

FORUM BRIEF

Case Study of Center for Innovation in Technological Education (CITE) and Nashville, TN Evolution of Case-Based Learning and High School Redesign

A Forum hosted in partnership with the American Association of Community Colleges
— November 17, 2008

Overview

This was the second in a series of forums showcasing the work of the Advanced Technological Education (ATE) program, created by the U.S. Congress in 1992 in an effort to boost the nation's supply of highly skilled technicians in math-, science-, and engineering-intensive industries. Funded and overseen by the National Science Foundation (NSF), ATE's thirty centers—located in every part of the country— and various programs coordinate efforts among high school and community college educators, business leaders, and government officials to recruit and train workers for rewarding careers in growing sectors of the economy, such as biotechnology, chemical technology, civil and construction technology, and electronics.

This forum featured a long-term high school improvement initiative directed by the Nashville (TN) school district (Metro Nashville Public School, MNPS), the Center for Innovation in Technological Education (CITE) [The ATE Center], the mayor's office, business leaders, and other partners, with an emphasis on career academies, internship programs, and other opportunities for students to engage in relevant, hands-on learning.

Sydney Rogers, **Executive Director of Alignment Nashville** and former dean and vice-president of Nashville State Community College, began by explaining that instead of giving four separate talks, she and the other panelists decided on a more conversational style of presentation, with her serving as moderator. To begin, though, she spent a few minutes describing the history of Nashville's ATE initiative.

Presenters

Starr Herrman
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The work began in 1994 with the realization that the region's growing information technology (IT) sector would require much larger numbers of well-trained workers than the local colleges and universities were graduating, or had the capacity to train. As dean of engineering and business technologies at Nashville State Community College (NSCC), Rogers applied to the National Science Foundation (NSF) for an ATE grant designed to familiarize NSCC instructors and high school teachers with the local IT industry, through workshops, courses, and externships. Following up on that initiative, Rogers and others launched a second ATE-supported project, called SEATEC (South East Advanced Technological Education Consortium), which developed IT-related case studies to use in professional development work with teachers, particularly at career academies. Further, NSCC created a Tech Prep/IT academy on its campus, with help from a federal Perkins grant. NSCC then won additional NSF funding, enabling it to create CITE, an ATE regional planning center that focuses on teacher professional development for information technology fields. In 2003, CITE led efforts to create three new IT career academies, one in an urban neighborhood in Nashville, one in the suburbs, and one in a rural area, close to one of the region's major employers, a Saturn automobile plant. Most recently, CITE has supported Metro Nashville Public School's effort to design wall-to-wall academies at all the district's high schools.

What lessons have been learned, asked Rogers, after several years working to develop these three diverse high school career academies?

David McNeel, **Consultant to the** Metro Nashville Public Schools and former director of CITE, said that the lessons have been somewhat different among the three schools. At Stratford (the urban school), the introduction of the career academy has prompted a major change in the community's attitude toward the high school—once a campus to be avoided, Stratford is now seen as a real option for motivated, ambitious students. At the suburban Oak Ridge High School, the academy is seen as a successful effort to meet students' varied needs, providing them with multiple academic options. And at rural Springhill High School, the IT academy has brought coherence to the curriculum, prompting teachers in all content areas to work much more closely together than ever before.

Turning to Starr Herman, Nashville's **Director of Smaller Learning Communities**, Rogers asked what elements have been most critical to the academies' success to date? First, said Herman, has to be the emphasis on professional development, especially case-based learning, which has helped teachers to link their own instruction much more closely to the real-world challenges of work in the IT sector. Second is the requirement of core IT classes for all students. In order to build trust among employers, said Herman, it's vital to show them that all of the academies' graduates have a basic set of useful IT skills that they can bring to the workplace right away. And third is the emphasis on making sure that every student understands how important it will be to continue on to postsecondary education. Their internships, especially, should show them that in order to succeed in the working world; they will need additional skills, beyond the fundamentals that they develop in high school.

Rogers noted that problem-based case learning (whereby teachers discuss how they would respond to problems drawn from real-world situations in classrooms and workplaces) has been central to the development of Nashville's career academies. Over the years, added McNeel, CITE has learned a lot about how best to provide case-based professional development. Most important, teachers need regular and ongoing opportunities for discussion—else, they won't really grasp the ways in which the cases might relate to their own work.

