

ATEA

American Technical Education Association

Journal

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ATEA

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From The Executive Director



ATEA President Rich Wagner Ph.D. received a standing ovation lead by Paul Young, Ph.D. incoming president 2015-2018, ATEA Annual meeting April 17, 2015

We have had a full year of quality professional development programming. This edition reports on the general sessions at the 2015 national conference, shares the testimonials of former Board members of the role ATEA has had on their careers and remembers Odin Stutrud, ATEA Executive Director 1971-83. We are proudly recognizing the ATEA national award winners. There is the reviewed academic articles section edited by Dr. Nasser Razek, University of Dayton. We finish with invitations to upcoming professional development opportunities at the Region 5 Conference October 8-9 in Sioux Falls, South Dakota; Region 3 October 25-27 in Kenosha, Wisconsin and the back cover has the invitation to the national conference March 9-11, 2016 at Orange Beach, Alabama, hosted the Alabama Community College System, co-chairs Chancellor Mark Heinrich and Dean Bethany Clem Shockney, Calhoun Community College, Decatur, Tanner and Huntsville, Alabama.

The 2015 national conference “Innovation through Continuous Improvement of Technical Education” identified the necessity of flexibility and speed in implementing new technology and curriculum and at same time minimizing risk through national certifications such as the National Coalition Certifications Centers NC3 that provide ongoing access to experts and peers across the nation.

Plenary Session 1 records the benefits of Centers of Excellence both state funded and Department of Labor TAACCCT grants. They range from the discovery of sector supply chains, such as aerospace in Idaho leading to a TAACCCT grant, to the 10 Centers of Excellence in industry sectors in Washington State that maximize the educational resources of the state for each sector. Plenary Session 2 reports on multiple benefits to

students and faculty of Round 1 TAACCCT grants.

Ivy Tech Community College President Tom Snyder’s panel “Innovative Partnerships” featured representatives from Cummins and Fiat Chrysler who identified the new roles of educators are translator between industry and education as well as listener, convener, facilitator and provider of soft skill courses. Indiana Fifth District Congresswoman Susan Brooks’ keynote, “Securing the Middle Class,” spoke to technical education making a difference in individual’s lives and in the economy. She provided insights into the Reauthorization of the Higher Education Act, Work Force Innovation and Opportunity Act (WIOA) and Perkins Grant funding.

All presenters spoke about the need to connect with middle and high school students. The conference sessions identified multiple ways to advance technical education and I encourage you to read the presentations transcripts and summaries. The website www.ateaonline.org also has podcasts of the sessions for your use.

The *Journal* reports on the changes in the Board of Trustees. We welcome President Paul Young Ph.D. and thank Rich Wagner Ph.D. for his leadership. Tom Snyder, President of Ivy Tech Community College joins the Executive Committee and we welcome new Board of Trustee, Sue. G. Smith, Vice President for Technology and Applied Sciences, Ivy Tech Community College. Thank you to the Board members who have renewed through a reappointment or re-election.

And, thank you for your support of ATEA and technical education

Dr. Sandra Krebsbach

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Publications Guidelines

Publication guidelines for articles can be obtained at www.ateaonline.org.

Layout

Shelly Fitterer, Dunwoody College
of Technology—*Journal* layout

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The American Technical Education Association (ATEA) was founded in 1928 and incorporated as a non-profit professional education association in 1960. In 1973 the national headquarters was moved from Delmar, New York to Wahpeton, North Dakota. In 2012 ATEA relocated to the Dunwoody College of Technology, Minneapolis, MN. ATEA is the only autonomous and non-affiliated international association devoted solely to the purposes of postsecondary technical education. ATEA is the leading association for the postsecondary technical educator with emphasis on professional development. Educators and individuals from business and industry come together at conferences to discuss the latest trends and developments in technology. The organization is dedicated to excellence in the quality of postsecondary technical education with emphasis on practical teaching ideas and best practices.

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Region 6: Lin Zhou,
Bates Community and Technical College, Tacoma WA



New ATEA President Paul R. Young, Ph.D.

Dr. Young's experience with growth and expansion will be incorporated in his goals for his presidency of ATEA.

Dr. Paul Young was elected to the President of the American Technical Education Association on April 17, 2015 at the Annual meeting in Indianapolis, Indiana, held in conjunction with the ATEA 53rd national conference on technical education. He served as ATEA Vice President from 2013-2015.

Dr. Young is the President of the Northern Wyoming Community College District beginning in 2010. He came to Wyoming in 2005 as the Executive Dean of Gillette College and Vice President for Institutional Effectiveness. Dr. Young's leadership at Wyoming has been about growth and expansion. At Gillette College he guided building a new 90-acre campus, created a state-of-the-art workforce development program, grew a multi-million dollar endowment, advanced programs in art and culture for the broader community, and established an outreach program. He led strategic planning for the college district in Sheridan, Buffalo and Gillette, and managed the institution's accreditation relationship with the Higher Learning Commission of the North Central Association.

As Northern Wyoming Community College District President, he and Gillette CEO Dr. Mark Englert are working to add the Education and Activity Center, as well as new student housing. In Sheridan, he led the expansion and renovation of the Whitney Academic Center, the Thorne-Rider Campus Center, the Tech Center, the Griffith Memorial Building, the Sheridan College Agri-Park, and the Mars Ag Center. In Buffalo, he worked to move that outreach campus from a basement location under the town's movie theater to the former Clear Creek Elementary School.

Dr. Young was a commissioned officer for 20 years in the United States Navy Reserve, retiring as Commander in 2006. He is a native of Limestone Maine. Prior to coming to Wyoming, he was the Head of Office Information Technology, at Wentworth Institute of Technology in Boston, Massachusetts and before that, Dean of Business at Husson College in Bangor, Maine and faculty at Saint Joseph's College in Standish, Maine.

His education is from Catholic University of America in Washington DC, where he holds a BA, MA and Ph.D. His area of study was history and philosophy. He received a Fulbright Scholarship in 1989-90 to complete his doctoral research in Germany where he witnessed the fall of the Berlin Wall and the opening of Eastern Europe.

He is concurrently President of the Wyoming President's Council. Dr. Young sits on the Sheridan Education and Economic Development Association (SEEDA) board, and Forward Sheridan.

Elected to ATEA Board of Trustees – term 2015-2018

Sue G. Smith Vice President of Technology and Applied Science Programs Ivy Tech Community College



Vice President Smith has 25 years' experience in Ivy Tech Community College both academic and workforce development. She leads a team of deans and associate vice presidents overseeing the entire technical and applied science division with 15,000 students. Vice President Smith has worked nationally and internationally. She worked with Cummins VP's in China to extend standardized training and developed credit and non-credit education options for 7 Cummins international pilot sites. She serves as ambassador to other counties on behalf of Ivy Tech through economic development delegations to UK, Germany, China and Canada. She has extensive experience in developing and/or implementing quality standards in postsecondary education and industry. She is a Six Sigma Green Belt and holds multiple certifications in other related areas. Her degrees are an associate in business from Indiana University, bachelor's degree in Journalism from Indiana University and a Master of Arts in Creative Writing from Antioch, Yellow Springs, Ohio.

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Reappointed for a three year term 2015-2018



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ATEA Finance Operations
Bob Wallace
 Tennessee Technology Center
 Tennessee Board of Regents
 Director of Finance

ATEA Elected Board Members for 2015-2018 term



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Dr. Betty Reynard
 President, Lamar State College Port
 Arthur, Port Arthur, TX



Dr. James Sherrard
 Chair, Nuclear Programs, Three
 Rivers Community and Technical
 College, Norwich, CT

**ATEA Fall Board of Trustee
 Meeting, Oct. 7 Sioux Falls,
 South Dakota, prior to the
 Oct.8-9 Region 5 Conference
 sponsored by Southeast
 Technical Institute,
 "Technical Education Rocks"
 registration online
www.ateasonline.org**

The Role of ATEA in the Careers of Retiring & Resigning Board Members

Dr. Bob Dunker, President Emeritus Western Iowa Tech Community College, Sioux City Iowa

Dr. James Sardin, Retired Mississippi Department of Education Career and Technical Programs

ATEA Board Member, Jane Hildenbrand, Chair of Early Childhood Programs at Ivy Tech Kokomo Indiana

John Zeit Board of Trustee



Dr. James Sardin, Retired Mississippi Department of Education Career and Technical Programs

Dr. Sardin attended his first ATEA Conference in 2006 and became a board member at that conference and been a board member ever since he joined. He joined because he was serving as Associate State Superintendent for the Department of Education, Career and Technical Education.

This office was responsible for the over site of all Vocational and Technical Programs operated by 154 Public School Districts and 15/Community Colleges in Mississippi. As Associate State Superintendent he wanted to connect with other Postsecondary educators across the globe to gain knowledge on how to bridge the gap between K12 and Postsecondary.

Mississippi Department of Education, Career and Technical Education hosted the 2007 National ATEA Conference and the 2011 Conference. Mr. Sardin is retired and working as an Education Consultant for the Office of Career and Technical Education of the Mississippi Department of Education.

ATEA Board Member, Jane Hildenbrand, Chair of Early Childhood Programs at Ivy Tech Kokomo Indiana.

Jane was appointed to the ATEA Board of Trustees in 2009 and has served two terms: 2009-2012 and 2012-2015.

Jane first became aware of ATEA when she was nominated for and won the Outstanding Technical Teacher award in 2003 at both the ATEA regional and national level.

She attended her first national conference in 2005-when it was in Nashville Tennessee. The same year that James King was appointed to the Board of Trustees.

She was appointed to the ATEA National Awards Committee following her program winning at the state and national level at the Indiana Technical Education Awards.

In 2010 Jane Co-chaired the first ATEA conference to be held in Indianapolis. She facilitated the ATEA Board meeting coming to Indianapolis the fall of 2013.

Jane is the Associate Editor of the *ATEA Journal* on Technical Education. She is presently writing an article on the tie of Early Childhood Education to Soft Skills development for employment success.

Dr. Bob Dunker, President Emeritus Western Iowa Tech Community College, Sioux City Iowa

Dear ATEA members,

I have served as a member of the ATEA Board of Trustees for many, many years. It has been an honor and a privilege to help build the ATEA organization from a small fledgling group located in Wahpeton, ND to the nationally recognized leader in post-secondary technical education that is today.

My first teaching job was to teach drafting at Cochise College in Douglas AZ, in 1973. As a young rookie, right out of college, I started looking for an organization that would connect me with other post-secondary educators. I found ATEA and joined, and have maintained that membership for 42 years. Over the years the Journal and conferences provided the opportunity for me to learn and network, building my knowledge and skills. I spent my entire educational career in teaching and the administration of post-secondary technical education with the last 20 years as President of Western Iowa Tech Community College. I always promoted ATEA to my faculty and encouraged them to become involved in the organization. During my tenure as president I am proud to have had two faculty members recognized by ATEA with the organizations Outstanding Faculty of the Year award.

As a retired president, it is time for me to pass the torch to someone else, my term on the Board ends in 2015 and therefore I plan to retire from the ATEA Board at that time. It has been a great ride; I have made many new and lasting friendships and I will miss all of my fellow Board members. I know the ATEA is under great leadership and will continue to grow and flourish in the future. My best wishes to all of you. I will always follow ATEA and if and when there is a meeting in my neighborhood, don't be surprised if I stop by for a visit.

Best Wishes and Lord's Blessings,

Bob

Jane is focusing on the reaccreditation of her program and the link between childhood and human development with workforce development especially in Soft Skills.

John Zeit, Board of Trustee

I don't remember exactly when it was (oh the fog of the classroom wars wears on the memory) but it must be 30 years or so ago. The president of the college sponsored a regional conference of the ATEA. Being a newly appointed instructor, I availed myself of as much of the collective wisdom as I could find at the gathering. The break-out sessions were a fount of information about educational practices and techniques. I left them with a pocket full of notes and ideas spinning in my head.

I soon found myself in the hospitality suit of the conference hotel where I got my initial introduction to the real ATEA. The people were as warm and nurturing to this greenhorn as a family, and they spun many a yarn of educational battles and

conferences past. They also answered my questions about the state of technical education throughout the region. I found that I was not alone in the instructional wilderness and that my faculty situation was far from unique. I was hooked on the organization and the people that comprised it.

I joined up with no idea that I would be serving a 30 plus year hitch. In that time, I have presented at 4 conferences (that I can remember), was chosen regional Instructor of the Year, planned and executed a regional conference, and served on the Board of Trustees. In these matters, I have no regrets.

It was with great sorrow that I left the Board this spring. I have served on numerous boards of trustees and directors and have never found a group of people with the honesty and integrity of the ATEA Board. Whenever someone asks me about my accomplishments in the educational field, my association with ATEA always leads the list.

A life membership is on my bucket list and is probably the only thing on there that I will surely accomplish.

