among new and established teachers, among new teachers and higher education programs, and among researchers in our field? How can we share our knowledge and research successfully with a larger audience?

As technology continues to improve, we will continue to be challenged to think about how we educate and how we research. How can we share more, do it more efficiently, and still get credit for the work we do? With all good collaboration, the discussion must start somewhere and continue with input of others. We ask that you join us in this conversation in shaping our future through a collaborative wiki at: **http://actecollaboration.pbwiki.com.**

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Transforming the Classroom for Collaborative Learning in the 21st Century

BY AMY CHRISTEN

Today's hyper-connected students live in a world of instant interpersonal communications and virtually infinite access to information and educational resources. But this networked world, and the powerful learning tools it offers, has yet to penetrate the typical classroom. In many ways educational institutions are spinning their curricular wheels, falling behind the evolving needs of students, communities and future employers. In general, schools are not taking full advantage of the 21st century learning technologies, and they are failing to reach out to the public- and private-sector organizations that can provide them with support and fresh approaches.

What we need now is an educational transformation that aligns the "how" and "what" of learning with the learners themselves and the world of work that awaits them after they leave school. That means:

- Instruction must be synchronized more closely with the ways students live and interact outside the classroom.
- Curricula must address the soft skills required in today's global, information-driven workforce.
- Technology and pedagogy must be better integrated.
- Educational institutions must look for partners that can add to their pedagogical strengths and help shore up their weaknesses.

Networking in all its forms is key to bringing about this necessary transformation in learning.

Closer Rapport with Today's Students

Today's students live in a highly connected, interactive environment that they typically leave behind when they enter the classroom. Sitting quietly and passively while taking lecture notes does not come naturally to a student population accustomed to a virtual world of instant messaging, pervasive Internet access and online social networking. If these connected students are to excel in education, their learning environment should mirror the ways in which they engage the world.

The connected-student phenomenon is not restricted to the developed world. According to a report by the environmental research group World Resources Institute published in 2007, as family income grows in developing countries, spending on information and communications technology (ICT) increases faster than spending on anything else—including health and housing. Wireless Intelligence estimates that 80 percent of the world's population lives within range of a cellular network, and the International Telecommunications Union has determined that most of the world's cellular users in fact live in developing countries.

Greater Emphasis on Relevant Skills

We need to broaden the scope and reach for our curricula to adequately prepare our youth for work in the global economy. On the one hand, students complain that their studies do not give them the pragmatic, job-specific skills they need to succeed outside the classroom. On the other hand, vocational and professional schools are often criticized for focusing too much on procedures and too little on the concepts and strategic thinking that will enable students to grow in their professions and adapt to future organizational and technical change.

Technology has the power to make the instructor a better facilitator or coach, bringing greater resources to bear in the classroom and adjusting the instruction to fit the individual.

Furthermore, much of today's career and technical education (CTE) training is still aimed at equipping students for work in a traditional industrial/manufacturing economy, rather than the new information/knowledge-worker economy. And soft skills such as collaboration, customer satisfaction, and cross-functional leadership that are important attributes of many 21st century jobs often do not find a place in the fact-based pedagogical approaches that still dominate many classrooms.

Traditional education is divided into segments such as K–12, college, university, adult education and trade school. Such segmentation has increasingly less relevance for modern students who are not well served by age-bracketed classes, instructional tracks, or subject majors. A 15 year old may be entirely capable of college- or CTE-level work in a field for which she has an aptitude, while an older person may want to study an unfamiliar subject as part of a career change or just for pure enjoyment. Curricula must be adaptable enough to present theoretical material for those who can handle it, whatever their age, and also deliver basic instruction in the same subjects for those who are at that level of comprehension. But adoption of new curricula has generally been slow and spotty, in part due to institutional inertia and chiefly because so much has changed so quickly.

Better Use of New Technology

Technology can act as a catalyst that transforms the classroom into an interactive learning environment, but many educational institutions are not making full use of the latest advances in networking and communications technologies. Technology has the power to make the instructor a better facilitator or coach, bringing greater resources to bear in the classroom and adjusting the instruction to fit the individual. Instructors can also take advantage of the networked classroom to collaborate more closely with their peers, enhance their own expertise, and tap the many resources available online.

Computer networking in general, and second-generation (Web 2.0) capabilities in particular, give educators the means to implement interactivity, creativity and information-sharing activities to an unprecedented degree. By utilizing these tools, instructors can extend the classroom far beyond its four walls and reinforce the soft skills and critical thinking that students require to master complex tasks and compete for higher-paying jobs. E-learning software and hands-on activities also provide effective pedagogical support, but they have to be implemented in an integrated, consistent manner that reinforces objective-based instructional criteria and builds on proven techniques.

Stronger Ties with Partners

Educational institutions have to do a better job of building supportive infrastructures that include diverse partners. One way to overcome the skill/knowledge gap—the gulf between what is taught and what needs to be learned—is for educators to enlist other stakeholders from the government, community, nonprofit and business sectors. Many effective education initiatives involve multi-stakeholder partnerships that combine the expertise and resources of a number of contributors, and that includes commercial enterprises. Companies have a vested

interest in developing a skilled workforce that can strengthen the business and help contribute to healthy, stable economies worldwide.

Cutting-edge communications technologies have the power to bolster these partnerships by facilitating collaboration and delivering instructional tools where they are needed. With Web 2.0 capabilities, educational entities are no longer limited to the resources that are available from the local community or from a regional or national government that may be out of touch with their needs or strapped for funds. Potential partners abound in the connected world, and they can be accessed from anywhere at any time over the Internet.

An Example from the Private Sector

Cisco Networking Academy is one example of an educational program that has partnered with a broad range of organizations worldwide to create an e-learning environment aimed specifically at 21st century students and their instructional needs. Established 10 years ago, the academy offers a curriculum designed to augment traditional technical education with hands-on learning using the latest networking technologies. Today the program reaches 700,000 students a year (19 percent of them women) in more than 160 countries, helping to alleviate the global shortage of ICT professionals in a broad range of industries, and providing opportunities for career advancement, continuing education and economic growth.

The academy curriculum has been devised to give students the understanding of networking theory and principles, and the practical experience they need to build and maintain networks regardless of the specific vendor products used. The curriculum also prepares students looking to obtain Cisco certification exams that are universally valued in the networking industry and provide a good entrée into jobs that involve network installation, design, administration, support and sales.

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Recently the academy rejuvenated its curriculum as part of a continuing effort to stay current with technological advances, industry trends and pedagogical resources. The overall aim of the rejuvenation process was to improve student outcomes, while keeping instruction globally consistent and yet flexible enough to accommodate a variety of educational approaches. To this end, instructional designers built on already successful instructor-led classes that are supported by hands-on labs.

A Dual-curriculum Approach

In response to input from the Networking Academy community, the Cisco CCNA curriculum, which introduces students to basic network design and operation, was replaced by two new curricula: CCNA Discovery and CCNA Exploration. Both new curricula give students a firm grounding in networking technology, but each is tailored to a particular student segment based on the students' past academic accomplishments and future goals. CCNA Discovery features interactive tools, easy-to-follow labs, and quick-application exercises intended for general students with only basic PC skills who want to acquire the everyday expertise that enables them to set up a network at home, at school, or in a small business. CCNA Discovery may be delivered as independent curriculum or as part of the course of study in a secondary school or other educational institution.

CCNA Exploration takes a more top-down approach designed to engage students with advanced analytical skills who can handle more technical depth, especially students in postsecondary schools, technical colleges and universities, as well as working professionals looking to advance their careers. For example, students enrolling in CCNA Exploration are expected to know binary math and understand concepts such as algorithms and logic trees.

E-learning Leads To E-doing

Academy pedagogy employs multimodality instruction that includes Flash-based interactivity, computer visualization, sophisticated simulations, and in-class discussions centering on culturally specific scenarios. The curricula place a strong emphasis on "e-doing," the idea that the learning experience should replicate real-world tasks. E-doing and other high-

touch methodologies are designed to hold the students' interest by appealing to their interactive instincts and their already well-honed digital acuity. Visual, auditory and tactile reinforcement is combined with many opportunities for instructor feedback and participation in exercises that reflect the students' specific culture and circumstances.

Academy experts have developed network simulation software called Packet Tracer that allows students to perform a variety of tasks just as if they were administering a real network. Packet Tracer improves visualization to help students understand the inner workings of a network and make it easier for instructors to integrate simulations into their lesson plans. In addition to providing a real-time mode that simulates a network without the need to buy and install expensive equipment, the software allows students to create their own what-if scenarios and supports self-evaluation activities that give students immediate feedback about how well they are learning.

To maintain high standards, course content and assessments must be consistent no matter where they are delivered, which can be a problem in areas where schools find it difficult to obtain equipment and the instructors may need additional training themselves to be effective teachers. Training is made available to instructors in person or remotely through Webinars, videos on demand, and podcasts, along with supporting online course materials such as interactive course guides, instructor reference guides and case studies.

Metrics for Continuous Improvement

The academy takes a pragmatic, business-oriented approach to measuring success by collecting data and applying metrics to outcomes. An important means for improving curricula and instructor performance are the comprehensive Course Feedback Survey that every student must fill out at the close of a class, and the Student Outcome Survey that students are asked to complete several months after their last class. By comparing the initial course-satisfaction survey with the follow-up survey, the academy has been able to link the students' evaluation of the instruction, materials and instructor in each class with the students' subsequent success in pursuing their education, using their expertise, and finding employment.

Not surprisingly, the key predictors for later success have turned out to be high course feedback ratings for the instructor and the course materials. The Student Outcome Survey gathers information about students' employment and education accomplishments after their classes, and the academy's impact on these accomplishments. Relying on these and other metrics, the academy is moving to improve educational performance. Some of these metrics are fed back to the instructors and institutions to help monitor their success. Others are being used to improve the initial teach-the-teacher courses for new instructors and resources for existing instructors.

Leveraging Partner Contributions

Public-private partnerships are critical to 21st century educational advancement. The academy conducts its courses in close association with a variety of established institutions: secondary and postsecondary schools, universities, CTE schools—even prisons and homeless shelters. It also helps build linkages between secondary and postsecondary schools and encourages students to further their education at a college or other institution.

For instance, the curriculum has been improved as the result of relationships with the Cisco Learning Institute (CLI) and Indiana University's Kelley School of Business and School of Education. CLI is a nonprofit organization whose mission is to change the way teachers teach and students learn using technology. CLI and the university co-sponsored the Indiana University Cisco Networking Academy Evaluation Project to evaluate the success of the CCNA program, particularly in terms of its impact on the students' education and employment opportunities. The project conducted a series of surveys that collect detailed data on CCNA students, non-CCNA students and instructors, determining that the program led to an increased enrollment in four-year colleges for high school students and increased employment and salaries for community college students.

Networking and Transformation

The Networking Academy program represents a major initiative on Cisco's part, but it is but one example of what can be accomplished when educational institutions join forces with partners inside and outside the educational community to bring 21st century curricula into today's classrooms. The interaction and collaboration made possible by networking technology, together with creative pedagogical approaches and motivated instructors, have the potential to transform learning in ways that we are just beginning to explore. T

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Changing the Landscape of Teacher Education

Via Online Teaching and Learning

BY MINSUN SHIN AND YOON-JOO LEE

Technological advances in every aspect of today's society create a forum for us, teacher educators, to re-examine existing instructional methods in higher education. Daily lives of our students heavily rely on the use of computers and other electronic devices, and virtual worlds present a wide range of social opportunities through forums, blogs, wikis and chat rooms where communities are born. In order to be responsive and accommodate the changes, traditional instruction methods can't be the only way to reach technologically-savvy students. Many colleges and universities are beginning to integrate multimedia technologies into teacher education programs and to offer courses via distance/online learning (Leonard & Guha, 2001; Smith, Smith, & Boone, 2000).