Nicholas Holland, **President and CEO of** Centresource Interactive Strategies, offered some thoughts on the career academies from a business perspective. A long-time volunteer at Stratford High School, his biggest surprise has been the lack of resources devoted to the program. Instead of a full-fledged school-within-a-school, Stratford's IT academy has been limited to a loose collection of elective classes. The ambition has been to provide adult-level training, such as an advanced

certification course in IT, but that's not realistic, he added, given that the school can't afford to offer a complete course of study. Further, because Stratford's teachers don't have a lot of recent experience in the business world, they can't share certain important real-world insights with their students. The teachers need professional development, however the school system is unable currently to offer it for free. That's a big mistake, Holland argued. In order to stay current, teachers ought to receive training along the lines of what Microsoft offers its workers, with lots of free on-line modules. In his time as a volunteer at Stratford and through hosting student interns at his company, Holland has been amazed to see how critical it is to also teach students various soft skills, such as how to dress for an interview or how to talk to coworkers. Holland believes that in order to develop the baseline maturity that employers demand, students need to have a lot of opportunities for job shadowing and mentoring.

Herman picked up on the topic of professional development, noting that after forty years in education, she knows that teachers tend to spend their whole lives in school. Very few know much about any other workplace. If teachers are to make connections between coursework and the real world of IT, school and district leadership has to give them strong, consistent messages about the need to do so. Teachers themselves will have to learn to use technology in their own work, and they will have to bring experts from outside the school to help them show students how they can apply what they study. Nashville's teachers understand that they need to teach more than just school subjects, added Herman. They're seeing plum jobs go to students that are ranked #100 in the graduating class with excellent IT skills, and not to top-ranked students who lack those skills. Teachers often struggle because they don't yet have the professional development or support they need to make their own teaching more relevant.

Holland noted that people are always asking why American high schools can't be more like the European model of apprenticeship. But, he believes from a business perspective, it is important to provide an interdisciplinary curriculum, and employers recognize that if they can hire smart, mature people, they can give them a lot of the necessary training on the job. If the schools want to use business partners effectively, they should look to them to help with the development of soft skills, to sponsor field trips to various workplaces, and to sponsor job-shadowing and internships. Holland indicated that "the value that employers bring to the table has to do with showing students what people do on the job, rather than bringing business ideas to the classroom."

In 2005, said Rogers, various local players in high school reform were brought together under the banner of Alignment Nashville, which is run out of the mayor's office. Created to bring together community organizations and resources into alignment to coordinate support for a positive impact of Nashville's youth, Alignment Nashville is supporting the secondary school reform of Metro Nashville Public Schools (MNPS). A new, 5-year, \$6.6 million grant from the federal Small Learning Communities initiative, MNPS is trying to expand upon the career academy model developed over the years. The plan is to create a single track for all of the district's high school students, blending college and career preparation. Further, in order to confront student disengagement, the district intends to create 9th grade academies and career academies in all of its twelve high schools, beginning in 2009. In addition to leveraging the resources and support from Alignment Nashville, Rogers pointed out that Nashville's new mayor is strongly committed to the career academy model and plans to go ahead with its expansion even if his office is forced to take over the schools, which might happen in the near future.

What, asked Rogers of her co-panelists, should be the priorities as Nashville moves forward with this "wall-to-wall" investment in career academies?

Herman recommended using funds from the Small Learning Community grant to ramp up the district's professional development in the areas of formative assessment, differentiated instruction, and hands-on learning. McNeel added that he would prioritize efforts to promote inter-disciplinary collaboration, too—in the three model career academy programs, faculty have come to reject the

silo mentality that used to pervade their schools. Also, he noted, the district has had a lot of success with partnership councils, and it should continue bringing schools, colleges, business leaders, and others together to identify workforce needs and other priorities. Holland added that a recent study by the Chamber of Commerce provides useful data on coming retirements and labor needs, which will continue to rise in the IT sector. For his part, said Holland, he would recommend a renewed effort to engage the business community in reforms, encouraging them to put their “boots on the ground” in the form of presentations at schools and internships for students.

Highlights from the Question and Answer Session

The first question addressed the impact of Nashville’s career academy model. For example, what effects are the schools having on students’ long-term earnings? McNeel pointed out that the research base in this area is very thin, and Nashville hasn’t had the resources needed to mount a serious long-term study—that is one goal of Alignment Nashville, though, which hopes that by bringing together various players it will be able to sponsor such research. However, recent research by MDRC ([see recent AYPF event on Career Academies](#)) does provide compelling evidence that career academies have lower dropout rates than comparable schools, and graduates see better earnings several years after school. Added Rogers, the evaluations conducted by CITE, while very preliminary, are encouraging. For example, in a recent survey of twenty local employers, all respondents said that they were more satisfied with the performance of student interns from the career academies than with the performance of other students.