Continued from page 18

The competition ties to all of Ivy Tech because each automotive program has a full blown Electrical Vehicle (EV) program

Other benefits were equipment upgrades and faculty development to attain industry certifications and credentials. State wide purchasing resulted in consistency across Ivy Tech through the Blackboard learning management system. The Blackboard system is a flip classroom which is a model of our future technology programs. In the statewide system all instructors in a technical area loaded their projects on a Blackboard simulations. The simulation development was in partnership with manufactures and vendors. Ivy Tech found that the simulations did not take way form the labs. It gave the students more time in the labs. It also replaced textbooks.

Glen reported on national trends that support the value of technical education:

- 43% of license and certificates earn more than an associate degree
- 27% of license and certificates more than a bachelor degree
- 31% of those with an associate degree earn more than a bachelor degree.

Ivy Tech stacks credentials and the degrees so students can exit and ramp back in without losing time and flexibility. Ivy Tech has a state wide participation and the retention rate that moved from 67% retention to 80% retention.

Ivy Tech believes in certification and aligns competencies with national standards. Ivy Tech provides Indiana data and national data to advisory boards on pass rates on certifications

and how students meet national standards of the American Welding Society (AWS) and the National Automotive Technicians Education Foundation (NATEF) as well as other areas with certifications and licenses.

By tracing student achievement, Ivy Tech found it possible to identify areas that needed improvement. One was blue print reading. Ivy Tech found the associate degree students were low in this area because they had taken the class two years prior to the test. Blue print reading was contextualized throughout the curriculum and the passage rate increased. The goal is to not load technical students with content classes but to contextualize content into the learning projects. "The increase in successful completion of programs was amazing and produced continuous improvement."

Other benefits for students were partnerships between high school and postsecondary through dual enrollment credit. High school students' learning is validated through OSHA certification and AWS international certification. There are financial benefits to schools having national certifications. AWS website identifies centers that are certified. It is the same for other areas that required national certification. AWS pass rates are reported so educators can look for causes of rates. They provide surveys for educators to identify where the concerns are and are able to remedy it.

The benefits range from contextualized trigonometry in fabrication, a math course students might never take, to volunteer student welders from Evansville Ivy Tech helping restore LST 325 a War II ship. Evansville students had the satisfaction of directly applying their skill in restoring the ship and also learned that during War II, women built the ships. One women welder had returned in a wheel chair to the ship when docked in Pittsburg and identified her welds.

student

Outstanding Technical Student Award 2015

ATEA Nominating Committee made two awards



Bailey Long,
Outstanding Technical
Student 2015

Gillette College ,
Northern Wyoming
Community College
District, Gillette,
Wyoming, Diesel /
Welding Technology

Bailey Long, Gillette College, Gillette Wyoming, is a winner of 2015 outstanding technical student award. We are recognizing Bailey in two areas Welding and Diesel Technology. He will finish with an AAS in Welding Technology and an AAS in Diesel Technology. Quotes from Bailey's recommendations include: "Passion for Learning, "Exceptional Character" and "Strong work ethic." . He holds a number of certificates from, American Welding Society (AWS), Occupational Safety and Health Administration (OSHA) and Mine Safety and Health Administration (MSHA). He has worked as a ranch hand, field welder, equipment repair, and in operations and fabrication. He is a Skills USA participant and is President of the Welding Club. He has outstanding academic achievement. His activities include Rodeo and volunteering for Boy Scouts of America.



Zack Watson, Outstanding Technical
Student 2015, is our other winner.

Tennessee College of Applied
Technology , Oneida/Huntsville,
Welding Technology

Zack Watson, Tennessee College of Applied Technology at Oneida is a winner of the 2015 Outstanding Technical Student Award. Zack is graduating in Welding Technology. Zack is a dual enrollment student

coming to Oneida/Huntsville as a high school junior with one term left. He is also in the machining program and will be graduating in that area. Zack's nomination letters included comments that he is "Committed to excellence", "High Achieving" and "Dedicated and self- motivated". He participated in the National Skills USA leadership training institute and his leadership skills have "flourished". He has been a pipe welder apprentice, lumber loader, and camera operator. He is a 2014 Skills USA national gold medalists in welding sculpture and two times Gold medalist at the state Skills USA competition. He has been recognized at the Chamber of Commerce with a "Leadership Award." He is committed to technical skills, leadership service and community service. Zack received the Outstanding Student of the Year in Welding Program at Tennessee College of Technology Oneida. He attends career fairs and talks to high school students encouraging them to enroll in welding at Oneida/Huntsville.

Award Committee Members



Dr. Harry Bowman
President Emeriti
Council on Occupational
Education



Bethany Shockney
Dean of Business, CIS
Technologies, Workforce
Development and Co-
Director Alabama Robotics
Technology Park



Dr. Mike Mires
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Technical and Workforce
Education, Northern Idaho
Community College



Chelle Travis
Assistant Vice Chancellor of
Student Services
Tennessee Technology
Centers, Tennessee Board
of Regents



Dr. Amy Erickson
Dean of Science, Math,
Agriculture and Culinary,
Northern Wyoming
Community College District



Brooks Jacobsen
Supervisor of Electronics
and Robotics Technologies,
Lake Area Technical Institute,
Watertown SD

Outstanding Technical Teacher Awards 2015

Chris Chambers



Chris Chamber, Associate Welding Instructor Tennessee College of Applied Technology Oneida/Huntsville is the outstanding technical teacher for 2015. Chris has the distinction of producing two gold medalists in Welding Sculpture one at the secondary level and one at postsecondary. Students commented that they have the welding skills due to his ability to motivate, encourage excellence and provide instruction in a manner in which the student could learn the patience and proper welding techniques. “He makes us get the job done.” He developed curriculum to meet industry needs and keeps records on student progress, absenteeism, accidents and placement. He uses his welding skills as a volunteer in the community. He holds certificates from the American Welding Society AWS as a certified welding educator, certified welding inspector. He is from an ATEA institutional member organization and has participated in ATEA Regional in-service.

Outstanding Technical Program Award Winner 2015

Diesel Powered Equipment Technology Tennessee College of Applied Technology-Elizabethton

The Outstanding Technical Program for 2015 is Diesel Powered Technology at the Tennessee College of Applied Technology at Elizabethton. This program is the basis for becoming a Snap-On Certification Center and an NC3 Regional Training Center for the Southeast. TCAT Elizabethton opened a 16M training center with the investment from Snap-On Tools. It is one of 4 Snap-On Diesel certification training Centers in the US. John Lee is the lead diesel instructor and Master NC3 Trainer. John is recognized for thinking about the next opportunity for his students and actively pursues resources that benefit the college, the students and the

state. TCAT Elizabethton’s success helps to improve related programs and programs throughout the state and in the NC3 network. He has certified 1100 students the largest number in the United States. The Diesel Powered Equipment Program completion rates and placement highest rate in the state. The programs motto is “Get in and get out and get a job.”



L-R: Dean Blevins, Director of TCAT-Elizabethton; Rich Wagner ATEA President and President of Dunwoody College of Technology, John Lee Diesel Instructor and Master NC3 Trainer, TCAT Elizabethton.



Nick Pinchuk, CEO of Snap-On Tools at dedication of Training Facility for NC3 Certifications at Tennessee College of Applied Technology, Elizabethton

Outstanding Technical Teacher Award Finalists



David Burgess, Industrial Maintenance Instructor, Tennessee Applied College of Technology

David was nominated by Dean Mike Ricketts Ed.D. for his leadership of the Industrial Maintenance Program with the most recent FANUC Certification which will enable the program to reach more companies that need robotic training for new and incumbent workers. He exhibits the qualities of patience, integrity and good work ethic and works to instill them in his students. He looks for innovative ways to make the educational process easier for the students.

Terry Lee Hand, Computer Information Systems Technology CIST instructor, Ogeechee Technical College, Statesboro, Georgia

One of Terry Lee Hand's nominations was from a student with a bachelor's degree in Biology returning for certification in CIST. The student wrote, "he approaches teaching with exuberance and fervor that I have not encountered in other instructors." Mr. Hand's dedication to his students' success includes certification exam preparation sessions outside of normally scheduled classes. Dean Futch, Library Services, noted that Mr. Hand epitomizes what a technical educator should strive for, practical teaching ideas, utilize best practice and provide leadership.

Kenneth Rudolph Advanced Manufacturing Instructor, Sullivan College of Technology and Design, Louisville Kentucky

Kenneth Rudolph started as an adjunct in Mechanical Engineering Technology at Sullivan College of Technology and Design and became full time when the college added a Bachelor of Science in Advanced Manufacturing Technology. He was one of five instructors nationally who received honorable mention for the Edison Teacher of the Innovation. He combines the passion for technology in his field with the ability to integrate it in his classroom. He encourages parents to think of manufacturing/innovation as viable careers for their son or daughter. He holds a Robotics Camp for high school students where they build a robot, program it to design a cast which was produced on a 3D printer. He holds a Masters and bachelors in Electrical Engineering from the Louisville University and had 5 US patents.

John Sikkenga, Diesel Technology Instructor, Sheridan College, Sheridan Wyoming

John Sikkenga not only teaches his student but continues his own professional development. He an adult learner he received an AAS in Diesel Maintenance and holds a two certificate in the field as well as Automotive Service Excellence ASE certificates in Medium/Heavy Truck Technician, School Bus technician, Truck Equipment Technician, and an Advanced Level Specialist. Specialized certifications allowed him to work on Caterpillar, Cummins, Detroit Diesel; and Parker Haniffer equipment. John exemplifies a technical career that moves with innovation to maximize for the students the benefit of experience and understanding of the learning process with changes in technology.

Join the Editorial Review Committee, a professional opportunity to advance your career and use your writing experience.

The Dr. Razek and the Editorial Review Committee are looking for additional reviewers.

Criteria:

- Doctorate, Ed. D or Ph.D.;
- Resume or Curriculum Vita
- One page expressing your view of academic writing, experience/background with education and how to evaluate academic writing.

Contact directly at the University of Dayton;

Nasser A. Razek, Ed.D.

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Dr. Razek, holds a Clinical Faculty position in Higher Education and Administration and Student Personnel Programs, Department of Counselor Education and Human Services, University of Dayton, Dayton, Ohio. Dr. Razek's Doctor of Education is from the University of Akron where he studied under Dr. Coyner, former *ATEA Journal* editor.



Jane Hildenbrand, Chair of Early Childhood Program, Ivy Tech Kokomo and ATEA Board of Trustee is the Associate Editor. Jane has experience writing and editing. She will facilitate the review process as well as participate in reviews.

Silver Star of Excellence Award 2015

Butler Machinery, Fargo and Wahpeton North Dakota

The Silver Star Award is awarded jointly by the American Technical Education Association and the National Technical Honor Society. It is presented annually to a company that exemplifies investment, engagement and support of technical education that provides the skilled workforce for their industry or service. In addition to the award, the company will be listed in the National Technical Honor Society National Hall of Fame for Educational Excellence.



L-R Patricia Poteat, Associate Director for the National Technical Honor Society, Accepting the award Tiffany Holm, Butler Machinery Company | Training & Development Manager; James King, Vice Chancellor for the Tennessee Colleges of Applied Technology, Tennessee Board of Regents, ATEA Executive Board and National Technical Honor Society Board of Directors.

The Silver Star winner in 2015 is Butler Machinery, Fargo and Wahpeton North Dakota, nominated by North Dakota State College of Science, Terry Marohl, Diesel Department Chair and Instructor.

Butler Machinery is a third generation company founded in 1955 in North Dakota. Francis Butler was selected to be a Caterpillar Dealer in Grand Forks and Fargo North Dakota and Clay County Minnesota. Francis Butler had been a contractor who knew the value of well-maintained equipment for

business success. His vision included well-trained associates. That vision carried through the next two generations of Butlers.

Butler Machinery supports associates tuition reimbursement and allows time off for classes and maintains a scholarship program at North Dakota State College of Science (NDSCS) for Diesel Technicians. Butler is a sponsor of the Caterpillar Dealer Service program at NDSCS. In this program

students alternate each eight weeks between school and a Butler Machinery Facility over a two year period. During the internships Butler assigns a mentor to work with the students to apply the skills learned while at NDSCS. The students have objectives to complete during the internship to reinforce the curriculum in the program. At the end of the two year program, the student graduates with an Associate of Applied Science Degree in Caterpillar Dealer Service. They also provide give \$1000 scholarships.

Butler also support through their own training program, Tech Grad, for further training on Caterpillar equipment. Butler has hired many NDSCS graduates over the years, several have become managers and lead personnel within the company.

Butler donates machines, engines, transmissions and parts to NDSCS and pays for shipping from Caterpillar to NDSCS. In addition to equipment, Butler created a Caterpillar Dealer Excellence Grant designated to the Diesel Department for scholarships, training and overall support. Butler believes a successful Diesel Program supports the Caterpillar Dealer Service Program.

Butler has an open invitation to NDSCS instructors to attend their training sessions on the ever changing technology of new equipment. It is at no cost to the instructors. Butler understands and is committed to lifelong learning.

Their impact is beyond the Caterpillar Dealer Program and the Diesel Technology Program, it reaches to all technical education in North Dakota by working with North Dakota legislators to acquire and approve the \$10.5 million addition to Bisek Hall at NDSCS which added 65,000 feet to the current facility. ATEA toured the new facility at the Region 5 conference in the fall of 2013.