As online courses are offered as an alternative to traditional instruction in higher education, there are considerable debates about online teaching and learning. Some believe that online education shows promise as an innovative and creative pedagogical method; sixty-seven percent of colleges and universities agree that online education is the single significant development and logical long-term strategy for the field of teacher preparation (Ernst 2005), offering flexibility and convenience by providing learning opportunities to anyone, at anytime, and anywhere. On the other hand, some educators hold skeptical views, perceiving distance learning as inadequate and inappropriate substitutes for on-campus and face-to-face instruction. What are the thoughts of the students who took online courses? What do they identify as advantages and disadvantages?

The authors of this article conducted

Sixty-seven percent of colleges and universities agree that online education is the single significant development and logical long-term strategy for the field of teacher preparation, offering flexibility and convenience by providing learning opportunities to anyone, at anytime, and anywhere.

a study among the students who were enrolled in a fully online graduate early childhood education program at one of the universities in New Jersey. Responses found that students were satisfied with the online courses and enjoyed the virtual learning experience. They expressed that flexibility, being able to study around their work and personal schedules, is a major advantage of attending the online class. Seventy-five percent of students indicated a willingness to take another online course, even if it were not required.

Just as they articulated several advantages, the students expressed concerns such as the lack of face-to-face interaction in the online environment. It was interesting to notice how individual personalities impacted the students' opinions toward interactions and participation in online courses. While most of the students were able to enjoy the online dialogue, one of the students felt that, as a very social person, much more could be gained from being in a traditional classroom environment and taking part in spontaneous class discussion. If someone is social and interactive, the lack of face-to-face interaction could be unfavorable. On the other hand, another student mentioned, "I am not very assertive and would probably not have communicated with the class and teacher as much as I did online."

From listening to the voices of the students who took online courses, it was evident that full online learning is a more appropriate tool for Internet-savvy students (Olson & Werhen, 2005), and most of the students are seeking interpersonal interaction in an online environment. The students in our study recommended adding time to meet in person. Their recommendations pointed toward the use of a "hybrid" format in order to improve online courses so that students can receive the benefits of both online and face-to-face courses (Zirkle, 2005). It is not surprising that these students still like certain aspects of traditional classroom environments.

In the field of business and technology, people do not want to give up the benefits of face-to-face interactions. Some companies are now launching "no e-mail day" as an answer to stress and lack of productivity in the office. Intel has become the latest in an increasingly long line of companies to launch "e-mail free Friday." Intel engineers are encouraged to talk to each other face-to-face or pick up the phone on Fridays rather than rely on e-mail. While some business sectors are trying to insert some old-fashion means of communication, the field of education is adapting technology at an uncharacteristically rapid pace without careful considerations.

Here comes the challenge we need to ponder: how do we respond to the demand of technology usage in the classroom, as well as provide interpersonal learning interaction in online environments? It is inevitable that technology and multimedia applications will be an integral part of the learning environment. Online education has been and will continuously change the landscape of higher education. In order to make online education more effective and applicable to students, a "hybrid" format seems to address the participants' major concerns related to the ways in which the online learning community is formed and maintained. When a traditional classroom environment and online world are combined, students are likely to benefit from the best of both worlds. T

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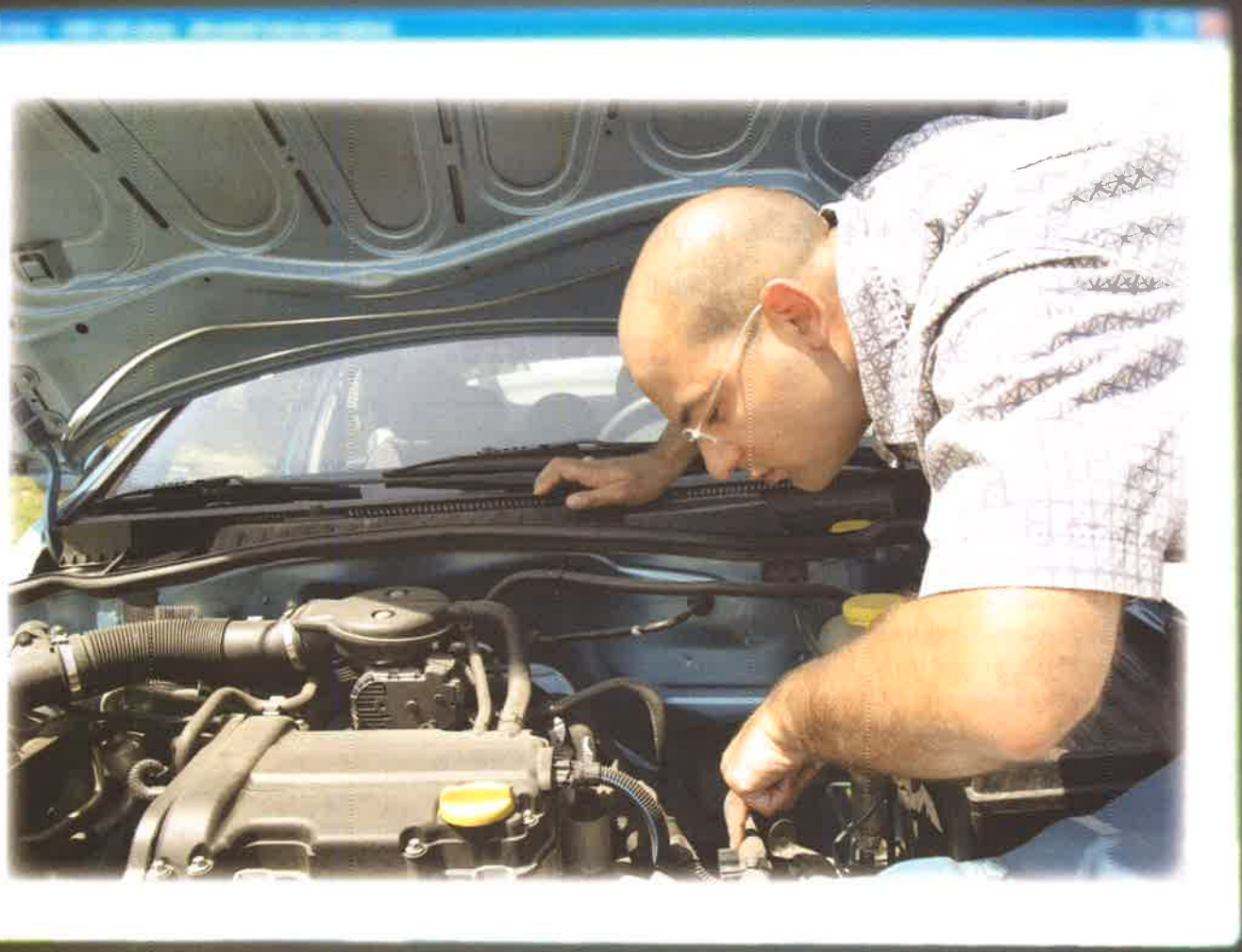


Using Technology to Enhance an Automotive Program

BY DENIS ASHTON

The PowerPoint curriculum itself is a gift of technology. The instructor is able to use still and video photography to enhance presentations using videos and photos he has created for his students. The use of projection systems, presentation software, the interactive student response systems and remote electronic computer control, as well as instructor voice enhancement, greatly improves student attention, participation and learning.

Denis Ashton uses technology in his automotive technology program at East Valley Institute of Technology (EVIT) to positively impact student outcomes.

"Technology is not only a tool that helps me teach," he says, "it helps me know if the student is really learning." Ashton, the department chair for the automotive programs at EVIT, in Mesa, Arizona, says that using an interactive PowerPoint curriculum makes learning fun for students and provides immediate feedback for the teacher. Not only does he know what percentage of the class "gets" it, but he also knows who isn't getting it, and if he needs to cover the subject again.

How it works

The system begins with a lesson on the screen so that the students are seeing the coursework as well as hearing it from the instructor. Once the presentation has been given, students are immediately tested on the content. Divided into teams, each student has an electronic key pad on his or her desk. A multiple choice question is flashed up on the screen and game show music is played while students enter their answers.

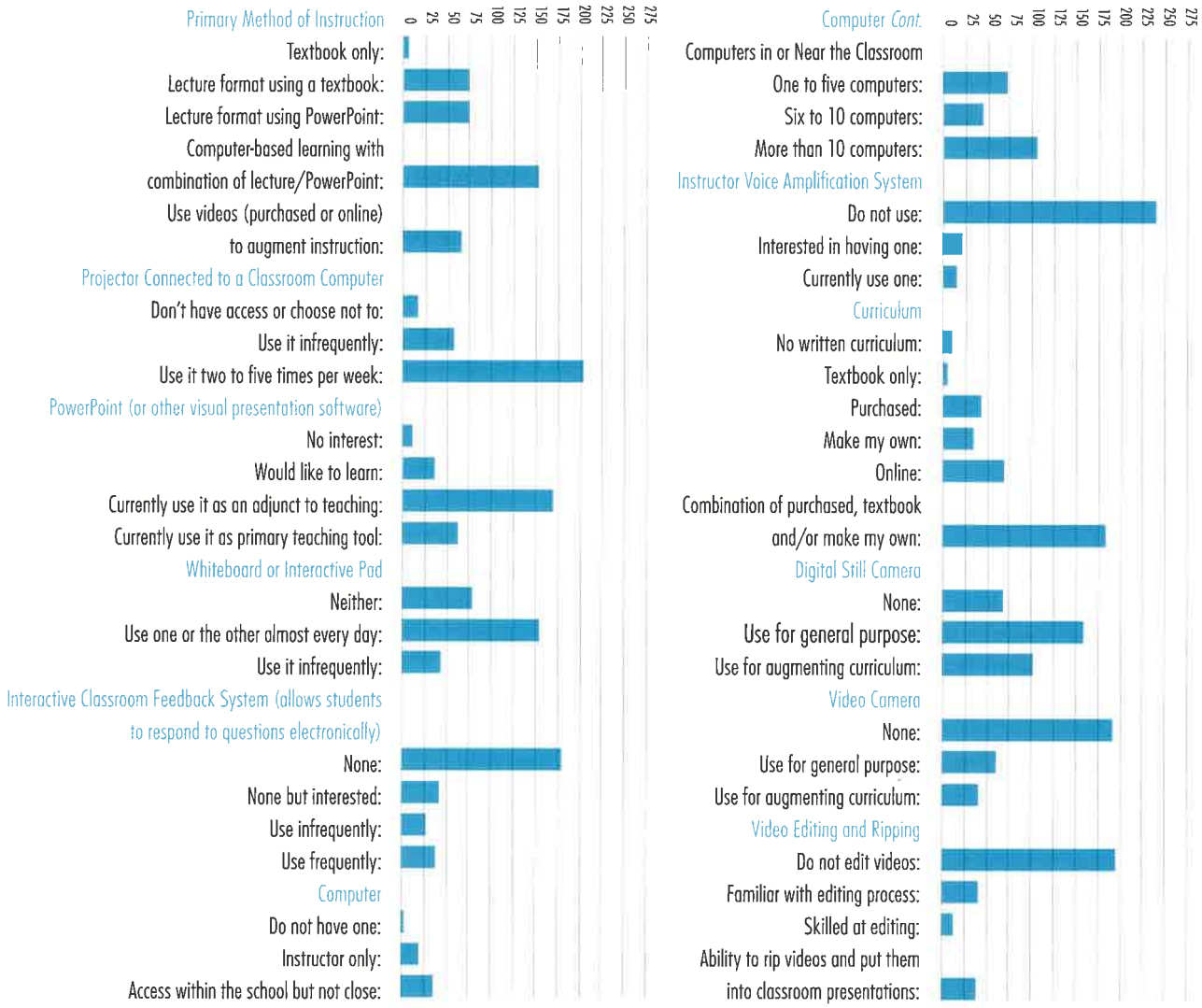
The results are immediate; the teacher and students can see who got the answer right and which team had the most correct answers in the shortest period of time. The winning team typically gets candy, or some inexpensive reward. But the real reward is to the teacher. If everyone got the answer correct, he knows he can move onto the next lesson. If there seems to be some confusion, he can go back and re-teach the content.