Another questioner asked whether Nashville’s work will be sustainable if it no longer receives grant funding. Herman said that in implementing the Smaller Learning Communities grants, sustainability has been a focus from day one. First, the district has integrated its Title I funding into the initiative, and—more important—the professional development program is creating a demand for hands-on professional learning, and that demand is likely to continue, whether supported by a grant or not.

A third question focused on the challenges involved in and the impact of creating professional learning communities among teachers. Herman said that the Small Learning Communities grant includes funding for teacher development—this year, the schools began using those funds to implement a “late arrival time,” giving teachers regular opportunities for common planning, and to provide two consultants to work with teacher teams at eight schools. Holland said that in the last few years, many teachers have expressed an interest in doing an internship, summer job, or part-time work in local IT businesses, in order to develop their own skills and knowledge of the sector. However, those teachers don’t currently have many skills that they can offer employers, and employers aren’t usually willing to pay their way. The ideal would be for local industries to offer staff to assist in teachers’ professional development, but it’s not clear who would pick up the tab.

A final question addressed the need to reach down into the middle grades in order to get students into the career academy pipeline. Rogers indicated that Alignment Nashville is advocating for schools to begin to provide young children with contact to the wider city and to expose them to various jobs and industries in middle school. Herman pointed out that the new citywide adoption of career academies will put kids into the pipeline automatically, taking some pressure off of the middle schools to do so. Also, she said, the district recently piloted a new summer bridge program, which offers at-risk students three weeks of intensive math and literacy instruction and team-building activities. Holland concluded by arguing that many kids, even young kids, are very interested to learn about real-world applications of math, science, and other subjects. But in order to get more kids excited about career academies, the district needs to do better at marketing those programs, showing students that school subjects do in fact translate into the real world.

BIOGRAPHIES:

Starr Herrman was born in Nashville, TN and attended Nashville Public Schools. She graduated from Belmont College with B.S. degree in Business Administration and teaching certification for 9-12. She received a master's degree from the University of Tennessee, Knoxville in Industrial/Technical/Vocational Education. She completed her +45 from the University of Northern Colorado and Tennessee State University.

From 1969 to 1997, Starr taught high school for Metro Nashville Public Schools (MNPS) at Hume Fogg and Glencliff High Schools respectively. From 1997-2002, She was vocational program assistant at Glencliff High. From 2002-2006 Starr worked in the MNPS IT department as a technology teacher resource manager, In November, 2006, she began her current position as Director of Smaller Learning Communities for Metro Nashville Public Schools. Under her leadership, the district has implemented freshman academies, advisories and the beginnings of the career academy programs in 12 high schools.

Starr has taught college classes through the years at Belmont University, Tennessee State University, and The University of Tennessee, Nashville.

At Glencliff High School, Starr was a charter member and chairperson of the site based planning committee, the High Schools That Work coordinator, School to Career coordinator, liaison with the PENCIL Foundation and the Chamber of Commerce, Career Academy Director, and internship coordinator among other duties. She was also instrumental in developing and implementing school to career initiatives for the school system.

Starr has been a trainer and consultant with Ford Motor Company, the state department of Education, Nashville State Technical Institute, several counties and cities in Tennessee and in other parts of the country in the areas of SCANS Skills, quality management tools, career academies and school to career initiatives. She has been published by a national tech prep publication and has written a career academy manual for the State Department of Education. Starr implemented and coordinated the career academy programs that were so successful at Glencliff High School.

Sydney Rogers currently serves as the Executive Director of Alignment Nashville, a 501c3 organization founded by the business community and dedicated to aligning the work of not-for-profit community organizations around public education. In this role, Sydney works closely with all sectors of the community, including government, education, and business. She and Alignment Nashville have played a major role in the development of the current high school redesign project and the implementation of career academies. In 2008 Alignment Nashville moved to the Mayor's office to collaborate with him on education reform.

Sydney has worked most of her life in higher education, having retired from Nashville State Community College in 2005. In her 30 years at the college, she was a classroom teacher, Chair of Information Technology, Dean of Engineering and Business Technologies, Interim Executive Vice President for Academic Affairs, and Vice President for Community and Economic Development.