The American Technical Education Association and the National Technical Honor Society are proud recognized Butler Machinery of Fargo with the Silver Star of Excellence Award.



They also support through their own training program, Tech Grad, further training on Caterpillar equipment.





**2015 National Conference on
Technical Education
Indianapolis, Indiana**



Plenary Session I



Sandra Krebsbach Executive Director of ATEA, introducing the Plenary Sessions, L-R: Dr. Mike Mire, Aerospace Center of Excellence, TAACCT North Idaho College; and Marie Price, State of Idaho Wood Products Center of Excellence, North Idaho College; Mary Kay Bredeson, Executive Director, Aerospace and Advanced Manufacturing, Everett Washington; Krebsbach at podium; Shana Peschek, Executive Director, Construction Programs, Renton, Washington for State of Washington; Bill Griffin, Executive Director for Agriculture Program, Walla Walla, for State of Washington, Connie Beene, Director of Federal Initiatives Kansas Board of Regents.

Dr. Sandra Krebsbach Executive Director of ATEA

Centers of Excellence are building relationships and connections with state of the art content. These are key networks that are positively effecting technical education. The session has both state funded and federally funded centers through TAACCCT grants.



Moderator: Mary Kay Bredeson, Executive Director of the Center of Excellence for Aerospace and Advanced Manufacturing, Everett Washington

The Center of Excellence is a team and a shared facility that provides leadership, best practice, research or support and training in specified area. The Washington State Center

of Excellence concentrate on sectors, develop strategies, open up communication and connect industry with the community and technical colleges. Centers were a response to the need for building the future workforce and training the incumbent workforce in the rapidly changing industry technology.

Ten years ago in the State of Washington the 34 community and technical colleges were functioning in silos each guarding their curriculum. The Washington Legislature in 2003 asked colleges to apply to be a Center of Excellence based on industries around them. The result was 10 Centers of Excellence were formed: Information and Computing Technology, Global Trade and Supply Chain Management, Allied Health, Marine Manufacturing and Technology, Agriculture, Aerospace and Advanced Manufacturing, Construction, Clean Energy, Homeland Security-Emergency Management. Each center was located in the “backyard” of a major employer such as Microsoft,

Amazon or Boeing and paid attention to direct service and the supply chains that served them.

Centers of Excellence have stakeholder Advisory Committees; they report to the college president; work plans go to the State Board for Community and Technical Colleges every 2 years; and there is an annual assessment. They are a resource and a convener for their sector across the state. Colleges with Centers are to be a resource for the other colleges to the extent that the college’s name is not in the title of the center.

In 2009-2010 Boeing was ramping up to hire 11,000 workers. The Center of Excellence for Aerospace and Advanced Manufacturing connected those colleges that could provide a workforce with those employers. So it is connecting labor, business, and educators to get students into jobs.



Connie Beene, Director of Federal Initiatives, Kansas Board of Regents, Topeka, KS

In Kansas the Board of Regents governs state universities and coordinates community and technical colleges which have their own boards. The Board of Regents works to initiate projects and convenes partnership projects across the state. They do not drive the projects but convene the colleges to develop strategies, projects, and initiatives for program alignment driven by business and industry. One example of an initiative is the diesel tech programs with the Kansas Department of Transportation for maintenance. The need was identified and the program grew over a two year period and now other departments have maintenance contracts with technical colleges.

The Kansas Board of Regents works with colleges to recognize employers. Employers want access to the students but also appreciate being recognized and thanked. Kansas has a 3 Tier process of recognition dependent on activities: supporter, partner or champion. The faculty knows who the partners are so the nominations come from the campuses. Nominations are on the website and The Board of Regents send a signed and framed certificate of recognition to the colleges who present the award. Colleges get an extra copy of the certificate to display. It is very successful.

Kansas has created a joint position between the State Dept. of Education and Board of Regents to provide data on the connecting points between K-12 and technical education to create career pathways. The two organizations have the data and are working together.

Wichita State Technical College has a model for a regional /sector

Advisory Council with secondary, postsecondary and businesses all on the same Council with subgroups. This reduces duplication of effort by industry.



Bill Griffin, Walla Walla Community College, Center of Excellence in Agriculture, State of Washington funded

The Agriculture Center of Excellence looks for ways to connect education with industry. John Deere training center is located at Walla Walla. It alternates the students each quarter (John Deere ATEA Silver Star Award

Winner) between the campus and at the dealership. The Center looks for trends in the agriculture industry. Students know all of the types of careers available in a sector and the broader in skills needed.

Ahead for the center is working with representative of all colleges that have Ag programs. The Center finds out the issues, recognizes ties to industry, identifies the jobs, what to teach and how to support them. We are building pathways through articulation agreements for students that want a four year degree. We are learn from each other on how to get over road blocks to a four year program. An area we are growing in is bio-energy as part of agriculture. We have a United States Department of Agriculture grant for bio-energy that pays for lab equipment, student tuition and fees.



Shana Peschek, Renton Technical College, Center of Excellence in Construction, State of Washington funded

A skilled workforce is identified as the number one resource for locating a business. It used to be tax breaks on land. And the workforce includes incumbent training. An

important role of the Centers is acting as a convening body. We are with industry and use our relationships to connect industry to colleges for professional development, faculty externships, and internships for students. Centers are also “translators” between education and industry. One example is math skills, the construction industry uses applied math. Centers serve as liaisons, and collaborators that builds trust among partners.

Idaho Centers both TAACCCT and State of Idaho Funded



Dr. Mike Mires, North Idaho College, Center of Excellence for Aerospace, TAACCCT funded

North Idaho College wrote and received a TAACCCT grant in Aerospace. At first Idaho did not see the connection of the northern region with aerospace. North Idaho Collee is 30 miles from Spokane,

Washington and is connected to Boeing.



Marie Price, North Idaho College, Center of Excellence Wood Products, State of Idaho funded

Centers of Excellence can identify businesses that are not readily understood to be an economic factor. For example, the first reaction to an aerospace grant application was there was no aerospace industry in

Idaho. Yet we found 40 businesses tied to the aerospace industry. As Boeing was getting new contracts, Idaho was in the supply chain. We also found southern Idaho is tied to Delta in Salt Lake City. The role of the neutral convener is important to bring industry and education together to build a sector strategy model. The Idaho Department of labor served in that role to bring the sectors together.

An Idaho State funded center is Wood Products Manufacturing Center of Excellence. State funds the workforce training and industry partners bring in 25% cash grants, and the convener is Dept. of Labor. The Center is expected to deliver and the investment has had good results. In Idaho we have an industry driven advisory board including Idaho Forest group, Stimson Lumber and Potlatch Corporation with a total of 1400 jobs. It is a cyclical industry that has come through a downturn and is now seeking new workers with advanced skill sets. With advanced manufacturing the worker is in a booth monitoring the manufacturing process and using computer skills, rather than on the floor doing manual labor. Programmable Logic Controllers (PLC) is the primary skill needed. There were no certifications for this skill set. NIC developed industry approved PLC training levels to certify that an operator is proficient up to an advanced level.

Mary Kaye Bredeson, Executive Director, Center of Excellence for Aerospace and Advanced Manufacturing, Everett, Washington. Funded by the State of Washington

To summarize the financial benefits of Centers of Excellence.

One is leveraging for large scale purchases. The Center of Excellence for Aerospace and Advanced Manufacturing was able to get 700 licenses of CATIA software, a 3D design company for \$18,000 including maintenance fee, and using the server at Everett Community College. Prior to the agreement, the price was \$15,000 per campus for significantly fewer licenses.

Sharing expertise. The COE grant writer worked with Spokane Community College on the grant for their Air Washington Consortium. They received a \$20M grant that includes 11 colleges and trains 2000 students.

Washington Centers of Excellence started in 2004-2005 each with \$100,000 budget. Through the Centers the regional focus of colleges became statewide. Recently allocations are \$205,000 per center. Since 2004, the Centers received \$1,600,000 in state funds. In the that same time the Centers brought in \$71M to the State of Washington. This is not leveraged savings or cost savings, this is grant funding.

Plenary Session 2

“How TAACCCT grants have benefited faculty and students”



Moderator: Susan Bigelow, Vice President for External Relations and Economic Development, Northern Wyoming Community College District, recipient of TAACCCT 1 and TAACCCT 3 grants

The grants are the Trade Adjustment Assistance Community College Career

Training Grants from the Trade Adjustment Act for displaced workers whose jobs went overseas. They are focused on adult workers who had been employed to get jobs with skills needed by local employers. Minimum set aside per state was at least \$2.5M in each round there have been 4 rounds.

The Department of Labor encouraged consortium; retention and completion; turning program completers into employees and using evidence based strategies to justify what educators knew were good ideas. The grants encouraged producing open source educational resources

The end is coming for the period of the first round of the grants. Each of the panelists represents a Round 1 Grant. “We have learned a lot and the Department of Labor has learned a lot incorporating that into subsequent Rounds. Round 1 how have you encouraged consortia, developed or used open education sources and developed evidence based strategies.”

This panel will discuss the benefits for faculty and students:



Rae Gunn, DeMaND Project Director TAACCCT grant “Accelerating Training through Blocked Scheduling.”

DeMaND is a Tribal College Consortium of 4 Tribal Colleges, United Tribes Technical College in Bismarck, North Dakota will serve as the lead college for

the Tribal College Consortium for Developing Montana and North Dakota Workforce (TCC DeMaND). DeMaND is the only consortium consisting of Tribal Colleges and facilitated by a Tribal College.

The consortium brings together United Tribes Technical College in Bismarck, North Dakota. United Tribes is owned by 5 tribes and at any time 75 tribes are represented at the schools;

Cankdeska Cikana Community College on the Spirit Lake Nation in Fort Totten, North Dakota;

Fort Peck Community College on the Fort Peck Reservation in Poplar, Montana and;

Aaniiih Nakoda College on the Fort Peck Reservation in Harlem Montana, known as Fort Belknap College.

The Bakken Oil Fields has not only increased the need for skilled workers in North Dakota and Montana but the need to build infrastructure for workers and their families. The consortium has developed over twenty programs that are short term or certificate training. Project Director Gunn reported that it has been very successful for students. There have been promising outcomes project wide. Completion rates for the short term programs averaged at 72% while the one year programs averaged at 51%.

Short term training programs can range from three days to two weeks. The training programs include Certified Nursing Assistant (CNA), Phlebotomy, Hazmat/Hazwoper, Commercial Truck Driving, Forestry, and Oilfield Training. Some one year certificates are also accelerated to 16 weeks through block scheduling such as Welding, Carpentry, Electrical Technology, Commercial Driver’s License CDL, Heavy Equipment Operator, and Electrical Line worker. The faculty is engaged and likes to be giving back to young people. Instructors are mentors and confidants—often taking students to interviews and encouraging them to pursue a career in their field. Faculty is Native American and non-Native American. The instructors understand the struggle of transitioning from training to the workforce. Students are held accountable by clocking in/out during the class day. A benefit to the students is the opportunity to train on high quality equipment such as the simulators. This saves on costs and materials prior to students training in the field.

Rae Gunn: None of this would’ve been possible without the DeMaND grant.



Gillian Gabelmann, Associate Dean for Technical Education at Washington Institute of Technology, (TAACCCT Round1): TRAC 7 “Technical Retraining to Achieve Credentials,” Topeka, Kansas

Dr. Gillian Gabelmann, Washburn

Technical Institute has been affiliated with Washburn University for seven years. When the Round 1 TAACCCT Grant came long, the University was the applicant and was the entity between the two was awarded the grant. This was a great benefit because Washburn University had the resources to deal with reporting requirements for the Department of Labor Grant.

The TRAC 7 Consortium was with 4 community colleges, 2 technical colleges and 1 technical institute. It stretches across the state. The institutions and their programs are: Cloud County Community College –Agri-Biotechnology; Dodge City Community College, Electrical Power Technician; Flint

Hills Technical College – Power Plant Technology; Garden City Community College - Food Science; Highland Community College - Risk Management; Salina Area Technical College - Environmental Technology; and Washburn Institute of Technology - Advanced Systems Technology.

In Industrial Maintenance, we had seven different programs one at each of the institutions. They each taught the same courses through the consortium were able to come up with a core curriculum and put together 6 mobile labs. The major benefit has been the collaborations among institutions moving them from a ‘my curriculum my students’ to collaboration that helped the students and benefited the employers.

TRAC 7 has built capacity for working with adult students dislocated or with low skills, pre GED moving them to be able to participate in high skill programs. Integrating the basic skills with the technical training makes it possible for students to move forward. Washburn created stackable credentials and a short term program, Certified Production Tech CPT 8 weeks and 12 credits. It is offered in the Women’s Correctional Facility. Technical instructors work with basic skills instructors.

The lives of the students have changed. There are many stories of difference that makes to students when they can see the steps to get a credential and stop outs for jobs and the pathways for advancing. Besides completing certificates there is an increase in students in students moving on the university.

Another result of TRAC 7 is improved interaction with employers. Dislocated workers were reluctant to move for a job. Caterpillar provides temporary housing for first month and when students take jobs they give them a signing bonus of \$1000 to be able to rent.