The PowerPoint curriculum itself is a gift of technology. The instructor is able to use still and video photography to enhance presentations using videos and photos he has created for his students. The use of projection systems, presentation software, the interactive student response systems and remote electronic computer control, as well as instructor voice enhancement, greatly improves student attention, participation and learning.

A Survey of Technology Usage

Ashton recently presented on technology in the classroom at the annual Automotive Youth Education Systems (AYES) Conference in Dearborn, Michigan. Nearly 400 predominantly high school automotive instructors from across the nation were in attendance. The focus of the presentation was to help instructors realize the powerful potential of technology to enhance student outcomes. As part of the presentation, Ashton gave a demonstration of the student interactive system with the instructors assuming the role of students. The presentation also included a hands-on workshop in which participants learned more about creating PowerPoint presentations and the use of Windows Movie Maker to edit instructor produced videos. (This included ripping

TECHNOLOGY USAGE IN THE CLASSROOM



and editing commercial videos for use in classroom presentations.) In preparation for the presentation, Ashton and colleagues conducted an informal survey of the participants to determine what technology was currently being used. Of the 400 participants, 278 responded. (This was a unique opportunity to poll a sample of instructors from across the nation. Although they were automotive instructors, Ashton believed that a poll of other CTE instructors would yield similar results.) They were pleased to learn that only 19 out of 278 did not have access to the use of a projector which would make all of the education tools described easily available to them. The survey results show that automotive instructors around the country are using technology in their classrooms to varying degrees.

Technology can be an integral partner in helping to improve student outcomes by engaging students in their learning and facilitating the transference of knowledge from teacher to student. In Ashton's program, technology is helping students pay more attention to what is being taught, is encouraging their participation by bringing dynamism to the content, and is helping to improve student outcomes overall. T

Denis Ashton

is an administrator and instructor of heavy duty automotive technology at EVIT. He has presented at AYES and ACTE conferences and has written two books. The books and his PowerPoint-based curriculum are available at **www.abariscurriculum.com**. He can be contacted through his Web site.

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

FEATURE

By Alisha Hyslop

Developing Technical Skill Assessments

THERE HAS BEEN VIGOROUS DEBATE REGARDING THE MERITS OF VARIOUS ASSESSMENT APPROACHES AND ALTERNATIVES TO NATIONAL OR INDUSTRY EXAMS. THE ENTIRE FIELD IS WORKING HARD TO **INCREASE THE FOCUS ON TECHNICAL SKILL MEASUREMENT IN ORDER TO PROVIDE CLEAR EVIDENCE THAT CTE PROVIDES A UNIQUE VALUE TO STUDENTS.**

Perkins Implementation Spotlight Series

Alisha Hyslop
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ONE OF THE BIGGEST CHALLENGES FACING THE CAREER AND TECHNICAL EDUCATION (CTE) COMMUNITY AS IT WORKS TO IMPLEMENT THE 2006 PERKINS ACT is responding to more rigorous requirements for reporting on CTE students' technical skill attainment. The law requires that measures be valid and reliable, and the technical skill attainment measure is enhanced to focus on "career and technical skill proficiencies, including student achievement on technical assessments, that are aligned with industry-recognized standards, if available and appropriate."

The U.S. Department of Education suggested in non-regulatory guidance that states and locals use the number of CTE concentrators who passed technical skill assessments aligned with industry-recognized standards as their performance indicator to fulfill the new requirements. While there has been vigorous debate regarding the merits of various assessment approaches and alternatives to national or industry exams, 44 states have decided to use the non-regulatory guidance at the secondary level, and 33 states have made that decision at the postsecondary level. Even though some states have chosen a slightly different approach, the entire field is working hard to increase the focus on technical skill measurement in order to provide clear evidence that CTE provides a unique value to students.

Unfortunately, very few states have such a system of technical assessments in place. While efforts are under way at the national level to provide some assistance, many states are moving forward with efforts to increase their ability to accurately measure the skills students gain in CTE programs. Some states are working to develop a set of assessments based on their own state standards, some are looking to align with already existing national or industry assessments, and others are taking a combination approach. Georgia already had an assessment system in place at the postsecondary level, but there was no established, statewide technical skill measurement system in place for high school students. When the new Perkins law was passed, the state embraced the challenge to build an assessment system from scratch and began working furiously.

Mamie Hanson, grants program consultant with the Georgia Department of Education's Division of Career, Technical and Agricultural Education (CTAE), said state administrators "did a lot of research to see which approach would yield the best results for students" and considered a variety of assessment options. The question they ultimately decided to measure was, "Does a student have the necessary skills to enter the career pathway or occupational area and be successful?" It was determined that a more sustainable level of technical skill attainment could be measured after a student had completed a sequence of courses, which led the state toward an end-of-pathway assessment system aligned with its new "Peach State Pathways."

During the 2007-2008 school year, Georgia began identifying a system of

valid and reliable third-party assessments that evaluate industry-based standards. Beginning with eight career pathways, Subject Matter Expert (SME) Panels were established to engage in a process of identifying or developing appropriate technical assessments. Expert panels included four to six representatives from secondary and postsecondary education, business and industry and CTE administration. Team members accomplished these tasks over four work sessions.

The first step was for the panels to identify existing assessments corresponding to the career pathway. The panels were charged with researching and evaluating current assessments, ensuring that exams were valid and reliable, and using 43 criteria to determine exams' usability. Some of the criteria included:

- Is the assessment based on a set of industry competencies or credentialing standards?
- What percentage of the competencies on the assessment aligns with Georgia Performance Standards (GPS)?
- Are tests current and is there a revision schedule?
- Are there appropriate testing security procedures in place?
- Are there appropriate accommodations for special populations?
- Can the test be administered online and through paper copies?
- Can the testing organization provide accurate feedback regarding performance for local and state reporting?
- Is the exam reasonably priced?

The final step was for the panel to review information gathered and choose to use an existing assessment in its current form or to modify it to better align with GPS. After an extensive evaluation process, SME panels identified eight end-of-pathway assessments for Phase I Career Pathways. Pilot testing for this first set of pathway assessments will be undertaken in January 2009. Exams will be offered in an online, multiple-choice format and will typically be 90 minutes in length. The process used for the first eight pathways also began again in the fall of 2008 with another set of 10 pathways. The formation of expert panels, research into existing assessments, identification of appropriate assessments and assessment piloting will be repeated each year to ensure complete coverage of all 54 of Georgia's career pathways within five years.

STOCKXPERT PHOTO

Exams will be administered to pathway completers, which are those students who complete three designated courses within a career pathway. Local CTAE administrators will work with instructors to identify eligible students. Georgia's CTAE Resource Network, a clearinghouse which supports a variety of curriculum, assessment and professional development activities, will assist state personnel with test facilitation activities at the local level. The network will provide proctor training, access to online testing procedures, and a means of issuing and tracking certificates and licensures obtained by students.

While it is estimated that less than 1 percent of the state's CTE students will take technical skill assessments during the 2008-2009 school year, this number will increase as additional assessments are identified or developed. Hanson emphasized that the state hopes to offer students national certifications in as many areas as possible to increase the value of participation. Where those national certifications are not available, state certifications with industry endorsements will be developed. This will ensure that the skills students gain in Georgia's CTE programs will be clearly recognized and valued by employers across the state, which is one of the most important goals of any assessment system. T

See this month's Research Report on page 52 for a comprehensive look at the progress that states are making in developing secondary CTE standards systems.

FEATURE

By Sally M. McCombie

High School Child Development Courses Provide a Valuable Apprenticeship

PARENTING INSTRUCTION, A RESPONSIBILITY THAT HAD PREVIOUSLY RESTED IN THE HOME, **HAS BECOME PART OF EDUCATIONAL CURRICULA.**

STOCK XCHANG PHOTO

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THE CURRENT MEDIA ARE LADEN WITH REPORTS OF THE MANY SIGNIFICANT PROBLEMS FACING TODAY'S YOUTH. In fact, parenting has become a national topic of discussion. Today's parents are inundated with advice on how to address, intervene and prevent various problems and how to intervene effectively, if necessary. Professionals in numerous fields—including psychology, medicine and religion—have proposed tips and strategies. Various human service agencies and educational institutions offer workshops and seminars on parenting topics. Parenting instruction, a responsibility that had previously rested in the home, has become part of educational curricula.

Courses in child development are offered for high school students in Pennsylvania as well as in other states. Child development programs consist of educational courses that provide students with the knowledge of the physical, emotional, social and intellectual development of children. These programs are intended to enhance knowledge in child development, change behavior when interacting with children, and influence attitudes toward child rearing.

The author visits high school programs across the state of Pennsylvania to supervise student teachers in family and consumer sciences. She has observed much diversity in the way child development programs are structured. She surveyed 90 Pennsylvania junior and senior high school child development teachers in 2000 and 2001. Of the 86 teachers who reported that child development classes were offered, 72 percent indicated that the course was delivered using a combination of didactic instruction and supervised interaction with preschool children in a child development laboratory. Seventy-four percent of these laboratory experiences take place in the secondary classroom. The high school students study, design and implement age-appropriate learning activities to explore and understand the development of preschool children.

Learning in the Lab

A child development laboratory provides direct experience with young children. Most programs are part-day and children are recruited from the community to participate. Teachers have taken courses in early childhood care and development as a part of their certification requirements. They are skilled in the use of developmentally appropriate practices and positive guidance in the preschool setting.

While there is some variation across school districts, the secondary students typically receives instruction in these concepts, as well as in basic child development theory and age/stage characteristics prior to participating in the lab. During their lab participation, the students have experiences that frequently include observing, interacting with and guiding the children as well as planning activities, preparing the classroom and evaluating the day. The Pennsylvania Department

ISTOCK PHOTO

of Education Child Development Laboratory Procedures Guidelines states that the mission of a child development laboratory is to provide high school students with the opportunity to observe and interact with preschool children in a model setting that utilizes exemplary practices. Laboratory experiences offer high school students opportunities from which they can learn and discuss real-life concepts related to child development. They work under the direction and guidance of the classroom teacher who models positive interactions with the preschool children. High school students learn in a manner similar to an apprenticeship where they become skilled at positive behaviors and also in the language of the skill. Furthermore, high school students become aware of what the teacher thinks about a task or activity, providing the opportunity for students to experience a cognitive apprenticeship. The teacher works with students individually or in small groups to plan activities, schedules and nutritious snacks for the preschoolers. After the preschoolers leave, the teacher and students discuss and reflect to determine what changes need to be made for the next session. As the semester proceeds, the high school students take on more responsibility for managing the preschool.