She has a passion for reform of education to meet the needs of the 21st Century. As an executive at the community college, she developed several statewide and national partnerships that were funded by the National Science Foundation (NSF) and the United States Department of Education. Much of the work focused on effective practice to involve the business community in education reform and on faculty development. She was a participant in several efforts to design high school to college pathways and has served on national visiting committees for NSF centers in Massachusetts, Kentucky, Texas, and Auburn University in Alabama Her presentations and keynote addresses include the National Tech Prep Conference, Southern Automotive Manufacturing Conference, the Advanced Technological Education Conference, the American Association of Community Colleges national conference, Harvard Graduate School of Education Institute, United States House of

Representatives, and the National Academy of Engineering among others.

Nicholas L. Holland is a successful entrepreneur and business leader, with vast experience in the technology and financial sectors. His knowledge and expertise in these industries, coupled with his strong entrepreneurial spirit, have been recognized by a number of business publications and community and industry organizations. His strengths lie in his proven leadership and communication skills, as well as his ability to rapidly frame issues and create solutions.

Mr. Holland is Founder, President, and CEO of *centre{source}*, Inc., a Nashville, TN-based Web Interactive Strategy firm. *centre{source}* is a full-service Interactive firm assisting organizations that view the web as a strategic asset. They provide clients 4 essential services: strategy, planning, execution, and on-going management.

Under Mr. Holland's direction, *centre{source}* has experienced impressive revenue growth, is a leader in its market and has been the recipient of a number of awards, including the *Nashville Business Journal's* "Best in Business" award in the Emerging Business category (2006) and Goldline Research's "10 Most Dependable Web Design Firms in the Central/Southern United States" (2007, 2008). In 2008, the Nashville Chamber of Commerce selected *centre{source}* as a "Future 50", recognizing them as one of the 50 fastest growing companies in the city. The company's client base includes educational and non-profit organizations, e-commerce sites, and small- to large-size businesses from diverse industries.

In 2004, Mr. Holland was recognized as one of Tennessee's "30 under 30" leaders by *Business Tennessee*, and in 2006 he received the Young Entrepreneur Award from the *Nashville Business Journal*. He also received a Tech 20 Award from the Nashville Technology Council for being one of the city's 20 most influential technology business leaders. In 2007, the Nashville Chamber of Commerce awarded Mr. Holland the prestigious "Nashville Emerging Leader Award" in Technology.

Mr. Holland is an accomplished speaker and expert commentator on technology trends. Active in community and business organizations, Mr. Holland serves on the Boards of the Better Business Bureau, Nashville Technology Council, Stratford IT Academy, and Nashville OIC. He is an active member of the Nashville Area Chamber of Commerce, Junior Achievement, and the Junior Chamber of Commerce.

Mr. Holland graduated from Tulane University with a double major in Finance and Information Systems. At Tulane, he received the Dean's Selection for Most Outstanding Student and was the Student Body President of the A.B. Freeman School of Business.

David McNeel is Co-Principal Investigator and consultant to ATE projects at Bellevue Community College and the University of Massachusetts Boston, past Director of CITE, an ATE Regional Center of Excellence in Nashville, TN, and consultant to Metropolitan Nashville Public Schools' High School Redesign initiative. In addition to his leadership experience and background in the ATE community, he has over 20 years of industry leadership experience in information technology, group architecture, and business systems operations in the United States and Europe. With advanced degrees in Applied Mathematics, he combines a deep understanding of industry needs with secondary and post-secondary programs and course offerings.

Resources:

- **Forum Powerpoint Presentation**
- **CSS Impact Booklet**

- Developmental Journeys Moving Problem-Based Case Learning to Real-Time: Implications for Teacher Learning and Professional Development; Jacquelyn T. Gray; *Georgia State University, April 2006*
- Metro Nashville Public Schools Small Learning Communities Grant, **Evaluation Report 2008**

Logistics

Maps & Metro Rail

Date: Monday, November 17, 2008

Time: 11:45am – 1:30pm

Location: Rayburn Office House Building, Room 2226

The American Youth Policy Forum (AYPF), a nonprofit, nonpartisan professional development organization based in Washington, DC, provides learning opportunities for policy leaders, practitioners, and researchers working on youth and education issues at the national, state, and local levels.

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