Another point is if they pass the credential test, they pass the class. They get one retest.



John Sutton, Credit for Prior Learning Advisor Northern Wyoming Community College District TAACCCT 1 Project: “Benefits of awarding credit for prior learning to students who are veterans.”

As Credit for Prior Learning advisor I, John focused on Military Credit for Prior Learning at Gillette and Sheridan Colleges. There are 4200 students, the industries are extraction and there is a high military presence; many residents serve in the National Guard and there is a Veterans Affairs (VA) hospital.

The TAACCCT grant built on a strategic initiative aimed at increasing student veteran success defined as Veterans continuing their education, persisting to completion and to getting back into the workforce. It is the only community college in Wyoming with a designated Veterans Services Director; it has also been designated a “Military Friendly School” the last three years.

John matched core competencies from military training to the diesel technology program. Working with the faculty, he identified up to 15 credits which would transfer to this program.

Another area John focused on was a 1 credit Wellness course. Veterans did not think they needed to take this course. John looked at military training for wellness. Since 2009, there has been a comprehensive soldier fitness resiliency training including weight and blood pressure management. The Wellness credit was awarded for Veterans serving from 2009 going forward.

Northern Wyoming Community College District found that even awarding one or two credits to Veterans had a huge impact. They found 77% of the Veterans had 3 or fewer credits of credit for prior learning yet were doing better than counterparts who had no prior learning credit—validated what they had learned. The difference in the completion rate from 2010-2014 credit for prior learning students was 88% compared to Veterans awarded no credit for prior learning which was 68%. For GPA, those with credit for prior learning had a 2.77 and those without credit for prior learning had a GPA of 2.14.

John pointed out that ACE evaluates courses for credit for prior learning but does not evaluate all of the training soldiers receive. The training of the lower ranking soldiers was not evaluated. TAACCCT made this level of analysis possible on a course by course basis which has led to findings that now impact other programs.



Glen Roberson, Assistant Vice President and Dean of the Ivy Institute. Project Director for Ivy Tech’s 1st TAACCCT grant,

“The top list of strategies used to increase students success/retention and that ultimately changed the future of Ivy Tech’s technical programs.” Indiana

Glen: The benefits for Ivy Tech students and faculty are improvements from success and retention strategies which included statewide embedded certification in all programs. Statewide students in technical programs benefited from contextualized remediation, math skills, work place communication skills and soft skills. Ivy Tech moved to structured block programs, service learning, and student projects with real world relevance. Real world experience included competing at the Indy 500 electric G0-Karts. Ivy Tech partnered with Purdue University.

There were competitors were from four year institutions across the State of Indiana and there were competitors from China. .

Continued on Page 9

“Innovative Partnerships”

Panel moderated by Tom Snyder, President of Ivy Tech Community Colleges and host of the 52nd national conference. Panelists: Walt Miller, Director of Operations Excellence, Cummins Mid-Range Engine Plant, Columbus Indiana
Dr. James Woolf, Community Engagement and Education Services, FCA. Fiat Chrysler Automobiles, Transmission and Central Casting Division, Central Indiana



Walt Miller: Operational Excellence coach at Cummins in Columbus, Indiana, retired Navy and now in manufacturing for over 22 years. At Cummins we are creating a world class manufacturing site. Like a lot of manufacturers, a major gap is getting the whole plant working together as one team. Our group effort with Ivy Tech has helped us close that gap.

We started in 2010. Typically at Cummins our team leaders have jobs on the floor. A new manager, Wayne, wanted to embark on something totally different. He wanted the Toyota model. He talked about his vision and recruited the engine business unit trainer and me, the global trainer, asking us to embark on a different journey to move the plant from a traditional way of managing. He asked “how do I get managers to be different; how do I get operators to be different; and how to get team leaders to be different?” He was also battling an “up wind” with senior management who said, “We have a typical way, we build the best diesel engine in the world, why do we want to change?”

*For lean, there were three elements that must come together: education, on the job training, and daily process. Wayne’s leadership brought us together with our skills in Lean and Continuous Improvement. The next step was to get our group to identify key things that we needed to train team leaders. As we started having a conversation we quickly noticed there was a big gap and that was in the soft skills. **We wanted to find a partner. We contacted some of the local universities but we chose Ivy Tech.***

Ivy Tech brought to us a different way of looking at things. Number one, their staff was very supportive. They came to our plant, they talked about curriculums. They even went one step further with our senior leadership in our plant who had not been to school in a long time. Sue Smith and her team brought the instructors to our plant. The instructors gave the training to our plant staff for a period of about two months, in snippets of the training so that we could get an idea if that was going to work. We started tailoring the program and working together as partners in making sure that we were covering all the bases.



We thought it was outstanding that someone would be a partner with us and help us to develop this vision to get us where we wanted to be.

*We came to an agreement on curriculum, a four week class where we put team leaders, which are hourly associates and front line supervisors together to take them out of a combatant attitude, to bring them together and mold them as a team, a quarterback, running back, point guard, and a center. We wanted that team atmosphere to develop at this level. The classes that we generated were: Lean classes with communication, problem solving, and conflict negotiations. **Ivy Tech encouraged the soft skills.** We combined those two things together and we called it peanut butter and chocolate and we just thought that was an awesome combination.*

*We have been running this program for three years in our plant and the results are in “the pudding.” **I will tell you after three years we have the best quality of any Cummins plant and we’re on line to be close with the best of the world.** We haven’t had a manufacturing error in our plant in almost seven months. We make more money—a boat load of money. We have a new sense of energy and a new sense of knowledge. The teams started working together by developing relationships with supervisors and key coordinators and we started breaking down roles.*

Out of all the top key metrics that we have in Cummins, we’re either number one or number two and we primarily believe it’s because of our people. If you come to our plant you’ll see multiple teams working a problem solving activity.

The other indicator that it works is our people are bringing their children into work in the summer programs, and those numbers are going up. This is not a dreadful job any longer.

***Next, we’re going to bring all the engine business units to Columbus, Indiana, in May, to learn how to do standard work. The primary teachers are going to be the union leadership and the Diesel Workers Union (DWU) operators. It isn’t going to be those of us in operational excellence. There won’t be a single exempt person, it’s going to be operators teaching our other engine plants how to do this and in May it’s going to start in Columbus, Indiana.** We believe a lot of this has come from the partnership that we developed with Ivy Tech. This program is a five week course alternating one week at Ivy Tech and come back to work in the plant so it’s learn, do, learn do, learn, do. Starting in phase two we’ll now bring it from Ivy Tech into the plant where plants managers are giving us a training center. So, again, we’re bringing Ivy Tech into our building creating that fellowship. We’ll*

do smaller classes, and more classes to keep growing and developing this program.

From a manufacturing point of view what's next for us is more in depth problem solving, more in depth breaking down processes step by step by step. We're going to be challenged in the fact that we're not going to have a lot of exempts in manufacturing sites supporting people on the floor like we've had in the past because of costs. So we've got to develop those 560 or 600 people to be more knowledgeable in current processes, in continuous improvement, research and development.

We've got teams that are with our Value Package Introduction (VPI) group that can say, "I've got a quality problem. It's a process related issue, let's work together and design that process out. We know that we've got cycle time issues, let's design those out." So it's now getting into those industrial engineering skills; into those mechanical skills; and it's constantly improving the problem solving skills. We've got to get a better discipline in those so those are the things that I would say in our plant are what's next.



Jim Woolf, Ph.D.: FCA, Fiat Chrysler Automobile for 18 months, retiree from Purdue University, 35 years in education. "Technical education is something this country really needs to grab hold of real tight and be serious about."

Central Indiana is the home of five Chrysler FCA facilities; one is a casting facility that casts everything from small parts all the way up to the blocks. In fact we're doing the Ferrari engine block and shipping it over to Italy. The plants either produce or assemble transmissions for Jeep, Dodge, Ram, and Chrysler products. Our workforce is in the neighborhood of 6,000-7,000 hourly workers and another 2,500 management people.

One day, Vice President Brian Harlow, now Vice President for NAFTA and the entire North America and Chrysler, and Brad Clark, Head of Engine and Transmission Manufacturing came to me and said,

"Jim our problem is this, we make great transmissions, we have great products, we have great suppliers, and we have great people. Our technology is awesome. Our problem is this; we don't have a pipeline of people coming up who want to come into our business, advanced manufacturing, to go to work, to make a career of it, not a job, a career. Education has taken shop, Ag, woodshop, metal shop, all those things we did when we were in high school in the 60's, 70's, and early 80's. They're not in our high schools anymore. Kids are encouraged to go to college, get in debt and come out with a psych degree and a hundred thousand dollar bill and wonder 'what the heck they're going to do'. So we need help. We really need help."

So I went to Indiana Transmission Plant 1 (ITP1) in Kokomo for a tour. The minute I walked in that door my life changed. I

said "Are you kidding me? This is advanced manufacturing? This is not a factory; this is a hundred thousand square foot video game!" This place is computers, robots, all of this stuff. I was shocked and amazed at what it was. Well, that sold me right there. So I said Mr. Harlow and Mr. Clark I will do what I can. What do you want me to do? They said we don't know, figure it out.

So being the educator that I was, I went online, found a program in our state called **Hire**, which is a State Department endorsed advanced manufacturing program for high schooler's. And, I connected with Ivy Tech, "Do you guys have advanced manufacturing?" They said, "Well, yeah we have that." I'm thinking we got to connect these two but the first thing I had to do was sell the program to the superintendents by getting them in the plant. I sent out invitations to several of our area high schools, to the superintendent, the principal, the guidance counselor and if they had an industrial arts teacher or shop teacher. I said "I'll give you a tour of Chrysler and while you're here we'd like to talk to you about the Hire Program, which can go into your school and Ivy Tech, which can educate your kids when they get out of high school."

We stated in August when school started and we ended in December and from August to December we had nine high schools commit to do the program. I went to the schools and promoted it, not only to the educators at the school, but the kids. The kids want to go on tours. They like a free T-shirt. I mean it was easy.

The hard sell was the parents. "I don't want my son or daughter going into a factory. I don't want them going to Ivy Tech. I want them to go to Purdue. I want them to go to IU. I want them to go to Ball State or one of our other major universities in Indiana." Well, that sell was easy after we said, "We're going to get your son and daughter through, in three years. They're going to have 18 dual credits free, you don't have to pay Ivy Tech and we're going to do some things for them. We're going, not to guarantee them a job, but we're going to set them up for a really good job in advanced manufacturing, maybe at Chrysler or other company that uses advanced manufacturing." We had 180 kids in our first year 25 here, 15 there coming from nine high schools, 180 kids. Every one



of the spots on the tour is full next year. So we're going to go from 180 to 360 students next year. In two years we'll double our enrollment.

Ivy Tech and Chrysler went together with our nine high schools and we received one of ten Department of Labor Grants last year for \$3.2 million. Those who enter our program, not only will graduate with national certifications in advanced manufacturing, they'll graduate with dual credits to Ivy Tech and upon graduation get a full ride to Ivy Tech in Advanced Manufacturing. There will be no college debt for it.

Mr. Snyder said it, the whole thing that made everything work was the partnership not only with Ivy Tech, the superintendents, the school teachers but with the kids, management and HR. Everybody that saw this as a problem came together and we're working together. We're not fighting against each other we're working together to solve this problem.

Advanced manufacturing is good work. It is not making parts but solving problems. We are setting them up not only for a job with us but a job in any advanced manufacturing facility in Indiana. If you look at our map we are the number two state in the nation when it comes to advanced manufacturing. We have all six Original Equipment Manufacturers (OEM's) right here in this state, Toyota, Chrysler, Ford, GM, SIA. Within the Central Indiana region and Ivy Tech region we have Caterpillar, SIA, GE Aviation, Chrysler, Cummins, These young people are going to get a great education at low cost, an opportunity to go to one of these employers and make a great living for their family and contribute back to society.



Tom: Two great stories

From them you heard two issues: One is, half the workforce is 48 or older and with has been a downside in the manufacturing business young people are not thinking about manufacturing as a career. The other is workforce is going to have to think differently than they ever did before; an empowering a workforce that is self-guided, self-managed and has the leadership to do this. I've toured both these facilities their workforces that have been trained, are empowered and are sharing that training with other people. That's the world we're trying to create.

Tom: We are used to the barriers dealing with K-12. How did you see that changing over time?

Jim Woolf: That is the key person, the superintendent. Our relationship with superintendents is awesome. I email them, the Ivy Tech staff knows them, visits the schools and so we have an open door policy with the schools. The schools are calling us and Ivy Tech to come in to present to the eighth graders so when they're a sophomore, junior they can enter the program.

We've made it as cost friendly as we possibly can for the schools. Here in the State of Indiana they get money back if it's a vocational program. This is considered a vocational program. So these 180 kids are bringing money back into the schools. Superintendents are very open to it and very excited.

Tom: Does it spill over to suppliers and can you coach suppliers both on continuous improvement? And are you getting younger people involved so that the suppliers have improvements in their workforce?