From a Vygotskian perspective, this is an ideal way for high school students to learn. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition. A second aspect of Vygotsky's theory is the idea that the potential for cognitive development depends upon the "zone of proximal development" (ZPD): a level of development attained when children engage in social behavior. Full development of the ZPD depends upon full social interaction. The range of skill that can be developed with adult guidance or peer collaboration exceeds what can be attained alone. Participation in the child development laboratory provides a forum for high school students to act in adult roles and

tie acquired skills and thinking abilities to the specific context in which they will likely need them later on in life.

Conducting the Survey

The author's survey included an open-ended question asking the teachers to list strengths of the child development programs in their schools. The most common response referenced the advantages of hands-on laboratory experiences with preschool children. The high school child development laboratories help students experience what it means to work. The experience presents authentic problems to solve and opens the world of career options in child-related fields.

One of the advantages listed by several teachers was an increase in student attendance. The high school students each have responsibilities in the lab. The classroom teacher, the preschoolers and fellow classmates depend on each student to be there and fulfill required duties. The students know that their attendance is valued and if they miss a class, someone else must do that duty. Some teachers require that the high school student assign someone to complete the tasks if they are absent, much like a classroom teacher must do in the event that he doesn't come to school; lesson plans, instructions and teaching materials must be available for the substitute teacher.

During one classroom visit, a classroom teacher relayed an incident to the author. On a day that one high school student was absent, a preschooler came into the classroom very excited. She had drawn a special picture for the high school student and was disappointed when she realized that the high school student was not there. Upon her return to school, the high school student learned that the preschooler was looking for her. This helped her to realize that her presence was valued.

Another explanation for the increase in attendance may simply be that students enjoy the hands-on experience that a lab provides. Students look forward to the class because it is something that makes sense to them, a place they can find success as a result of their hard work and dedication. A rise in self-esteem and a feeling of purpose were other advantages teachers listed in the survey.

Lab Experience an Advantage

In 2005, the author conducted a study comparing the knowledge of high school students who complete a child development semester course that combines didactic instruction with a child development laboratory to the knowledge of students who complete a non-laboratory, didactic instruction-only child development semester course. The experiment used a test that was developed for the study.

The subjects were 540 students from 10 high schools in Pennsylvania. Teachers administered the 50-item multiple-choice test that is aligned with the Pennsylvania Academic Standards for Child Development. The laboratory group scored statistically higher than the non-lab group. This suggests that a high school child development curriculum should include a laboratory experience where the high school students can apply the theories and concepts studied in the course. Interacting with preschoolers and planning activities is authentic learning. It is learning that is relevant and useful. T

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

FEATURE

By Tom Farmer

A STEM Brainstorm at NASA

LEADING EDUCATORS TOSS AROUND IDEAS FOR ATTRACTING TOP STUDENTS INTO SCIENCE, TECHNOLOGY, ENGINEERING AND MATH FIELDS

Tom Farmer
is communications manager at Pitsco. He can be contacted at tfarmer@pitsco.com.

"I WANNA BE AN ASTRONAUT WHEN I GROW UP" was a common refrain from children in the 1970s, 80s and 90s, and it might have given the U.S. space program leaders a false sense of security that an endless line of well-qualified workers would be waiting outside their door for years to come. The reality has been that not enough students have chosen science, technology, engineering or math (STEM) tracks in college, so it's more difficult to find the necessary engineers, chemists, programmers and pilots required to propel the space program to new heights.

However, there's good news. NASA is now well aware of the problem and has begun taking steps to remedy the situation. In conjunction with the October 2007 launching of Space Shuttle Discovery, NASA hosted an educational forum titled "Attracting Top-Performing Students to STEM Education Programs and Careers."

Fifty leading educators, students and corporate officials from across the United States were brought together for the event, including executives from Yahoo and eBay and educators from Stanford, MIT, Purdue and other universities. The goal was to discuss strategies to inspire future generations of explorers and innovators. Noted engineering advocate and author Celeste Baine also participated in the event. Since she was a child, she had viewed space exploration as somewhat of a mystery.

"It didn't seem real," Baine said. "I watched launches and it was interesting, but I never had enough information about it. I thought you had to be an aerospace engineer. Now, I see they're hiring biomedical engineers, mechanical engineers, industrial engineers. There are thousands and thousands of engineers working for NASA." Baine is personally addressing one of the most glaring needs by writing a NASA career guide, and she plans to incorporate more references to NASA in her "Engineers Can Do Anything" presentation and other educational programs she presents in schools across the country.

NASA Experience

The day before the forum, participants enjoyed a tour of Kennedy Space Center and the International Space Station exhibit in Florida. Equivalent in size to three football fields, the space station is composed of nodes, some of which Baine found fascinating in the exhibit. "I was thinking how interesting it would be to be an engineer who develops these things for a weightless environment. You could put controls on the ceiling, put things everywhere," she said. "Even the beds were vertical. Astronauts have to be strapped in to sleep." Another thought occurred to Baine as she toured the facilities and the launch pad.

"What blew my mind is that this technology was available back in the 60s. Why haven't we done more with it?" she said. "We had people walking on the moon so long ago, and we haven't

come too far since then. Think of all that we can accomplish today with so many advances in technology!"

Educational Forum on STEM

NASA has its own education department and offers programs and materials for teachers, but career information is scarce, Baine says. "There are bookmarks for engineering, but it's not anything that's compelling. You've got to make students feel like they could be a part of it."

Forum members divided into groups and brainstormed ways top students could be persuaded to choose STEM-related careers. Among the ideas were summer programs and camps, competitions, more career strands, student tours of NASA sites, astronauts in the classroom, and better videos touting careers.

"I remember being stunned by what the kids had to say," Baine noted. "They gave a different perspective. A girl talked about how she was interested in space and had gotten to the point where she was making her teacher mad because she knew so much more than the teacher about living in a weightless environment. She really needed a mentor and couldn't find anyone to help her go to the next level."

In the future

NASA isn't the only entity noticing students' lack of interest in STEM careers. Baine says 38 states are considering adding engineering to their education standards, just as a few other states already have done. "I'm so happy to see that it's happening," she said. "Six states have been on board for quite some time." Another way to get students interested in careers at NASA is to show them firsthand what's involved. "They should find more ways to give high school kids internships at NASA, have students work with the space program," Baine said. "We need students more involved at a younger age."

And more attention must be focused on top students—the cream of the crop. "How do we nurture them? That's a big question. The school systems tend to teach to the middle," Baine said.

Forum leaders planned to compile the group's findings, issue a report, and remain in contact with participants to keep ideas flowing for ways to stimulate student interest in STEM. T

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

2008 Annual Report to Members

CHANGES

PRESIDENT'S MESSAGE

It never ceases to amaze me what can transpire in a year; and 2008 was no exception. What did get my attention in 2008, however, was the monumental change that occurred during the year and the impact it has had on how we view the world, how we perceive situations, and how we address our needs.

For example, what changes have you made as a result of the financial crisis that saw some of the biggest stock market swings in history? What effect has the election of the first African-American president had on how you view the United States? What did you think about during the first-ever Olympics in China?

Each of these events illustrates the pervasiveness of change. From finance to politics to sport, every aspect of our lives is affected by change. While that change may be unsettling, it gives us an opportunity to analyze what we are doing, ask probing and necessary questions, and get creative and innovative.

Change is nothing new for education and certainly not for the Association for Career and Technical Education (ACTE). As this year's Annual Report will bear out, your professional association went through a variety of changes last year in its continued effort to ensure that you get the news and information you need, that the public learns about, understands and values career and technical education, and that our programs receive the funding and support they need to educate and prepare tomorrow's workforce.

Those changes included a revamped Web site, the genesis of a national image awareness campaign, and a number of editorial board meetings throughout the country. One of the starkest examples of ACTE's activities in this change environment was in relation to the recent national election. With a new administration, a new Congress and plenty of new politicians, ACTE spent countless hours informing the candidates and assisting educators at the state level.

Each of these is an example of how your professional association addresses change and looks for opportunities to positively affect career and technical education.

There is no doubt that 2008 was full of change; and I am willing to wager that 2009 will see more of the same. Regardless of what changes or how the change transpires, successful educators, businesses and organizations will be the ones that meet the change head on and position themselves to seek and take advantage of the opportunities that will present themselves.

In the words of David Bowie

Ch-ch-ch-ch-changes
Turn and face the strange

Working together, we as career and technical educators and members of ACTE, will address the strangeness of change with the same energy and enthusiasm we bring to our classes every day.

Bryan Albrecht
ACTE President
2008-2009

Changing Legislative Environment

In 2008, Americans headed to the polls to cast their votes in a number of elections, most notably for President. As with every election, there have been and will continue to be changes. As the primary advocacy organization for career and technical education, ACTE has been addressing these changes and communicating the impact of these changes with the career and technical education community.

- To improve members' understanding of the full range of ACTE's advocacy activities, the Association launched a blog titled "CTE Policy Watch."
- Federal budget woes continued in 2008 and ACTE spent a great deal of time preparing for and responding to the President's budget request which eliminated funding for Perkins, and then working with Members of Congress to increase funding for CTE. Activities included serving on the executive committee of the Committee for Education Funding, a joint funding request to increase Perkins funding to $1.7 billion, numerous visits to Congressional offices, legislative alerts, successful House and Senate "Dear Colleague" letters, and close communication with congressional staff in preparation for hearings and mark-ups.
- ACTE closely followed the congressional and presidential elections for their implications on CTE, and provided information to members on candidate's positions through the Web site, *Techniques,* blog and *Legislative Updates*. ACTE also made contact with the presidential campaigns and with congressional candidates in close races to provide information on CTE, and reached out to the Obama transition team and new Members of Congress after the election.
- In partnership with the Congressional CTE Caucus, ACTE hosted a "CTE Goes Green" reception on Capitol Hill to showcase students from numerous CTSOs and the work they are doing related to environmental and energy sustainability. The event was well attended by approximately 70 Congressional staff and additional members of the education community.
- ACTE continued to work on Perkins implementation issues. The Association submitted comments in reaction to the proposed guidelines issued from the U.S. Department of Education, participated in technical assistance conference calls, was involved in the Department of Education's efforts to assess the feasibility of developing a national item bank to be used for technical skill assessments required under Perkins, launched a series of *Techniques* articles on implementation best practices, and contributed to the new CTSO guide for using Perkins funds.

Changing Information

News and information happen continually, and people want to know what is happening when it is happening. ACTE has been addressing the changing news and information environment by updating its Web site, creating new material, and partnering with organizations to ensure members receive information when they need it, and in ways in which they can effectively use it.

- ACTE launched its new Web site that includes an enhanced search function, a forum area for educators to interact and discuss issues, fewer clicks to important information, and a way for members to customize their content.
- ACTE published four Issue Briefs that address CTE's role in major national issues. In 2008, Issue Briefs were published on workforce readiness credentials, energy and environmental sustainability, career guidance, and business-education engagement. These Issue Briefs are an important part of ACTE's advocacy efforts.
- ACTE completed initial work on all 50 state CTE profiles. These profiles are posted on the ACTE Web site for use by educators, policymakers, researchers and the media and provide detailed information about CTE programs across the country.
- The ACTE Research Committee completed its process of developing a National CTE Research Agenda and this agenda was endorsed by the ACTE Board.
- ACTE continued to add additional resources to its Research Clearinghouse and Promising Practices and Programs (PPP) Web page, and collected additional student success stories.
- ACTE addressed Perkins implementation issues through a series of *Techniques* articles on implementation best practices, and by contributing to the new CTSO guide for using Perkins funds.
- Members who log into the new ACTE Web site can now save their favorite pages to their myACTE page. They can also e-mail a page on the ACTE Web site to their colleagues.
- ACTE continued its activities with the National Research Center for Career and Technical Education, serving as the dissemination arm. Through this partnership, ACTE is sharing the research findings coming out of the Center with career and technical educators, broadening its impact.