Walt Miller: Yes, Very shortly we're going to embark with our suppliers, taking those same team coordinators, those same

supervisors to go and assist and to help them get them engaged in this very same process with a pilot in their area.

Jim Woolf: My comment to that is absolutely. There are over 400 parts in a nine-speed transmission, 400 parts. We don't manufacture all those parts; we buy a lot of them. So the tier two companies, the suppliers, the people out there that are helping us build the products need to understand the advanced manufacturing process. Not only the process of the CNC's but the Lean side of it, the quality, the waste control and all of that.

Tom: What about getting the younger workers involved?

Jim Woolf: I am asked if I could say anything that students should write down on their hand from a talk what it would be. I say go to work. Go to work. It doesn't start with the day you graduate from your school. Go to class. Don't be late for class. Be early for class. All those soft skill things: attendance, tardiness, discipline, grades, recommendations from teachers counts.

Mark McLean, HR manager, opened our plants for tours of fourth graders. They came in with ties and suits and it's like a job interview. So we're teaching soft skills to them. They get excited about seeing robotics. We have them doing math problems related to the number of transmissions coming off the line. So we're engaging fourth, fifth, sixth, seventh, and eighth graders.

Walt Miller: I will share with you our perspective. The third shift is primarily our millennials and that group wants to change the world. They want to fix everything tomorrow and they want it to do it quickly. They get bored. We have to challenge them constantly. The best workforce is a workforce that comes to work every day and not only works but is challenged to think. When we challenge our millennials to think and to improve they come back, eager to be on time, to do a good job, because they're finding fulfillment in the job through this process.

Tom: Jim I'm going to give you last word.

Jim Woolf: We need to encourage young people to understand when they graduate and walk across the stage at their high school or Ivy Tech that they are just beginning their learning. When they come to our facility: its learning, its training and they probably won't stay in that job for more than 18 months to two years before you've moved on. It is getting students engaged and seeing the connections between their math class and advanced manufacturing. We have seen a student in six months, move from C-D with questionable attendance to A-B there on time every day because he sees the fit.

Tom: You can really thank our panelists by going out and buying a Dodge Ram with a Cummins diesel engine.

Tennessee Promise

James King, Vice Chancellor of Tennessee Board of Regents for Tennessee Colleges of Applied Technology

Chelle Travis, Assistant Vice Chancellor for Student Services, Tennessee Board of Regents for Tennessee Colleges of Applied Technology

The *Tennessee Promise* is having national impact and is changing financial access to technical and community college education across the nation. When President Obama visited Knoxville, Tennessee on January 9 it came on the nation's attention.



President Obama, January 9, 2015, Knoxville, Tennessee

President Obama:

Thank you. I have been coming to Tennessee a lot. There are a lot of good things happening in Tennessee. Today, I am announcing an ambitious new plan to bring down the cost of community college tuition in America. I

want to bring it down to zero. I want to make it free. Community colleges should be free for those willing to work for it because, in America, quality education cannot be a privilege that is reserved for a few. I think it is a right for everybody who is willing to work for it. Now, the good news is you already do something like this in Tennessee and you call it Tennessee Promise. We're also taking another page out of Tennessee's playbook and making investments to expand technical training programs and community colleges, much like you do through your 27 Colleges of Applied Technology.

James King, Vice Chancellor for the Tennessee Colleges of Applied Technology and Chelle Travis, Assistant Vice Chancellor for Student Services, both ATEA Board members, made a presentation on the *Tennessee Promise* at the ATEA national conference April 15-17 in Indianapolis.



James King summary of comments:

The *Tennessee Promise* is a last dollar scholarship. In Tennessee, closing the financial gap started over 10 years ago and has worked up to the *Tennessee Promise*. It is part of Governor Haslam's Drive to 55' which means his goal is 55% of the adults in Tennessee by 2025 will have some form of post-secondary education... either a Bachelor's Degree,

Associate's Degree or a Certificate. There is another component to reach this goal, *Tennessee Reconnect*.

The Promise was built on two scholarships and two programs: the Hope Scholarship, which was for community colleges and universities and the Wilder-Naifeh Technical Skills Grant which was for the Tennessee College of Applied Technology, \$2,000 a year for students. There were two other programs that were the forerunner of the Promise, one was the Ayers Program funded by the Ayers Foundation specific to Decatur County area. Mr. Ayers had done well so he implemented a last dollar scholarship program for those individuals in his county and it was highly successful. He included funding high school counselors that only dealt with Ayers Foundation

The Ayers program became a model for what became the Knoxville Achieves, again, a last dollar scholarship which took it one step further by having mentors for every student. The Governor, who was the Knoxville Mayor at the time, wanted it to become a state-wide last dollar scholarship program.

So the Tennessee Promise came into being and by the November 1 deadline, we had 58,000 students sign up for the Tennessee Promise. We had 58,000 students interested in community and technical colleges. I am a mentor and I have 7 mentees. I went to my first mentor meeting at Riverdale High School in Murfreesboro. They planned the auditorium to be full of just mentees and mentors. Riverdale High School was chaos because not only did the mentees show up...their parents showed up, their siblings showed up and folks...think about it, when have we had this much enthusiasm in a state for a community or technical college? They showed up and they were excited.

Tennessee Reconnect

The other component to reach the goal of Drive by '55 is *Tennessee Reconnect*, which is only for the Tennessee College of Applied Technology. It is for independent adults who are Tennessee residents for over a year and enroll full time in a certificate or diploma program at TCAT. Students can be middle class having a challenge with a mortgage, have associates, bachelor's or graduate degree, it is meant to get adults into certificate and diploma programs to make their skills current and help them get employed.

The Governor and I went from one end of the state to the other introducing Reconnect. By the end of that week...5,000 adults that were not in any form of post-secondary education signed up for the Tennessee College of Applied Technology. In one week's time...5,000 new adults came out of the woodwork

because of this program and it's growing every day. We have an app that every time a student signs up for Reconnect, their name pops up. Yesterday at this time it was 4,076. Today we are at 5,064. We can monitor this every day.



Chelle Travis:

It is a very exciting time in Tennessee to be in technical education. I've been with the Technology Colleges for the past 13 years and I don't know of any other time that I've seen more excitement about technical education in Tennessee and I don't think, for those of you that have been around for a long time, we are not the best kept secret anymore. I think the secret is out and I think this program did a huge part to do that as well.

We have been asked to explain the criteria and how it works.

Who is the Promise for?

Recent high school graduates for tuition and mandatory fees only so it does not apply for any special course fees that a student may have for their specific program.

What are the components?

Mentoring –we have 10,000 Tennesseans signed up for mentoring. Many of the students are first in their family to go to college. The mentor helps them go through the application process, walks them through the Free Application for Federal Student Aid (FAFSA) application and actually helps them enroll.

Community service--prior to enrollment student must do eight hours of community service in each trimester for us and in community college they must do eight additional hours prior to the next term. It is their investment.

Deadlines are important it builds accountability and commitment. The FAFSA application deadline and the mentoring meetings are required. Students cannot miss these meetings. If you are excused you must reschedule for your meeting so these students actually have accountability early on into the program.

Students must apply and begin after graduation. They must be enrolled in a full time TCAT program or they must be a full time student at a community college.

They must begin upon graduation, they cannot delay. They can be on a waiting list if their program is full.

What do students need to do to retain the Promise?

Students must:

Maintain continuous enrollment meaning that they cannot exit and then choose to come back for any reason other than a leave of absence for medical reasons, military reasons that they may have to have non-continuous enrollment.

Maintain satisfactory academic progress--attend classes and keep their grades up. Complete eight hours of community service each year and Complete the promise renewal application by July 1st of each year and complete their FAFSA.

What is considered completion?

For the TCAT's it is a diploma. There is an embedded certificate in each diploma but that is not considered a terminating event. For a community college it is an Associate's Degree. The Promise is over for students who have received eight trimesters or five semesters...that is the full length of Promise.

Tennessee Reconnect.

Reconnect is much like the Promise. The difference is Reconnect is for independent adults determined by FAFSA. They must be a Tennessee resident for at least a year and in a full time Certificate or Diploma program and never have received Reconnect

It does not have the mentoring component and the community service requirement and it does not cover special course fees or books. If the student has outside scholarships they can use those. It doesn't preclude you from using those to cover your other expenses.

The Governor has made a very bold promise in saying not only can every high school graduate get a two year education from either a TCAT or a community college but also those independent adults that want to come back and further their education can do that at a College of Applied Technology. With our completion and placement rates at a College of Applied Technology they're not only going to complete, they are going to get a job in their field so I'm very excited about this program for the State of Tennessee.

Impact of National Coalition Certification Centers on Technical Education

Summary of comments on impact from Roger Tadajewski, Executive Director of the National Coalition Certification Centers NC3, Fredrick Brookston, National Partnership Manager for Snap-On Tools and Matt Janisin, Instructor and NC3 Coordinator for Gateway Technical College, Kenosha Wisconsin.

Builds a “corporation” of community colleges focused around three industries—automotive, HVAC—Climate and Energy Controls and Precision Measurement—with industry standards, certifications, collaboration of faculty across the nation, common training and sharing of “corporate” resources.

Shortens timelines and infuses speed into program development, moving from model of programs lasting 10 to 15 years with modifications--to industry speed—18 months, 2-3 years with industry support.

Takes the risk out of investing and changing for colleges.

Conducts on-going research—surveying and feedback from 38 certification sites on—what do colleges need, how to develop curriculum, how to work with students, faculty

Provides proof of instruction and learning through the certificates—marketable with employers

Builds relationships and partnerships with industry, across states and educational systems

Removes the burden on instructors to implement “one more good idea from visionaries”

Raises the standards for related industries

Gains efficiencies in the curriculum

Gives faculty access to experts when they don't know what to do or how to teach it.

Reinforces what faculties are already doing.

Encourages innovation because faculty will “dive into areas” using (industry) expertise and knowledge to teach the new processes and content.



**Roger Tadajewski,
Executive Director of
the National Coalition
Certification Centers.**

*Why NC3 came about:
All high quality companies
have the same problem, how
to integrate into education.
Education and industry
speak different languages.
Snap-On wanted to learn*

how to talk to community colleges. CEO Nicholas Pinchuk of Snap-On and president of Gateway Technical College, Dr. Bryan Albrecht, both put effort into helping to change the relationship from a vendor/customer to an integrated partnership. This is a time when we have to compete to get people into technical education programs. And this is what drove the Snap-On mission to create NC3.

We now have over 315 institutions across the country in a matter of a relatively short period of time. We've on-boarded 27 new institutions since the first of the year. So it's like a tsunami hitting us. And that's why Trane joined, Starrett joined, and others that

will be announced shortly will be coming on board being part of this too. It'll be very exciting.

What is NC3 and how does it work?

NC3 is a non-profit organization. Our board of directors is made up of college presidents and industry leaders such as Snap-On, Trane, and Starrett Corporation. NC3 collaborates with seven organizations from the Kansas Board of Regents to TCAT. We have relationships with the Federal Aviation Administration at the highest levels on how we address things within aviation and the aerospace industry. So it's all part of how we drive NC3 and make it a part of our system.

NC3 makes it possible for educators to be an “education corporation” across the country rather than a college with a budget and programs that in the past might be good for five, ten, fifteen years with some modifications. Production and technology are changing at faster rates, two to two and a half years. The technology on cars gets phased out in just three years. Three years later it's archaic. HVAC is now called is climate and energy control systems technology. How energy is produced, how it is transmitted across the country, and then how it is utilized within buildings is changing and the technology is changing.

We heard from James Woolf at this conference that jobs change at Fiat Chrysler every eighteen months.

How do community colleges how do you keep up with the changes? How do you invest those programs? How do you make those changes?

Who's the lead person who can say whether it's in curriculum, materials, facilities, equipment, instructional processes needs to be changed. And then how do you make those changes? It becomes very costly and very expensive.

NC3 brought together college presidents, like Bryan Albrecht and Lee Lamberts, Pima College to begin to discuss, "Could we come together and we share resources across the college network to shorten that timeline of implementation?. What are areas that we can collaborate from facilities, curriculum, to instructor development?"

Now, NC3 Instructors from Tennessee know instructors from Wisconsin very well and communicate on a weekly basis. Same with instructors from Washburn Tech in Kansas communicate with Climate and Energy Controls instructors across the country on curriculum, on testing or certifications.

NC3 shortens that timeline for implementation and make sure that where we don't need to be reinventing wheel. Students, instructors, college presidents, deans, boards of trustees, all has to be part of that process to identifying where do we need to be investing dollars whether from industry or from education.

What is certification and what does that mean at the end of the day for your school, for your instructors, for administration, for leadership? Most importantly, what does it mean to that student when they go out to the workplace?

We have key certifications: meter, torque, and precision measurement. When we have the pre-engineering program that asks "about my students?" Or, the diesel guy or the manufacturing person. So part of also what we started to look at how multimeter is used in pre-engineering programs. It's used in electrical programs. It's used in automotive and diesel energy programs, = aviation, manufacturing. So part of our certifications apply to multiple industries and multiple programs. It's the same thing with torque. If we think about torque in the automotive industry or the manufacturing industry we have a long history here of tight is tight but too tight is broken. This is the case whether it is automotive for a titanium screws in your shoulders and your elbows and your knees.

How do we determine the certifications?

Not all these certifications necessarily start from industry.

Sometimes they start with our school partners that say "Here are some things that we're seeing at the local level. Can we find an industry partner to help us grow this on a national level?" So those are the things that we also work on.



**Fredrick Brookhouse,
Manager of National
Partnerships for
Snap-On**

NC3 has expanded around the country and included other industries. Our CEO Nickolas Pinchuk wanted to create the pathway for other companies to join so provided mentorship for

them. Trane Corporation joined the NC3 and has a board seat. Starrett Corporation, a precision measures company has come on board. This network is creating a national standard across the nation in these industries.

We started in 2007 with one certification, right. Gateway has 32 different certifications now through the NC3. We're adding another 13 certifications this year. So this is a very dynamic program that if you look at it today and don't look at it for two years there's going to be a lot of changes. So it moves very quickly.

How do we drive this change?

38 leading membership schools are beacons for us, working with our industry partners. They are Certification centers in 38 leading institutions that drive implementation and integrate things.

We had the 27 new schools join just this year. We're at 15,500 certifications delivered last year. Year-to-date we're at a 73 percent increase over last year. So I think in five years we'll be delivering a hundred thousand certifications across the United States.

“ I will speak to what happens on Monday morning, after the visionaries are gone and now it's got to get to the students. What does that look like? ”

Matt Janisin

We reach out to the middle students and the math teacher, that science teacher, that English teacher that actually sees those students more than the counselors do. How do

we engage them and help them understand how math connects to the career technical education world? How precision measurement, how will all those pieces come together? Snap-On, has had third graders, 100 in on a plant tour. We're doing pilots in sixth grade with electricity training and precision measurement. Elementary teachers are telling us that uniformly that measurement from the kindergarten teacher all the way to the eighth grade teacher is needed.

What we have learned?

I thought it would be the technical skills, right. When we survey the people who run our plants they tell us technical skills and communication, working as a team, being on time are important.

These skills are important especially since our employees will average more than 30 years. **And they keep their head in the game.** It's not the labor of the past. It's the labor of the future. It's what we call advanced skills is what we need in the workforce. We can't compete with low cost assembly and things like that globally. But the way you can compete when it comes to a high level of skills, people with machining skills and technical equipment skills. NC3 keeps the pipeline moving in partnerships between education and industry.



Matt Janisin,

Matt Janisin: I will speak to what happens on Monday morning, after the visionaries are gone and now it's got to get to the students. What does that look like?

*As an instructor, if my college president or dean comes to me and says we have this NC3 certification. There's this curriculum. **Okay. It's more for me to do.***

What now? How is this going to help my life easier, make my students more employable? How does this work?

The reality is this worked very well.** And actually when implemented properly it helps gain a lot of efficiencies in the curriculum you're probably already teaching. My background is automotive/transportation related. Snap-On is big into that industry. So how can they help us ease what we're already teaching? So there are some of the areas that **we dove into using their expertise and knowledge that we never had as instructors because there's times that we don't know what we don't know either.

So when you look at the areas of multimeter or multimeter, torque or diagnostics we were teaching all of those tools and techniques and platforms. I mean instructors have to teach to multiple standards and certifications, NATEF, AFC standards, and state curriculums. Maybe we were doing a good job, maybe we weren't.

We didn't really have the in-depth knowledge because we never had that industry tie. And that's really what NC3 was able to provide us that access to qualified engineers at the corporate level, training master teachers who could then pass that on to more teachers, who could then pass that on to students.

Now the outcome of it is, we have a third party credential from an outside body, an expert in the field, again, whether it be Snap-On, Trane, or Starrett signifying that as an instructor we've delivered properly. The students have now shown competence through an online exam that is hosted by NC3 but yet industry-based, written in conjunction with industry experts that will verify what the

students know and can do at the end of that unit. And it could be something small like how to use a multimeter or multimeter. It could be something larger like using an automotive diagnostic piece of equipment.

*But ultimately, **NC3 certification provides relevance and some verification for what I'm teaching as an instructor in the classroom.** I get the curriculum directly from the industry so there's a little less for me to do. We have a Train the Trainer system set up to where I can go and learn how to do it technically but also how to deliver it to the students in the classroom. So I'm getting the professional development I need as an instructor. And then ultimately, my student goes out to be interviewed and I want him or her to be employed. They now have something that they can put on their resume as a bullet point or in their portfolio with a certificate from a recognized industry partner for automotive-- Snap-On or HVAC—Trane. This gives the student a talking point in an interview.*

So when an employer is flipping through that portfolio or looking through that resume and they see a Snap-On certification on a piece of diagnostic equipment or a building automation certification from Trane, they're going to ask about that. They recognize the name but they might not actually recognize it in this context. But that instantly prompts the student to be able to talk about what they learned, what they were able to do in class, what they accomplished. They can start to explain how they used the multimeter to diagnose a circuit or to use the torque wrench to properly fasten a fastener. They can speak to all the variables that go into it or how to diagnose the very complex situation using a complex diagnostic tool. It helps the student to take some ownership of the skills and knowledge that they've learned as well as being able to communicate that to an employer in an interview setting or any situation like that.

When we talk to schools they want to know what's the cost?

There is tremendous cost savings for schools because the test site, curriculum development, training, updates and memberships are underwritten by industry. Plus, in the case of TCAT we've established relationships and we communicate, and we're collaborative beyond what's next.

These industry partners are stepping up financially because we know this works. And so I was fortunate enough to be part of establishing the first company to step up and put some money behind this and show other industries that they can do the same thing as well and work collaboratively with the education.

One premise is no matter what technical skill that you're trying to convey to the students it's not going to happen unless the instructor him or herself is extremely comfortable and competent in that skill in order to teach it. So just giving curriculum, just having pricing breaks on equipment or whatever doesn't get the complete job done. You really need to go that one extra step and make sure that the

instructor again is very comfortable and confident in delivering that curriculum. So a train the trainer model was put in place where all the instructors from perspective certification schools that want to deliver these certifications will come to a center of excellence, learn not just the technical skills based on the certification but also some of the delivery skills on how to teach it to the students. Because in the Train the Trainer they essentially delivered the curriculum as they would deliver it so they get to see a model. **In addition the instructors get to experience it as a student.** And I think that's always good for an instructor to do from now and then to sit on the other side of the table and kind of experience that overwhelming feeling of a lot of information coming at you in a short amount of time and the expectations of the exam. It's the same for the students. The exams are the same. So we put the instructors through the same paces that they will then have to go and do with their students.

Getting instructors out of their home school and to different areas of the country in different schools gives them a new vision or new ideas that they might be able to see and take away from the other

schools. So what started out as Gateway in Kenosha, Wisconsin, we've brought a lot of schools through and they've toured. **They learned from our mistakes go back and do better. And we in turn learn from them. So we're continuously trying to improve.**

Our college president at Gateway Technical College, Dr. Bryan Albrecht, understands we need to make sure we have a good maintenance and facility schedule to maintain this ever-changing technology. We are in the middle of about a half million-dollar renovation right updating and tweaking our program. The first 30 or so schools that have come and visited Gateway went back and redid their facilities. Throughout the last seven years I've now visited their new facilities. And now I'm "stealing" all those good ideas and bringing them back to Gateway. We keep raising the bar as a whole for the overall industry and education together. We have **a little over seven hundred instructors that have gone through Train the Trainer** that are now engaged and starting to deliver these out into the marketplace.

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I am actually no longer on **Education and Work force.** I moved to a committee called **Energy and Commerce.** Energy and Commerce has the broadest jurisdiction in Congress, every sector of our economy is affected by energy and commerce. I am on the Commerce Manufacturing Trade subcommittee. I am on the Health subcommittee. On my subcommittees, my mantra is about what kind of work force do these sectors have and, again, it's all about a skilled work force. At the end of the day we can get the taxes right, we can get the regulations right, but if we don't have the skilled work force that powers these sectors it doesn't matter.

I am concerned about our millennial generation. According to the US Census Bureau 30% of the millennials are living at home right now. We need to get young people into the career paths and to come out of college with degrees. Unfortunately they may have a degree and settling for something totally different just to get a job. This has a ripple effect throughout our economy when young people are living at home. They're not renting apartments. They're not thinking about buying homes. They're not out buying things. Many of them have degrees but cannot get jobs. So I am really pleased that we started **connecting careers with classrooms in my district.** My office is hosting meetings with educators, middle and high school guidance counselors, teachers, principals, and superintendents and is educating them about different sectors of the economy.

You understand what the jobs are out there. But if you talk to your friends who are in the high school system and in the middle schools they truly have no idea what you all know. **They haven't seen it.** They haven't been in the different manufacturing facilities, in

hospitals, in the tech companies to talk about careers and jobs. Through these partnerships, people that are advising our kids of what to major in in college or what careers will be connected. Think about how you can help with our middle and high school guidance counselors and teachers.

I am proud to be a voice for you all and I am passionate about what you do. I do encourage you to reach out, invite your members of Congress to your campuses. Get them on campus, let them meet with your students; let them meet with your faculties. With the Higher Ed Reauthorization and with Perkins coming up, Congress is looking for opportunities to come to see what you all are doing so it will be relevant to what they're working on in DC. Hold a press conference; it gives you a great opportunity to showcase to the media what you're doing. Invite them to your ground breakings, or conferences to speak like Ivy Tech has done. Have your board of trustees or your board of governors invites them to their meetings. Invite them to be commencement speakers. I'm proud to be the Ivy Tech commencement speaker on May 9 and I'm thrilled to be offered that opportunity. So you know those are just ways to engage your members of Congress.

Thank you all so very much for what you do. Feel free to stop by my office in Washington if you're ever in Washington.

Keynote Susan Brooks: “Restoring Middle Class Security”

Congresswoman Susan Brooks, Keynote, April 17, 2015

American Technical Education Association 52nd national conference on technical education, “Innovation through Continuous Improvement of Technical Education” hosted by Ivy Tech Community College



Honorable Susan Brooks,
Indiana 5th District
United States Congress:

Good morning everyone, it's wonderful to be here. I want to welcome you all to Indiana. I am glad you were at the Indianapolis Motor Speedway, one of Indiana's treasures. I want to thank your sponsors. It takes sponsors to put on a conference like this.

I am very aware of the importance of our community college systems and our career and technical programs both

in the high schools and at the college, at the post secondary level because of my work at Ivy Tech Community College. I worked at the college from 2007 to 2011 when due to layoffs there was a surge of students and adults coming back. President Tom Snyder was new to Ivy Tech coming from corporate America. He brought new energy and knew the skills and the values that were needed in the corporate sector and specifically manufacturing sector to make our country competitive. At the end of the day the United States has to continue to innovate and to make things.

I ran for Congress in 2011 and was very pleased to be placed on the Education and Work Force committee that deals with the laws that affect your colleges and your programs. I learned a lot. Chairman Kline, has been an amazing chairman. Dr. Virginia Fox, from North Carolina, is the Chair of the Higher Education Committee. A Hoosier, Todd Rakita is leading the K-12 subcommittee. There are a lot of changes going on there.

We are very proud that President Obama visited Ivy Tech a few months ago. He called Ivy Tech one of the best community college systems in the country. I completely agreed with that and was thrilled that he came to Indiana and that he has been highlighting community colleges.

The theme of your conference is “Innovation through Continuous Technical Innovation.” I was asked to speak about the middle class and the role that education plays in bringing Americans out of poverty. I have listened to the work of Washington DC author and think tank leader, Arthur Brooks work on happiness. When you

think about it, “Pursuit of Happiness is in our Constitution. He says that there are four keys to happiness: faith, family: community and vocation.

I have added security to the list. It breaks into: economic security, personal security, retirement security, and national security.

There is concern in our country that the next generation will not have a better life than we have had. Now we have hit this point. How do we get to that security for the future? I will talk about economic and personal security. Economic and personal security is where you all come in, that's what you were doing day in and day out, helping people with their economic security and their personal security, which makes for a happy society. Economic security is about the ability to get a job and to keep a job. Personal security is about the ability to enjoy and afford everyday life. Economic security, poverty impedes happiness. And, extreme wealth does not guarantee happiness. What you need is a job that gives you the dignity of work and allows you to provide for your family that's really what it takes. And a strong middle class with rising incomes and aspirations is what gets us to that happiness as a society.

So how does Congress facilitate that or get in the way of that?

One of the top things that you all know is we do not have enough qualified people. The Labor Department just reported that there are 5.1 million job openings in the country as of February. That is the highest number of jobs available in the US in the last 14 years. So there are jobs out there. But we do not have the workforce to fill them.

Indiana Business Review reported Indiana had 1.1 million jobs posted this decade three fifths required some postsecondary education. So when I'm at high schools I say 'this high school diploma that you're about to get its great and congratulations but it is not enough. You have to keep going.' Members of Congress are giving that same message. We know we have to start young at that elementary and secondary education level.