Changing Professional Development

It used to be that once a year, members of an organization or association would gather for an annual meeting. While annual meetings still occur, the delivery of professional development has changed considerably. Today, ACTE offers its members professional development opportunities in a variety of ways—in person or online; audio or video; solo or in partnership.

- ACTE completely revamped the National Policy Seminar to provide more time for attendees to spend on Capitol Hill and interact with policymakers.
- ACTE partnered with Siemens Building Technologies and Gateway Technical College to host a Sustainability Conference that addressed curriculum and facilities issues.
- ACTE partnered with the National Council of Local Administrators to host the Best Practices Conference in Tucson, Arizona. Approximately 150 educators attended and participated in this event.
- ACTE co-hosted two Webinar series, one with CIW on integrating IT certifications into secondary and post-secondary courses, and one with DeHavilland Associates on building business/education partnerships. Nearly 100 people participated in these Webinars.
- ACTE received approximately 130 concurrent session submissions for the Annual Convention.
- ACTE offered three pre-Convention Workshops for the 2008 Annual Convention that focused on marketing, technology centers, and embedding literacy.
- ACTE partnered with the International Center on Leadership in Education to develop a strand of CTE-related sessions at the Model Schools Conference.

Changing Electronic Media

No area has changed as much over the past few years than electronic media. From news delivery to networking to photo sharing, the Internet continues to morph and change as the needs of users does the same. ACTE has embraced electronic media and is using it to enhance the information it provides and increase the ways in which it interacts with members.

- ACTE ended the "TechNotes" news podcasts due to a duplication of material in *Career Tech Update* and focused on the "Career Tech Talk" podcast. "Career Tech Talk" features interviews with policymakers, education professionals, authors, industry representatives and other CTE innovators. This year, ACTE recorded podcasts with each Convention General Session speaker as well as major names related to CTE and workforce development. Celebrity interview subjects included Mike Rowe, host of "Dirty Jobs", Newt Gingrich, and educator astronaut Barbara Morgan.
- ACTE launched its second Convention blog, this year with multiple attendee bloggers. ACTE closed its Division blogs and refocused on staff-driven blogs, creating a blog for more in-depth coverage of our advocacy efforts and of CTE policy issues, written by the Public Policy Department. In addition, ACTE created several short-term blogs in which ACTE staff wrote about their experiences at CTE-related conferences such as the National FFA Convention.
- Once again, ACTE created a widget countdown tool to help promote the Annual Convention as well as a Convention promotional video.
- ACTE created a Twitter account and launched its Twitterstream in time for the 2008 Convention, providing updates to members through this quick microblogging tool that can reach users at their computers and mobile phones.
- ACTE formed a partnership with SchoolTube, a moderated, safe online video sharing site for students and teachers. SchoolTube hosted the online video component of ACTE's second annual CTE Month Public Service Announcement Contest and is also bringing a studio to the Annual Convention to capture video footage.
- ACTE continues to share event photos on the online Flickr photo gallery.
- To promote the National Policy Seminar and educate members on how to visit Capitol Hill, ACTE recorded a how-to video about meeting face-to-face with your representatives about CTE. This video is available on the ACTE Web site.
- In addition to its MySpace account, ACTE added LinkedIn and Facebook to its external social network presence. The LinkedIn community has been highly popular with nearly 200 members.
- ACTE launched member-driven discussion-based electronic forums.
- This fall, ACTE began publishing the e-Connect column in every issue of *Techniques*. This column recommends Web 2.0 resources such as blogs, online communities and wikis. The recommendations encompass CTE, general education and lifestyle topics.
- ACTE is writing a series of in-depth articles on Web 2.0 in the classroom and for professional development for the January-May 2009 issues of *Techniques*. ACTE continued integrating its print and online offerings with the Q&A column.
- ACTE started an online library of Web 2.0 and e-media video tutorials to help members better use these tools. This library will be expanded throughout 2009.

Changing Image and Promotion

To help policymakers and the public understand the value of CTE, ACTE promotes CTE, contacts and works with local media, and utilizes its members in an ongoing effort to stress the value of CTE.

- ACTE worked with the CTE Congressional Caucus to get a resolution approved by the House of Representatives endorsing "CTE Month" and applauding ACTE for recognizing the importance of CTE. The Resolution was approved by the House on February 25 by a vote of 380-0.
- ACTE held its second annual CTE Month Public Service Announcement Contest. The goal was to promote CTE Month in February 2009 (and its theme, "CTE: Building Blocks for a Successful Career") through a video public service announcement (PSA) that will be distributed on the Web and to TV stations in February. The contest was open to secondary and postsecondary students in CTE-related film, video and production classes. Approximately 150 entries were received, a 50 percent increase over the number of entries last year.
- ACTE continued work on the Teacher Quality Taskforce, which developed a definition of a "high quality CTE teacher," solicited feedback, and presented the definition as a Resolution at the 2008 Convention.
- Through the beginning of November, ACTE has received 63 media inquiries from newspapers, magazines and research groups requesting information on career and technology education, policy issues, and member programs. That is a 10 percent increase over last year. ACTE has more than 335 media placements in education and national publications including, *Remodeling Magazine, Education Daily, Education Week, Employment and Training Reporter, ABC News, Associated Press, The Construction Informer, Kansas City Star, Community College Week, St. Pete Times, LA Business Journal, Houston Chronicle, CNBC, Washington Post, The News and Observer, Dayton Business Journal, Columbus Business First,* and *Voice of America.*
- ACTE is partnered with Kuder, National Career Development Association, National Association of State Directors of Career and Technical Education Consortium, and the Society of Vocational Psychology to celebrate the 100 years of career guidance. In April, ACTE participated in a press conference to launch the celebration, and it received more than 70 media placements. In July, Kuder held a teleconference on the Statement of Beliefs, which generated national coverage.
- ACTE conducted editorial board meetings with the *Kansas City Star, Columbia Tribune, Charlotte Observer, Cleveland Plain Dealer, Cincinnati Enquirer, Columbus Dispatch, Dayton Business Journal, Columbus Business First,* and *Middletown Journal.*
- ACTE hosted the annual CTE Month Logo Design Contest, which generated more than 600 entries.
- In recognition of CTE Month, ACTE staff visited McKinley Technical High School in Washington, D.C.
- ACTE initiated a public awareness campaign aimed at educating the public about the importance of CTE.
- ACTE won an APEX Award of Excellence for the ACTE Issue Brief *Career and Technical Education's Role in Dropout Prevention and Recovery,* and a Hermes Creative Awards' Gold Award for the design of the January 2007 *Techniques* cover.

Changing Partnerships and Collaborations

This is one area that needs to continue to change and evolve. ACTE is always looking for new partnerships that will enhance the value of membership and improve the value and respectability of career and technical education.

- ACTE increased its support from business and industry with both a larger exhibit hall and an increase in sponsorships.
- As of November, ACTE has 28 Educational Institution Members, 25 Affiliate Members, and 17 Associate Members.
- Collaboration with the American Association of Community Colleges and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) was strengthened through work on the budget and appropriations process, possible stimulus package, and the election. ACTE also worked with NASDCTEc and other organizations to explore the possibility of establishing a national technical assessments clearinghouse and item bank.
- ACTE consistently worked with Congressional staff and the Administration to represent CTE interests in the discussions surrounding the reauthorizations of the Higher Education Act and No Child Left Behind, and other legislation on topics such as high school reform, energy sustainability and job training.
- ACTE partnered with the National Research Center for College and University Admissions on student and teacher surveys that will collect new data on CTE. ACTE formed a student performance task force to help identify ways to use data to drive CTE program improve-

ment. Task force proposals will begin to be implemented in 2009.

- ACTE partnered with more than a dozen companies and organizations to make the 2008 ACTE Annual Convention and Career Tech Expo one of the most comprehensive and diverse ever. The partner groups included the Association for Career and Technical Education Research, High Schools That Work, the International Vocational Education and Training Association, Johnson & Wales University, MarkED, the National Association of Agricultural Educators, the National Automative Technicians Education Foundation, the National Career Academy Coalition, the National Research Center for Career and Technical Education, NOCTI, Participant Media, Project Lead the Way, and Tools for Schools.
- ACTE partnered with Siemens Building Technologies and Gateway Technical College to host a Sustainability Conference that addressed curriculum and facilities issues.
- ACTE continued to serve on the Board of Trustees for America's Promise Alliance and on the Board for the National Career Academy Coalition. ACTE was also represented on the Friends Advisory Group for the National High School Center.
- ACTE partnered with the National Council of Local Administrators to host the Best Practices Conference in Tucson, Arizona. Approximately 150 educators attended and participated in this event.
- ACTE continued to be a trustee of the Trust for Insuring Educators and had a presence at its Annual Meeting.

Changing Outreach

Every year, new organizations, associations and businesses begin to understand the value of career and technical education. ACTE is leading the effort to engage and inform these groups, and to keep the conversation about career and technical education at the forefront of all education and workforce discussions, whether they occur at the national, state or local level.

- Staff presented or had a presence at the following meetings: National Energy Workforce Summit, Ohio Legislative Seminar, Massachusetts Association of Vocational Administrators, U.S. Chamber of Commerce Education and Workforce Summit, AACC Workforce Development Institute, Center for Energy Workforce Education Summit, All Ohio Career and Technical Education Conference, NCACTE's Legislative Conference, Model Schools Conference, SkillsUSA, National Career Pathways Network Conference, Maine CTE Directors' Conference, Wisconsin ACTE Legislative Seminar, New Mexico ACTE Summer conference, Florida ACTE Summer Conference, FCCLA National Conference, TSA National Conference, Model Schools conference, the Florida "Career Academies on the Hill" conference, National Association for Career and Technical Education Information conference, NASDCTEc spring and fall conferences, STEM Equity Pipeline Advisory Committee meeting, Education Commission of the States conference, State Scholars conference, Digital Now conference, University Council for Work force and Human Resources Education summer meeting, Penn State Directors Academy, Georgia ACTE conference, OVAE Data Quality Institute, and the AYES Training Conference, National FFA conference, Best Practices Conference, ACTE Regional Conferences, National Career Academy Coalition.
- ACTE worked with representatives from the National Association of State Boards of Education, SchoolTube, Schoolnet.com, the Council for Adult Experiential Learning, the Campaign for Youth, National Association of Secondary School Principals, National Entrepreneurship Foundation, National Youth Employment Coalition, National High School Alliance, Air-Conditioning Heating and Refrigeration Institute, Association of Equipment Manufacturers, America's Promise, Association for Staff Training and Development, Alliance for Excellent Education, American Youth Policy Forum, National Governors Association, Software Information Industries Association, Council of Chief State School Officers and the U.S. Chamber of Commerce.

Future Changes

French classical author Francois de la Rochefoucauld once said, "The only thing constant in life is change." As this annual report shows, 2008 was certainly a year of constant change for ACTE. But more importantly it was also a year full of opportunities—many of which ACTE was able to explore. While we don't exactly know what results will come from these opportunities, we do know that this Association would not move forward if it didn't open doors, take phone calls and reach out to see what opportunities might be available.

Last year is now in the past, but we know that 2009 will have more changes and present more opportunities. It's how we address these changes and how we look at these opportunities that will determine the success of this Association.

Allen P. DeLeon, CPA, P.C.
Richard C. Stang, CPA, P.C.
Jody H. Vilardo

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Board of Directors
Association for Career and Technical Education
Alexandria, Virginia

INDEPENDENT AUDITOR'S REPORT

We have audited the accompanying statements of financial position of the **Association for Career and Technical Education (ACTE)** as of **June 30, 2008 and 2007**, and the related statements of activities, functional expenses, and cash flows for the years then ended. These financial statements are the responsibility of ACTE's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the **Association for Career and Technical Education** on **June 30, 2008 and 2007** and the changes in net assets and cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

DeLeon & Stang

DeLeon & Stang, CPAs
Gaithersburg, Maryland
September 10, 2008

This published version of the auditor's report consitiutes only a summary of the complete report. Full reports are avilable upon request.

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ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION
Statements of Financial Position
June 30, 2008 and 2007

	2008	Restated 2007
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 881,629	$ 851,206
Accounts receivable, net of allowance for uncollectible accounts	175,246	172,634
Prepaid expenses and other assets	216,532	138,442
Due from related party, CTE Foundation	98,275	82,091
Inventory, net of provision for obsolete inventory	77,156	68,811
Total current assets	1,448,838	1,313,184
Investments, at fair value	1,440,292	1,265,606
Property and equipment, net of accumulated depreciation	2,357,673	2,347,988
TOTAL ASSETS	$ 5,246,803	$ 4,926,778
LIABILITIES AND NET ASSETS		
Current Liabilities:		
Accounts payable and other liabilities	$ 401,247	$ 567,468
Current portion of long-term debt	32,523	608,537
Deferred revenue	1,004,756	958,465
Rental deposits	8,443	8,443
Total current liabilities	1,446,969	2,142,913
Long-term debt, less current portion	1,275,412	740,628
Total liabilities	2,722,381	2,883,541
Net Assets:		
Unrestricted net assets	1,295,266	1,092,653
Unrestricted net assets, Board Designated - Regions & Divisions	228,159	187,031
Unrestricted net assets, Board Designated - Capital improvements/Reserves	770,607	519,403
Temporarily restricted net assets	230,390	244,150
Total net assets	2,524,422	2,043,237
TOTAL LIABILITIES AND NET ASSETS	$ 5,246,803	$ 4,926,778

ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION
Statements of Activities
For the Years Ended June 30, 2008 and 2007

	2008			Restated 2007
	Unrestricted	Temporarily Restricted	Total	Total
Revenue and Support:				
Membership dues	$ 1,550,400	$ -	$ 1,550,400	$ 1,554,988
Contributions	78,354	500	78,854	46,609
Sponsorship	110,282	-	110,282	77,450
Program service revenue:				
Convention, conferences and workshops	2,335,378	-	2,335,378	2,065,031
Publications	259,790	-	259,790	347,220
Education services	238,506	-	238,506	206,124
Advertising	232,929	-	232,929	289,483
Rental income	166,357	-	166,357	158,108
Service fees	41,857	-	41,857	45,732
Other revenue	134,691	-	134,691	251,337
Investment income	(43,023)	(5,760)	(48,783)	211,961
Net assets released from scholarship restrictions	8,500	(8,500)	-	-
Total revenue and support	$ 5,114,021	$ (13,760)	$ 5,100,261	$ 5,254,043
Program Services:				
Convention, conferences and Workshops	$ 1,151,655	$ -	$ 1,151,655	$ 1,169,442
Publications	981,227	-	981,227	1,003,869
Government relations	258,115	-	258,115	259,713
Regions & divisions	185,029	-	185,029	153,530
Education services	95,958	-	95,958	137,106
Total program service	2,671,984	-	2,671,984	2,723,660
Supporting Services:				
Finance & operations	1,172,501	-	1,172,501	1,126,675
Membership	386,013	-	386,013	364,729
Governance	388,578	-	388,578	425,869
Total supporting services	1,947,092	-	1,947,092	1,917,273
Total expenses and losses	4,619,076	-	4,619,076	4,640,933
Change in net assets	494,945	(13,760)	481,185	613,110
Net assets at beginning of year, restated	1,799,087	244,150	2,043,237	1,430,127
Net assets at end of year	$ 2,294,032	$ 230,390	$ 2,524,422	$ 2,043,237

State Secondary CTE Standards (Part 1)

By Marisa E. Castellano, Linda Harrison and Sherrie Schneider

STOCK XCHANG PHOTO

IN MANY PARTS OF THE COUNTRY, TECHNICAL SKILL STANDARDS FOR CAREER AND TECHNICAL EDUCATION (CTE) HAVE EXISTED FOR A LONG TIME. IN OTHERS, THE WORK OF DEVELOPING STANDARDS IS UNDER WAY. More states are realizing that having CTE standards is important because standards lay out expectations for student performance. The research report excerpted here (available in full at **www.ncctе.org/publications/CTE-Standards-Secondary.pdf**) was funded by the U.S. Department of Education's Office of Vocational and Adult Education (USDE/OVAE). In this excerpt, we describe the progress and status of states in developing secondary CTE standards systems. In Part 2 (in the February issue of *Techniques* magazine), we will report on whether and how high school teachers are using those standards in their CTE courses.

Research Questions and Method

In the first part of this study, we conducted online searches of CTE standards across the 50 states and the District of Columbia. This information was then validated through follow-up interviews with state officials. The goal of Part 1 was to synthesize what was known about the secondary CTE standards of each state circa fall 2006. The following research questions were asked for each state. This excerpt contains findings from Questions 1, 3, 6 and 7.

1. Has the state developed a system of CTE standards?
2. How were the existing standards developed?
3. Are the CTE standards aligned with the state's postsecondary technical standards?
4. What is the approval process for new secondary CTE programs?
5. How are outdated CTE programs discontinued? What factors influence this decision (*e.g.*, enrollment, labor market considerations)?
6. How does the state ensure that the established standards are reflected in practice?
7. What state funding is available for secondary CTE programs (aside from federal Perkins money)?

We conducted Internet searches of state departments of education or other state agency Web sites for information on each state's CTE standards system. After we had exhausted the online sources for a state, we contacted the state CTE director for a telephone interview. Our search results were validated and supplemented during these interviews, which were designed to collect the information still missing for each state.

Findings

The findings from this project provide a snapshot of the status of each state's sec-

ondary CTE standards system as of fall 2006. We found a great deal of variability in the design of state standards systems across states, with these differences explained by each state's unique philosophies, policies and practices. Of the 50 states and the District of Columbia, 30 reported that they have a statewide secondary CTE standards system. They are listed in the table as Group A. Eleven states (Georgia, Hawaii, Idaho, Illinois, Maine, North Dakota, New Mexico, Nevada, Rhode Island, South Dakota and Vermont) were either in the process of developing or had partially developed their CTE standards system; these states were in Group B.

Our cutoff for assigning a state to Group A or B was the extent of information available: If there were few answers to our interview questions, the system was not sufficiently developed to be in Group A. Group C consisted of the District of Columbia and seven states (Arkansas, Colorado, the District of Columbia, Maryland, Michigan, Minnesota, Montana and Pennsylvania) that did not have a statewide CTE standards system, although they did have locally developed CTE standards in many if not all localities. Two states did not participate in the interviews.

Other overall results across all states include:

- Ten states had aligned their secondary and postsecondary CTE standards systems. Most of the remaining states do not have statewide postsecondary technical standards.
- Eighteen states have cross-walked, or integrated, their specific state academic standards into CTE courses and programs.
- Nineteen states reported that they used or planned to use student assessments as a way of ensuring the implementation of the CTE standards.
- States that provided ongoing categorical state funding for CTE were more likely to have a completed standards system.

In these and other indicators, the states that appeared to be the furthest along in the development of a statewide CTE standards system that was aligned with the requirements of Perkins IV were Louisiana, Mississippi, North Carolina, Ohio, Oklahoma, Texas and Utah.

States with Complete or Nearly Complete Statewide Secondary CTE Standards Systems

Group A States	Ongoing Categorical State Funding Provided n = 22 of 30	Academic Standards Cross-walked to CTE n = 18 of 30	Standards Aligned with Postsecondary Tech Standards n = 10 of 30
Arkansas		X	X
Arizona	X	X	
California		X	
Connecticut	X		
Delaware		X	X
Florida	X		X
Iowa	X		
Indiana	X		
Kansas	X	X	
Kentucky		X	
Louisiana	X	X	X
Massachusetts	X		
Missouri	X	X	
Mississippi	X	X	X
North Carolina	X	X	X
Nebraska		X	
New Hampshire		X	
New York		X	
Ohio	X	X	X
Oklahoma	X		X
Oregon			
South Carolina	X		
Tennessee	X		
Texas	X	X	X
Utah	X		X
Virginia	X	X	
Washington	X	X	
Wisconsin	X	X	
West Verginia	X		
Wyoming	X		

Note. The sample consisted of the 30 states in Group A, that is, those states that have complete or nearly complete statewide standard systems.

STOCKXPERT PHOTO

States with Ongoing Categorical CTE State Funding

All states receive federal Perkins funding to support CTE. But this funds only about 5 percent of most states' secondary CTE expenditures. Most CTE funding comes from state and local sources. Some states allocate funding to secondary CTE through what is called categorical (*i.e.*, specifically targeted) funding, while other states provide more general K-12 education funding to local education agencies which then distribute the funds among many local programs, including CTE. It can be difficult to determine whether a state's funding mechanism is categorical or not because states also provide one-time grants or supplements for CTE activities, thus providing targeted but inconsistent funds. We relied on our state contacts to help us classify each state correctly.

Of the 30 states in Group A, 22 reported that they provide ongoing categorical state funding for secondary CTE programs (see table). Only states with consistent, ongoing categorical funding were included in this count. No information was collected about the amount of state funding provided, but several officials in those states said that their CTE standards system had come about thanks to a steady source of funding. However, the full report notes that nine of the 11 states in Group B also receive ongoing categorical state funding, yet they have not yet fully developed a CTE standards system. This finding suggests that steady state funding can help a state develop its CTE standards system, but it is not a sufficient condition. Clearly, though, developing standards and a statewide system for their implementation requires investments of time and money.

Alignment of Secondary Academic Standards with CTE Programs

Integrating specific state academic standards into CTE courses and coursework is called cross-walking. States identify the academic skills addressed in each CTE program area, and these skills become an explicit part of the curriculum. While some might argue that the time spent on academic skills takes away from the time needed to master the skills of the CTE program area, most CTE program areas do include important foundational academic skills. In the current climate of strong accountability for academic achievement, CTE programs that explicitly list their contribution to academic achievement may be more highly valued than similar ones that do not. One example of cross-walking from Louisiana lists "learning and following safety and inspection procedures" as a CTE standard for welding students. When students do this, they are also "analyzing and evaluating complex texts with supportive explanations to generate connections to real-life situations and other texts" (see **www.doe.state.la.us/lde/uploads/2909.pdf**). We found that 18 of the 30 states in Group A had cross-walked their academic standards to their CTE courses in this way (see table).

Alignment of Secondary CTE Standards System with Postsecondary Technical Standards

Twelve of the 30 states in Group A reported that they have a statewide postsecondary technical standards system in addition to their secondary standards system. Of these 12 states, 10 had aligned the two systems (see table). The remaining two (Kentucky and Nebraska) both reported that they are working toward this goal. Two other states (Delaware and Utah) reported that they had aligned secondary CTE standards in some program areas with relevant bachelor's degree programs. Finally, two states (Florida and Ohio) make no distinction between secondary and postsecondary standards—they are simply all CTE standards.