*Congress is debating the **Elementary Secondary Education Act** which would repeal **No Child Left Behind**. Both Chambers in Congress realize that we just haven't gotten it right. We're throwing so much more money at our K-12 system and yet we aren't getting the results that we need. We still have far too many drop outs. We still don't have enough kids pursuing post secondary education in some way. A premise coming out of both Chambers is there has been far too much regulation from the Federal system and we need to let our state and local governments and our school boards have to have a lot more control over our schools rather than the mega federal regulations coming to our schools. We hear*

this from superintendents, school boards and principals. We have to give more control to those educators on “the ground,” improve the assessment systems and give parents what they need to make decision.

In the last Congress, we accomplished the passage of the **Workforce Innovation Opportunity Act (WIOA)**. It was a bi-partisan success, driven by Dr. Virginia Fox, a Republican who had been in the college system and by Senator Patty Murray a Democrat from the State of Washington. Their two teams worked tirelessly to work through the differences between the Republican versions and the Democratic versions. It is the way things are supposed to be done so I am very proud of that. I co-sponsored it and was involved in helping get it done. It was an honor to be at the White House when the President signed it into law.

What I have learned is the workforce system is one of the most complex bureaucracies. Bless you to those who serve on or present to workforce boards. There are so many layers of bureaucracy that when it gets to the unemployed worker or the underemployed worker maybe \$.16 of every \$1.00 actually gets to bring one of your programs.

With WIOA we reformed the system. I hope it is going to be a success, although I did hear there are 3,000 pages of regulations issued last month. It is supposed to be making it simpler.

What this will do is eliminate the sequence of services. It gives a lot more flexibility to the system. I authored an amendment that adds pay for performance contracts. So if you’ve got programs that show results you can put more money into those programs. I hope everyone is talking about and encouraging the implementation of **career pathways**. Nothing makes me happier than when I visit our high schools and are beginning to talk about career pathway, that start in high school and keeps going on in college. Career pathway gets you a start at a company and then you can work up. We have to get younger people and older people thinking that way. It added more flexibility for our states. The state work force boards now have more freedom to appoint different types of categories of people to serve on those boards

We also need to insure we start to talk about career and technical education at a much younger level starting in middle school and then going through high school. The country lost its way by not focusing on the middle skilled jobs and middle skill incomes and instead focused on the four year degree programs. But, it is often that associate degree or the certification that gets the job. Starting welders can make \$70,000.00 to \$80,000.00. Other good paying jobs are heating and air conditioning technicians, plumbers, skilled trades and manufacturers. Now with technology and innovation, tech creators are not pushing the four year colleges. Often they started it out of high school or during college. Now, obviously we don’t want to encourage drop outs. We know completion is important, but I think that we just have to get a shift in partnering with the tech sector to help make those shifts in your communities.

I recently visited Pike High School in my district that received a \$7,000,000.00 Department of Labor grant. It is a school system that has a high and growing number of free and reduced lunch students, and large number of minority students attending this high school. They are partnering with Ivy Tech and businesses. They now have a person designated to form internships for their high school students and apprenticeships in tech support, web design, manufacturing logistics, engineering classes, robotics, and CNA. These students don’t go off campus to spend three to four hours in a program. They are going over to that program for an hour, and then they’re coming back into the rest of their normal curriculum and the day with everything else. I think this is the model. Students often don’t want to leave their friends. They also don’t want to be viewed as not going to college. They don’t want to be pigeon holed into “Vocational” programs. They want to go to Career and Technical Schools. We’ve got get the old term out of our heads, it is impeding young people’s excitement about what you all do. We have to make it more 21st Century, more progressive and futuristic looking. What they are excited about is getting dual credit and so are their parents. These are all incredibly important.

We are getting ready to do the Reauthorization of the Higher Education Act. The principles that Dr. Fox has set out for Reauthorization are:

- Empower students to make more informed decisions—so educating them on choices and transparent about what the higher education institutions offer.
- Simplify and improve student aid.
- Promote and reward innovation, access and completion.
- Insure strong program accountability while limiting the federal government’s role.

Then we are going to take up the Perkins Reauthorization. Perkins is due to expire at the end of fiscal year ’15. Congress understands how important Perkins is but we need to better integrate Perkins into our schools and into our work places. We have to make sure that not only the education community but your business community is talking about how important Perkins is for them.

With Perkins, it is what you do already. It is about aligning Career and Technical Education with “in demand” jobs. Perkins is about what you all do and you all do it well. We have to continue to make sure that there is Perkins funding coming your way.

There is going to be a focus on better transition between secondary and post secondary education. If you are not closely aligned with your high schools and if you do not have those relationships, you could be left out. Transition is going to be one of the guiding principles. Go back and make sure that that transition happens.

Continued on Page 27

In Memory of Odin Stutrud



Odin Stutrud, ATEA Executive Director 1971-1983
Photo 1970's Provided by NDSCS Alumni Foundation

Odin Stutrud, ATEA Executive Director 1971-1983. Passed away on February 5, 2015 at the age of 95. In 2013 at the age 93 Odin attended ATEA Region 5 conference social event in Wahpeton.

Odin was an educator, a journalist, printer and publisher. Odin's words in the *McKenzie County Farmer* which he wrote in 2007 explain his interest in education and in particular technical education:

The graduating class of 1937 didn't have the benefit of a School-to-Work program, much less a Guidance Counselor or an Advisor. The only educational guidance I ever received was given to me in the front office of *The McKenzie County Farmer*. Don Moffitt, the editor/manager, said, "If you want to be a printer and linotype operator, you'll have to go to school." He had graduated from the State School of Science in Wahpeton and didn't know of another school of its kind in the nation. Go to school!

As many young men did in the Depression, Odin joined the Civilian Conservation Corps but after did go to NDSCS completing the program in printing in 1941. He served in the US Army during World War II. Upon completing service returned to North Dakota where he published a weekly newspaper, the *Sargent County Teller* in Forman North Dakota until 1954 when he was hired as an Instructor at North Dakota State College of Science. Like many new technical instructors Odin joined ATEA which was then based in New York. It gave him access to national professional development and a national network as it does today. His son, Mark Stutrud, remembers going to ATEA national conferences each summer hosted by university vocational education departments. They brought industry partners to exhibit and introduce new equipment. The Stutrud's attended conferences at Western University in Bellingham, Washington (the library is still an ATEA institutional member), McGill University in Montreal, Canada; the University of Illinois in Bloomington, Illinois; Kent State, Kent, Ohio; and the University of Colorado, Boulder. Odin also earned a bachelor's degree in vocation education at the Southern South Dakota State College attending part time.

Odin started working on a masters in vocational education in 1969 at Stout State College in Menominee, Wisconsin, and took a sabbatical in 1970 to completing it 1971. According to a Stout archivist, Stout wanted the ATEA national headquarters in New York to come to Menominee but the ATEA Board of Trustees instead chose North Dakota State College of Science. The NDSCS President Blikre made arrangements for ATEA to have an office, telephone access and for Odin to be a part time Executive Director. Odin also took a part time position as Technical Teacher Educator/Coordinator for the State of North Dakota. Odin served as part time executive director from 1971 to 1983. Odin's background in publishing as well as printing made it possible to continue the *ATEA Journal*. In 1973 Odin hired Betty Krump to a full time secretary position and she later became the executive director in 1983. He hired Carolyn Carlson as a part time associate editor in 1977. Carolyn reviewed books for the Journal. Upon the retirement of Betty Krump in 2012 ATEA moved to the Dunwoody College of Technology in Minneapolis, Minnesota where it is now.

ATEA is indebted to Odin for his vision and leadership that carried forward: the mission of quality professional development with regional and national conferences; loyal members; the *ATEA Journal*; and professional administration of the association.

Sandra Krebsbach, Ph.D.



Odin Stutrud (Center) Printing Instructor North Dakota State College of Science. Provided by NDSCS Alumni Foundation

The Integration of Prior Learning Assessments into STEM Education for the Purpose of Career and Academic Success

by Kent Seaver

Having spent the last 16 years working in metropolitan community colleges, I have had the opportunity to see all types of students; new-to-college eighteen year olds, fifteen year old non-driving, and Dual Credit students (as well as returning students who would rather not divulge their ages). All bring with them the sum of their life experiences. But one group that I have found that brings a set of experiences and skills like no other are our returning student veterans. Because of the nature of the service, these men and women are arriving on our college campuses with more technical knowledge than most generations that came before them. This knowledge can be measured by us in academia via Prior Learning Assessments, commonly referred to as PLA's.

Trish Paterson, Executive Director for College Access Initiatives for the University System of Georgia, states that "prior learning isn't just giving students credit for life experience. Colleges that choose to offer the credit measure what students know, review how that corresponds with courses students are required to take and determine whether their knowledge merits college credit. We are honoring what a student knows even if we are not the reason why they know it" (Diamond, 2012, p. 4).

Prior Learning Assessments can be broken down into four basic types, with the first being evaluation of previous coursework. Often times, this coursework comes from the corporate or military world. The American Council on Education (ACE) has reviewed and provided academic credit recommendations for more than 35,000 courses, examinations, and certifications offered by employers, federal agencies, professional associations, apprenticeship programs, online education providers, and other organizations. Their National Guide to College Credit for Workforce Training contains ACE credit recommendations for formal courses or examinations offered by various organizations, from businesses and unions to the government and military (American Council on Education, 2014). ACE's College Credit Recommendation Service (CREDIT) connects workplace learning with colleges and universities by helping adults gain access to academic credit for formal courses and examinations taken outside the traditional classroom.

Since 1945, the American Council on Education's Military Evaluations program has evaluated formal military training in terms of academic credit, allowing thousands of soldiers and veterans to earn credit for college-level learning acquired in the military. The results of these evaluations, along with learning outcomes, course descriptions, and recommendations for the

type and amount of credit that may be awarded, are gathered from the veteran's Joint Services Transcript (JST) (United States Army, 2014). The JST is a military transcript that lists military coursework and occupations in terms of equivalent college credits as evaluated by ACE. The primary purpose of the JST is to assist soldiers in obtaining college credit for their military experience (American Council on Education, 2014).

Portfolios, which can best be described as a written narrative describing a particular training, is another method of prior learning that is assessed at the college level. A portfolio is not a traditional college paper, nor is it solely a listing of job experiences. It is a carefully thought-out, well crafted, and focused document designed to convince a faculty evaluator that a student has gained outside the classroom knowledge, abilities, and skills that are at a minimum equivalent to the knowledge gained by students who have completed college level coursework. The student must demonstrate a 70% (C) mastery to receive credit, and is graded on a credit/no credit basis and does not affect the student's grade point. This system is often used to help students who have achieved learning outcomes that are equivalent to learning outcomes in classes taught by colleges and universities to petition to receive credit for those classes. To protect the academic integrity of the awarding of college credit for portfolios, the required supporting documentation for submission to earn equivalent college credit is extremely high, usually containing 5 or more pieces of documentation detailing experience (Zalek, 2013).

The next method of prior learning used at the collegiate level is the Course Challenge Exam, sometimes called the "Departmental Exam". It is designed for the individual who may already know the material covered in an introductory level course offered at college or university. The Course Challenge Exam provides an alternative to traditional classroom course work and is written by the course instructors or academic departments, which directly relates the tested material to the course being challenged. Such exams are used to determine student competency in a specific course of study. Each department determines the specific credit award, and the acceptable passing grade, which must be "C" or above.

Another form of prior learning assessment, the DANTES Subject Standardized Tests (DSST), offer students a cost effective, time saving way to use their knowledge acquired outside of the classroom (perhaps from reading, on-the-job training, or independent study) to accomplish their educational goals. The DSST test taker audience has changed over the years, but as of 2006, DSST exams are available to

anyone who is seeking college credit outside the traditional classroom, including college students, adult learners, high school students and military personnel. Over 2,000 colleges and universities recognize the DSST program and award college credit for passing scores. Colleges, universities and corporations throughout the United States and in some other countries administer tests year-round.

The test fee to take a DSST is as low as \$80 at many institutions and administering schools may charge a test administration fee according to their school policy (usually in the \$15-\$25 dollar range). There are several upper and lower-level courses available in a variety of subjects – everything from social sciences to history to business. Because the cost of classes per credit hour can reach into the hundreds of dollars, DSST exams offer a steep cost savings compared with a typical \$700-750 three-credit class. DSST exams can not only save you money, but can also accelerate degree completion. The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated and recommended college credit for all 30+ DSST exams (Prometric, 2014).

The last area of Prior Learning Assessment to be discussed is the College Level Exam Program, commonly referred to as CLEP. According to College Board's CLEP website (College Board, 2014), over 1,700 college test centers administer CLEP exams, and said exams are accepted at roughly 2,900 colleges and universities. Approximately 176,000 CLEP exams were administered in the academic year 2013-2014, with well over seven million exams taken by students since the inception of CLEP exams in 1967. This credit-by-examination program serves a diverse group of students, including adults, non-traditional learners, and military service members (of that 176,000, approximately 60,000 were military service members). Not only does the program serve a broad-based cohort, but it also validates knowledge learned through independent study, on-the-job training, or experiential learning, and translates that learning into college credit that is commonly recognized. The 33 CLEP exams are broken down into five general categories: History and Social Sciences, Business, Composition and Literature, Science and Mathematics (including STEM related courses such as Chemistry and Calculus), and Foreign Languages. Much like the DSST exam, the cost of the exam (also \$80) when compared to credit hours, books, and fees make CLEP a very economically friendly alternative to unnecessary classes.