Ensuring that CTE Standards are Reflected in Practice

We asked our contacts how the state made sure that the standards were reflected in practice. The officials could have more than one answer. The most common response across all state groups (n = 19) was that assessment was or was slated to be the primary way that states would make sure that the standards indeed guided lo-

The current system of many different CTE standards systems across the states is very inefficient. We believe that "standardizing the standards" could have advantages. But the reality is that the states have invested time and money in developing their systems to meet their needs and contexts. Our recommendation to USDE/OVAE during these early years of Perkins IV is for the federal government to monitor the states and help them collect valid and reliable data.

cal practice. The table shows the 11 states from group A that used assessment.

Of the total 19 states, 10 states were using assessments at the time of our data collection (Connecticut, Kentucky, Louisiana, Massachusetts, Michigan, North Carolina, New York, Ohio, Utah and West Virginia). These assessments varied widely from end-of-program assessments (Kentucky) to end-of-course assessments (Utah), from online assessments (West Virginia) to hands-on demonstrations (New York), and from state-developed exams (Utah) to state-specific vendor-developed exams (Connecticut). The rest of the 19 (the District of Columbia, Florida, Hawaii, Maryland, Maine, Oklahoma, Pennsylvania, Rhode Island and Vermont) planned to include assessment as part of their standards system but had not done so at the time of the interview. Professional development and site visits were the next most frequently mentioned ways of ensuring that the standards were implemented in practice.

As can be seen from the table, four states (Louisiana, Mississippi, North Carolina and Ohio) seem to be the farthest along in their development of a CTE standards system that includes the elements that are important to meeting Perkins IV requirements: (a) ongoing categorical state CTE funding, (b) secondary academic and postsecondary technical standards integrated with secondary CTE standards and programs, and (c) the use of CTE technical assessment measures. Three other states came close to being in every column, but missed by one: Texas does not require CTE student assessments, and Oklahoma and Utah have not cross-walked their academic standards onto CTE.

Conclusions

We concluded that the development of state secondary CTE standards systems remains a work in progress. Most states have completed or nearly completed their standards systems. The findings suggest that there are challenges ahead as states implement Perkins IV. For example, few states have cross-walked their academic standards onto CTE programs, and likewise, only a few states use technical skill assessments to measure student technical proficiency gained from CTE course-taking. We assume that the number of states responding to these mandates will grow, but incentives might be required in order to motivate states to move away from approaches they might have undertaken before the details of Perkins IV were available.

A major conclusion of this study is that the current system of many different CTE standards systems across the states is very inefficient. We believe that "standardizing the standards" could have advantages. But the reality is that the states have invested time and money in developing their systems to meet their needs and contexts. Our recommendation to USDE/OVAE during these early years of Perkins IV is for the federal government to monitor the states and help them collect valid and reliable data. Next steps can be determined based on those findings. In short, there are many challenges to creating a system of secondary CTE that allows for easy comparison of outcomes by state. T

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In Part 2, which will appear in the February issue of *Techniques*, we report on our interviews with CTE teachers in states with well-developed standards systems. We asked them whether having CTE standards has changed how they teach. The results show that these teachers welcomed CTE standards and the added credibility that the standards conferred on their programs.

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**

Thank you!

Thank you to everyone who participated at the 2008 ACTE Annual Convention and Career Tech Expo! Please visit www.acteonline.org to see some of the highlights from this year's event.

February is CTE Month

Career and Technical Education (CTE) Month is just one month away! It kicks off on February 4 with the annual National Shadow Day and will conclude with National Entrepreneurship Week, which runs from February 23–March 1. Both activities are academically motivating and designed to give students a much closer look at their chosen career field. Those who wish to participate are encouraged to begin planning early and check out **www.jobshadow.org** and **www.entre-ed.org** for further details. As you plan your CTE Month activities, don't forget to order your exclusive CTE month merchandise. These quality gifts are good handouts for students, teachers, parents and community members. Check it out at **www.imprintmall.com/careertech**. Order today to ensure you receive your merchandise on time! ACTE has a list of other ideas and opportunities for schools to get involved on our Web site at **www.acteonline.org/content.aspx?id=2020**. As you celebrate CTE Month, please send information about your activities to Sabrina Kidwai at skidwai@acteonline.org. ACTE will publish these events on the CTE Month Web site. If members have questions about CTE Month or need help promoting events, please contact Sabrina Kidwai.

National Policy Seminar

Register now for the 2009 National Policy Seminar (NPS) in Washington, D.C., March 9-11; it will be held at the Crystal Gateway Marriott in Arlington, Virginia. At the event you will have the opportunity to let your voice be hard about the future of your programs.

MEET one-on-one with lawmakers and insiders who will shape the future of your programs.

MAKE informed decisions to safeguard and build your CTE programs.

IMPROVE the long-range outlook for your programs through information you can only get at this major policy event.

LEARN proven advocacy skills to effectively work with your local, state and federal decision makers.

CONNECT with a supportive network of hundreds of other committed education leaders, policymakers and business people who believe in the future of CTE. More information can be found on ACTE's Web site at **www.acteonline.org/content.aspx?id=238**.

Policy Watch Blog: CTE in the New Administration

The Career and Technical Education Policy Watch blog, written by ACTE's Public Policy Department, recently covered education's role—or lack thereof—in the 2008 U.S. elections. With the start of a new Administration, the policy bloggers will bring you the inside scoop on the new government and its role in CTE. In addition, the CTE Policy Watch blog shows you how ACTE supports CTE and provides advocacy tips and news analysis. Read the blog at **www.ctepolicywatch.edublogs.org.**

ACTE Releases Issue Brief: Energy Sustainability

This Issue Brief explores the growing role that CTE programs play in efforts to increase energy and environmental sustainability. CTE offers early exposure to students regarding sustainable energy career options through curriculum integration, provides the cutting edge training necessary to ensure future employees meet workforce pipeline needs, and sets an example through state-of-the-art green buildings that become part of the curriculum. You can download a

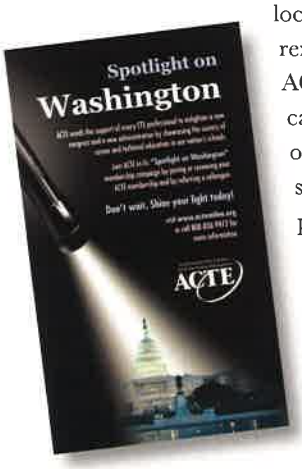
copy from ACTE's Web site at **www.acteonline.org/content.aspx?id=264**, or purchase a full color version in the online ACTE store or order by calling 800-826-9972.

PSA Contest

Congratulations to the winners of the 2009 CTE Month PSA Contest! "Beyond a Textbook," submitted by Yanina Gonzalez, Adrian Scarborough, Joseph Walsh and Philip Wilmut of Birdville Media Tech at Shannon Education Center was the winning entry. Second place was awarded to Centennial High School's Yevgeniya Kozochkina with "Endless Possibilities." To watch the winning videos visit **www.acteonline.org/content.aspx?id=264**. Thank you to everyone who participated in the 2009 CTE Month PSA Contest.

Spotlight on Washington, D.C.

New Administration, new Congress, new opportunities for CTE! Be part of a large movement of CTE professionals who are making a difference in Washington, and throughout the country, by ensuring that CTE issues are being addressed on Capitol Hill and beyond. This year is an excellent time to advance CTE in Washington, your state and your local community. By renewing or joining ACTE today, you can take advantage of ACTE's member services. They provide you with the resources that guide you to be well informed and well prepared to help advance CTE programs throughout the country. When you are part of ACTE, you are part of an association of more than 29,000 professionals like you. ACTE works on your behalf to "Spotlight CTE in Washington" and beyond. Take a few minutes to demonstrate your commitment to CTE by joining or renewing your membership to ACTE. To learn more about ACTE, ACTE membership or to join/renew online, visit **www.acteonline.org** or call 800-826-9972.



Shape the Conversation with ACTE Forums

ACTE is replacing its external Communities of Practice with new forums that will help you more easily take part in the CTE conversation. Visit the forums on **www.acteonline.org/forum.aspx**, pick a particular forum that interests you, and start engaging with your colleagues. Online forums are a great way to share, teach and learn from each other. And, if you are ready to lead, you can start and moderate a forum about your area of expertise! Please contact Catherine Imperatore at cimperatore@acteonline.org to learn more about the ACTE forums.

Join CTE Professionals on LinkedIn

With LinkedIn, the free social networking site for professionals, you can create a network of trusted CTE professionals, expanding the people you can connect with when job searching, filling positions and creating partnerships with schools, companies and organizations. To join ACTE's LinkedIn group, visit **www.linkedin.com** and search for ACTE under Groups.

Job Bank

ACTE will be revamping the Job Bank page linked to the ACTE Web site. We will be adding more job openings to the site and, each month, we will focus on one of our 12 Divisions. In addition to our CTE job listings, we will add opportunities that may be of interest to your students to help them jump-start their own careers. We will kick off January by featuring opportunities in the Administration Division.

Environmental Science Technician

PHOTO COURTESY OF PAMLICO COMMUNITY COLLEGE

ENVIRONMENTAL SCIENCE TECHNICIANS PERFORM ENVIRONMENTAL ASSESSMENTS, INVESTIGATE SOURCES OF POLLUTION, AND COLLECT ENVIRONMENTAL SAMPLES THAT MAY INCLUDE GASES, SOIL, WATER AND OTHER MATERIALS. They may work under the direction of a scientist or an environmental specialist, and other activities might include regulatory compliance audits.

The Workplace

Environmental science technicians work in the laboratory and in the field for employers that include federal and state government agencies, architectural and engineering firms, and scientific and technical consultants. They might also be employed by electric power companies or the petroleum and natural gas industries.

Educational Requirements

Most environmental science technician positions require an associate degree or a certificate, although some high school graduates may begin as trainees and work while earning a two-year postsecondary degree. Many technical and community colleges offer associate degrees in environmental science technology, and a number of these programs are designed to facilitate the transfer to bachelor's degree programs at colleges or universities.

SCHOOL SPOTLIGHT

Pamlico Community College

PAMLICO COMMUNITY COLLEGE (PCC) BEGAN AS AN INDUSTRIAL EDUCATION CENTER IN 1962, BUT IN 1971 IT GAINED INITIAL ACCREDITATION by the Southern Association of Colleges and Schools and became Pamlico Technical College. Today, PCC is a fully accredited two-year community college with programs in disciplines that range from computer technology to allied health. Through a contract program with East Carolina University, PCC students in appropriate programs are able to transfer on to a four-year education.

PCC is the smallest community college in North Carolina, but it recently signed what is being called an historic agreement with one of the largest universities in the state. When North Carolina State University signed its first ever articulation agreement in environmental science technology with PCC, PCC Environmental Science Program Director Carol Phillips noted, "This agreement significantly increases both education and employment opportunities for our students. Not just communities in our area, which is an environmentally sensitive area, but the whole world needs more environmental professionals."

Environmental science technology students at PCC study courses that include environmental biology, chemistry, organic and biochemistry, microbiology, environmental health and safety, and environmental law. The coursework includes general education classes as well as computer applications. Students learn about business presentations and spreadsheets along with the knowledge they acquire about waste management, water

Earnings

According to the U.S. Department of Labor's *Occupational Outlook Handbook*, earnings for environmental science technicians vary from state to state and among industries, but the median annual income is $38,090, with the higher income earners at around $60,700.

Job Outlook

The U.S. Department of Labor expects employment of environmental science technicians to grow much faster than the average for other jobs, with 80 percent of the growth in professional, scientific and technical services. As the need for environmental monitoring, management and regulatory compliance increases, the need for environmental science technicians will grow as well. T

Explore More

Here are some places to turn to learn more about training and education for a career in environmental science technology.

The American Academy of Sciences sponsors an international conference on environmental science and technology. www.aasci.org

The American Chemical Society (www.acs.org) has a journal devoted to environmental science and technology. http://pubs.acs.org/journals/esthag/index.html

The Institute of Environmental Sciences and Technology. www.iest.org

U.S. Department of Energy, Office of Environmental Management. www.em.doe.gov/pages/emhome.aspx

U.S. Environmental Protection Agency, EPA for Students and Educators. www.epa.gov/epahome/students.htm

quality and air quality.

The curriculum is designed to prepare students for employment in environmental testing, consulting and other related industries. Students learn to do environmental assessments, environmental sample collection and perform regulatory compliance audits. The summer session includes cooperative work experience as well as the study of industrial safety.

Upon their graduation, students have available job opportunities that include laboratory technician, field sampling technician, pollution control technician and industrial environmental compliance officer. With additional training, other careers become available, among them environmental law enforcement, wildlife and marine fisheries officer, waste management specialist and sanitarian.

PHOTO COURTESY OF PAMLICO COMMUNITY COLLEGE

The environmental management concentration is designed to prepare students for employment in a rural agricultural region with sensitive environmental resources, such as Pamlico County. Situated on a peninsula marking the center of North Carolina's Lower Coastal Plain, Pamlico County is mostly bordered by water on three sides. The habitats throughout the area include open sound water, marshlands, and mixed pine and hardwood forests. Therefore, an emphasis is placed on agricultural waste management, watersheds, related pathogens and contaminants, and resource conservation.

According to Phillips, graduates of the PCC environmental science technology program have found careers in water treatment facilities and health departments. One graduate is an environmental protection agent at Marine Corps Air Station at Cherry Point, North Carolina. "We're proud of our program and especially proud of the difference our graduates are making for our environment," she adds. T

For more information about the environmental science technology program at Pamlico Community College, visit ***www.pamlicocc.edu.***

e-connect

CTE PROFESSIONALS KNOW THAT WORKFORCE DEVELOPMENT WILL PLAY A MAJOR ROLE IN STABILIZING THE U.S. ECONOMY. In these trying economic times, you can easily keep up with workforce development news and trends with the following online resources.

Workforce Developments

Blog

http://workforcedev.typepad.com/workforcedev/

The 411: If you are looking for a workforce development job, have a job to post or want to find out the latest trends, then Workforce Developments blog is the place to find all this information. Bronwyn Mauldin is a consultant who writes about a variety of topics that deal with workforce development, including future workforce, policy, training and education, outcomes and evaluations, and grants. You can receive updates on the blog through the RSS feed or have a message sent directly to your inbox.

Skills2Compete

YouTube channel

www.youtube.com/Skills2Compete

The 411: The Skills2Compete campaign seeks a guarantee of two years of post-secondary education or training for each American to ensure a skilled workforce. Skills2Compete has its own video channel on YouTube to promote the campaign and educate viewers, with excerpts from the campaign's launch Webinar, the "Workforce Development Needs a New Bumper Sticker" video, and a presentation on middle-skill jobs.

ICW Workforce and Education Newsletter

E-newsletter

www.uschamber.com/icw/publications/newsletter

The 411: This monthly e-newsletter, produced by the U.S. Chamber of Commerce's Institute for a Competitive Workforce (ICW), covers workforce development issues such as China's labor market, myths about workers with disabilities, adult learning performance across states, and No Child Left Behind. In addition, the e-newsletter links to recent workforce publications and highlights upcoming ICW events.

GasBuddy

Information Web site

www.gasbuddy.com/

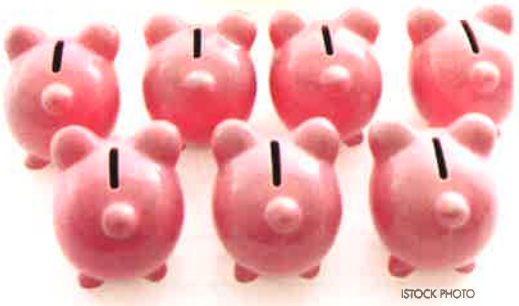
The 411: If you are trying to find the cheapest gas in town, then check out this site. When you enter your zip code, it provides you with a list of all the local gas stations and prices from lowest to highest. The site collects information from more than 750,000 volunteer "spotters" that keep track of prices on a daily basis. It also shows how prices have changed over time and it can send mobile updates to your cell phone. On the front page, it has a heat map of the U.S. that displays the highest and lowest gas prices around the country. T

ACTE Resources

Workforce development is beginning at an early age in Whyville, the leading education-focused virtual world for eight- to 15-year-olds. Your company or industry can reach the future workforce by joining ACTE in the Whyville "My Future" career pavilion. Learn more by contacting Catherine Imperatore at cimperatore@acteonline.org.

How Valuable is CTE in this Economy

By Norman Halls



ISTOCK PHOTO

VOCATIONAL EDUCATION AS WE HAVE KNOWN IT FROM THE SMITH-HUGHES ACT AND PERKINS WAS VERY SUCCESSFUL IN ITS HEYDAY. But times and technology have changed drastically and often career and technical education (CTE) schools have not changed with it. This country has lost thousands of jobs offshore to countries that have taken advantage of the United States' lack of support for CTE. An Embassy of the People's Republic of China report noted that, "Developing vocational education is an important part of educational undertaking of the state and an important way to promote economic and social development and employment."

Who benefits from CTE? The answer: every person and business. In 1984 industrialist Peter Elliman reported on critical issues in vocational education. He interviewed a vice president and general manager of Lucas Industries and noted, "when Lucas evaluates a country for the potential location of a new plant, it examines such important elements as labor unions and labor costs, trade regulations, taxes, inflation, the strength of the currency over time, the availability and quality of technical schools and universities, the skill and productivity levels of the workforce, attitudes toward work, the standard of living and the cultural environment."

What the industrialist said in 1984 is true today: companies can keep jumping around the world. As Elliman commented, Lucas Industries looks for quality schools and universities, although it seems that the company is not willing to support the educational programs. This is true with many businesses where the local school system is loosing its tax base. But if business and industry stays on the move, what will happen to the consumer? They will not be able to buy the goods produced by any company in the United States.

We find that most educators are what we call "compounded educators of education." Most teachers in elementary, middle, high school or higher education have never held a job other than teaching at some level. Back in the early 1970s Sidney Marland developed the concept of career education to remove the stigma of academic and occupational learning programs. The thought was to have all learners understand careers and give them rewarding lives. Both vocational and academic teachers were against the concept. Today we must be realistic about who the educator's consumers are—students and businesses. If the student is not able to be employed and trained, the business segment of the equation will not be paying property taxes to support the school system.

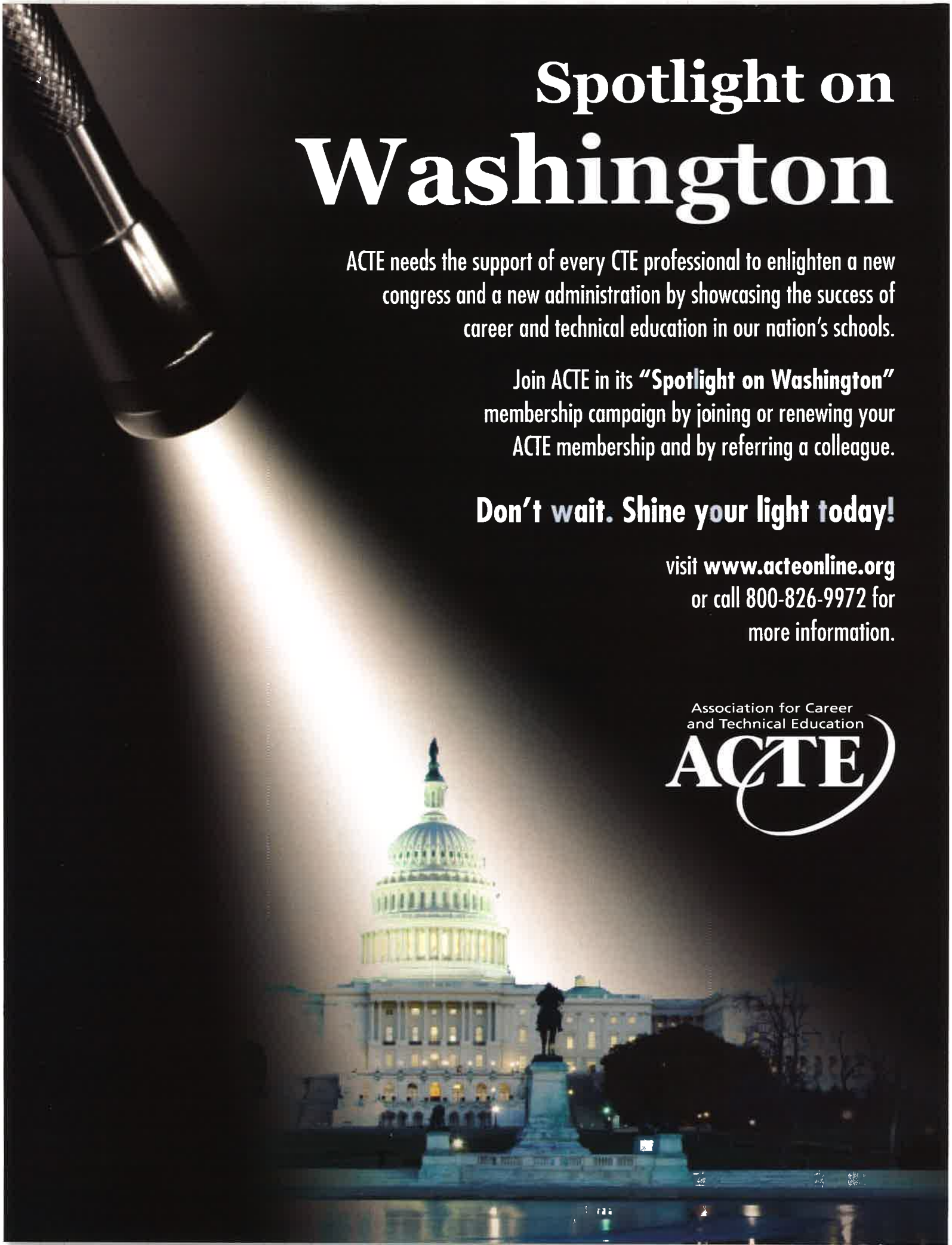
What needs to be done? Educators must have a better understanding of the whole picture. They should not live in a vacuum that inhibits student learning. Also, those who work in business and industry must be allowed to teach in the school system, with or without having a degree, to bring in the practical aspects of the business community. Finally, business and industry must bring in equipment that would give students the knowledge needed for the local business community. T

"DEVELOPING VOCATIONAL EDUCATION IS AN IMPORTANT PART OF EDUCATIONAL UNDERTAKING OF THE STATE AND AN IMPORTANT WAY TO PROMOTE ECONOMIC AND SOCIAL DEVELOPMENT AND EMPLOYMENT," NOTES A REPORT BY THE PEOPLE'S REPUBLIC OF CHINA.

Norman Halls

is an educator with 35 years of experience. He is a consultant in business and industry strategic planning and can be contacted at madsengroup@sbcglobal.net.

ACTE Interested in exploring this topic further? Discuss it with your colleagues on the ACTE forums at **www.acteonline.org/forum.aspx.**


Spotlight on
Washington
ACTE needs the support of every CTE professional to enlighten a new congress and a new administration by showcasing the success of career and technical education in our nation's schools.
Join ACTE in its "Spotlight on Washington" membership campaign by joining or renewing your ACTE membership and by referring a colleague.
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