Amy Sherman, Associate Vice President for Policy and Strategic Alliance Alliances at the Council for Adult and Experiential Learning (CAEL) sums up what others in the education view as the value of prior learning. She states

Many people come to higher education with college-level learning that has taken place outside of the traditional

higher education structure. Think of all the learning that takes place at employer training facilities, in the military, or other means. Some of that experiential learning is equivalent to what takes place in the classroom, and the learning outcomes are measurable. That is important to remember: this is not simply giving credit for experience, but for the learning outcome (Advisory Committee on Student Financial Assistance, 2012, p. 35).

At Montclair State University in New Jersey, this measuring of outcomes as they relate to the STEM classroom have been set in motion. Montclair has created a "Checklist for Inclusive Teaching in STEM Disciplines" that begins with a system titled *Accurate Problem Definition*. It functions as an inclusive teaching framework for science, technology, engineering, and math. Simply put, clearly identifying goals, rationales, starting conditions, appropriate design, and principles of implementation to achieve optimal learning outcomes (Reddick, Jacobson, Linse, & Yong, 2007). This process is then expanded at Montclair by the inclusion of *Accurate Solution*, a sort of part II in regard to the Inclusive Teaching model. *Accurate Solution* is identifying problem-solving procedures as goals and creating exams that focus on recall of detailed facts. By establish students' prior knowledge and skills coming into a course, Montclair's STEM curriculum has successfully been able to bridge any gap between recognized prior learning skills and classroom/curriculum needs.

CLEP Research and Student Success

While the Montclair model is certainly thought provoking, I wanted to see what outcomes would occur in regard to my own test takers at North Lake College (NLC). In the fall of 2011, 67 NLC students tested via CLEP and were placed into at least one of the following STEM-related classes: College Algebra 1314, Pre-calculus 2412, Calculus 2413, Chemistry 1405 and Biology 1406. By the fall of 2013, when many students are preparing to graduate, transfer, or complete a certificate program, 57 of the "STEM testers" had been retained: meaning they were enrolled or were graduating/transferring. That translates into an 85 percent retention rate from the original number of 67 entered college. By contrast, the retention percentage of the non-PLA 439 college students in those same STEM courses in fall 2013 was only 58 percent. The overall GPA of those 57 PLA/STEM students who were retained after two years was 3.23, while the overall GPA for the non-PLA/STEM student was 2.78. While that data were certainly encouraging, determining true student success often means looking deeper into what happens in a student's academic career. To do this, I examined how those PLA/STEM students fared in subsequent STEM related courses when compared to the non-PLA/STM students we had examined before. The findings were encouraging: The PLA/STEM student GPA in subsequent STEM-related courses was

3.22, while the non PLA/STEM student GPA in subsequent STEM-related courses was 2.83. Keep in mind the same cohort of 439 students was sampled and spread across the five class disciplines (College Algebra, Pre-Calculus; Calculus, Chemistry, and Biology).

PLA, STEM and the Workforce

It is not uncommon to see or read numerous articles detailing how the number of new scientists and engineers graduating from U.S. universities is significantly declining (National Math and Science Initiative, 2013). The coinciding of the current shortage of scientists and engineers in the U.S. and the flux of technically-trained departing servicemen rotating out of the military offers an important opportunity for US employers, including the Tennessee Valley Corridor's (TVC) "Vets to Valley" Initiative. "Due to their maturity, technical training, and hands-on experiences, these individuals separating from the military in the next five years provide an excellent near-term source of potential engineers for the country" (Tennessee Valley Corridor, 2013, p. #). According to the TVC, these returning student veterans offer multiple benefits to federal agencies and private sector companies, including but not limited to access to experienced, skilled workers with active security clearances, and also creating the opportunity to grow their pool of experienced engineers from a non-traditional population (thus increasing the overall number of scientists and engineers in the region). And finally a contractual relationship and service agreement with participants who accept the terms of the NEW-STEM program can create a lasting, meaningful relationship between the veteran workforce and the TVC.

In today's work of decreased funding, lower retention and graduation rates, and increased scrutiny from a government perspective, it is time higher education use all of the tools in our arsenal to create strong veteran student success in those increasingly valuable STEM fields and allow that group to achieve the dream of a college education. Prior Learning provides a tool to facilitate veteran's achievement and workplace success.

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Best Practices and Assistive Technology Tools for Students with Learning Disabilities Used in a Career and Technical Education Classroom

by Sadie L. Aronson, Betsy Orr, Vinson Carter and Maggie Beachner, University of Arkansas

Introduction

Incorporating special education students into the general education classroom has become increasingly common in today's classrooms. The general education classroom is now considered the least restrictive environment for students with learning disabilities. Therefore, it is becoming more common for schools to practice complete inclusion. Inclusion is the full-time placement of students with disabilities into a general education classroom.

By practicing inclusion in the classroom, general education teachers are becoming the main source of instruction for the students with learning disabilities, as opposed to a special education teacher. While some general education classrooms still have a special education teacher assisting the general teacher, the general education teacher is responsible for presenting the content of the class to all students. General education teachers may feel a lack of preparation in their ability to teach students with disabilities (Berry, 2006).

With increased high expectations and demands on students with learning disabilities there is a need for instructional alternatives to help these students succeed (Seok, S., DaCosta, B., Kinsell, C., Poggio, J. C. & Meyen, E. L., 2010). There are several best practices that have been established in order to aid general education teachers in adapting to this classroom dynamic. Teachers should be aware of these practices because it is becoming inevitable that teachers will be practicing inclusion in the classroom due to the increase of students with learning disabilities. Inclusion should not hurt either group of students; each group of students should receive equal attention and equal opportunities at succeeding in the classroom.

Not only has inclusion become more popular, but assistive technology use is also on the rise. Assistive technology is defined as "any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, improve functional capabilities of individuals with disabilities." (Center for Parent Information and Resources, 2009). Assistive technology comes in different forms, whether it is through a learning software program or through hardware, such as a Braille keyboard. An example of assistive technology software would be a voice recognition software program that can assist students who are physically unable to type using a keyboard. The technology enables students with learning disabilities to work more efficiently.

Review of Literature

Students have several different teachers and are with different students in nearly every classroom. The business education classroom is also unique in that it is a specialized subject and technology is used throughout the entire curriculum. Kanellis (2008) found that most general education teachers were receptive to team teach with other general education teachers; however, they were not as willing to team teach with the special education teachers. While special education teachers have a more positive attitude toward inclusion than general education teachers, the teachers differed on logistical issues regarding inclusion (Parker, 2009).

The range of learning disabilities amongst students greatly varies. Students typically have a difficult time keeping track of daily work and completing long term assignments. (Steele, 2008). This may result in difficulties understanding presentations, graphics, lectures, or discussions. Students will also have difficulty concentrating for long periods of time (Steele, 2008). This presents an issue when it comes to assessments, problem solving, and application of knowledge. Students with learning disabilities also possess at least one low basic academic skill and may have difficulty with organization and attention (Steele, 2008).

Learning Disabilities

Students with learning disabilities now make up 5% of the total school population, and more than half of the students enrolled in special education services also have a learning disability. This makes students with learning disabilities the largest and fastest-growing group of students. Learning disabilities in the classroom can include academic, language, communication, perceptual and motor difficulties.

Students with academic and learning difficulties often have trouble with memory, attention, and organizational skills. Reading, writing, and math deficiencies are also often associated with academic difficulties. This can lead to students avoiding assignments and increasing trouble with comprehending directions or information.

Language and communication difficulties are other common characteristics of students with learning disabilities. Students may have a hard time comprehending, learning new vocabulary, expressing themselves, and pronouncing new words. Non-verbal difficulties are also common.

Understanding body language and processing and understanding interactions are a constant struggle for some students. These students rely on their verbal skills only, resulting in failure to assess the reactions of the people they are communicating with and their speech is often very flat.

Students with perceptual and motor difficulties have difficulty recognizing and interpreting visual and auditory stimuli. Students may not be able to copy text from the board, decipher between different numbers or shapes, or working on a task with multiple steps. Gross and fine motor difficulties are also common. Poor balance, clumsiness, difficulty drawing or holding a pencil are all examples of these difficulties. Hyperactivity is one of the main motor problems found in students with learning disabilities. Attention deficit disorder (ADD) affects a student's ability to pay attention and to stay organized and motivated. All of these difficulties can negatively affect student progress and learning.

Purpose

The purpose of this study was to determine the best practices and assistive technology tools used in business education classrooms with students with learning disabilities.

Research Questions

This research study was designed to answer the following questions:

1. How do business education teachers incorporate assistive technology tools in the classroom with students with learning disabilities?
2. How do the business education teachers incorporate best practices in the inclusion classroom?
3. How do the business education teachers within inclusion classrooms ensure other students do not feel neglected?

Methodology

A survey was designed to examine the best practices and assistive technology tools used in a business education classroom. The study focuses on how teachers use these tools and practices to accommodate students with learning disabilities. The participating subjects were business education teachers in secondary high school settings. The survey included a variety of questions focusing on the best practices the teachers used in their classroom, as well as how they incorporate assistive technology into their classroom. The 10 survey questions were:

1. What subjects are you teaching for the 2012-2013 school year?
2. How many years teaching experience do you have?
3. What types of learning disabilities are identified in

your classroom?

4. Is there a special education teacher present in the classroom?
5. How often do you have conversations with the special education teacher about your students with learning disabilities?
6. Which of the best practices listed below have you used in your classroom this year?
7. Please elaborate on how you incorporate these practices in classes with students with learning disabilities.
8. What assistive technology tools do you use in your classroom to assist students with learning disabilities?
9. How are you able to ensure students without disabilities do not feel neglected in your classroom when it comes to using the assistive technology tools?
10. For each best practice marked, what assistive technology tool did you use, if any?

Findings

Of the ten teachers surveyed, 3(30%) of teachers taught one course, 3(30%) taught three courses and 4(40%) taught four or more. Ninety percent of the instructors taught a Computer Applications/Keyboarding class during the school year. Thirty percent taught Digital Communications, 20% taught an Accounting/Finance class, and 20% taught Business Law and Retailing. Ten percent taught either an Advanced Spreadsheet, Advanced Database or Management class.

Thirty percent of the teachers had taught between 4-9 years and 21-30 years, 20% had taught for 31 or more years, and 10% had taught for 10-15 years and 16-20 years. All of the teachers who had taught for 4-9 years, taught only one course during the school year. The other seven teachers with experience of 10 years or more each instructed at minimum two classes.

The survey investigated the types of learning disabilities that were present in the classroom. Teachers could select four types of learning disabilities including learning and academic difficulties, language and communication difficulties, perceptual and motor difficulties, and social-emotional and behavioral difficulties. Nine (90%) of the teachers reported learning and academic difficulties in their classroom; 9(90%) reported social-emotional and behavioral difficulties, 8(80%) reported language and communication difficulties and 7(70%) reported perceptual and motor difficulties. The percentages are more than 100% due to several teachers reported more than one learning disability.

Teachers were asked to report how often special education teachers were present in the business education classroom.

Although every teacher reported having at least two learning disabilities present in the classroom, 6(60%) reported to never having a special education teacher in the classroom; 3(30%) stated a special education teacher was present rarely and 1(10%) stated they had a special education teacher in their classroom often. No participants reported having a special education teacher present at all times.

Additionally, all of the teachers reported speaking with special education teachers at some point during the school year. Four (40%) of teachers stated they spoke with the special education teacher weekly and 4(40%) listed they spoke monthly. The other 2(20%) indicated they spoke once a semester. None of the teachers reported speaking daily or not at all with special education teachers.

Teachers were asked to provide a variety of responses regarding the best practices used in their classrooms. The response choices included: (a) adjusting time allowances, (b) collaborated team teaching with special education teacher, (c) graphic organizers, (d) group work, (e) individualized instruction, (f) learning projects, (g) listing key concepts on the board, (h) mnemonic devices, (i) other students in class share class notes, (j) peer instruction/tutoring and (k) providing summaries of key ideas in handout form.

One hundred percent of the teachers reported using at least two of the best practices: adjusting time allowances and peer instruction/tutoring while 9(90%) reported using individualized instruction and group work. Seven of the ten teachers (70%) reported using graphic organizers. Five (50%) of the teachers reported using listing key concepts on the board and having others students in class share class notes while 4(40%) of the teachers reported using learning projects. Collaborated team teaching with special education teacher was reported by 3(30%) of the teachers and only 1(10%) reported using mnemonic devices.

Teachers were then asked how they incorporated the best practices for students with learning disabilities in their classrooms. "Grouping special education students with regular education students for projects," establishing a "seating chart for mixing special education and regular education students" was reported by Teacher #1. Teacher #2 reported using all of the best practices, while Teacher #3 used peer helpers. "Grouping students and having the special education student report to their SPED teacher during seminar time," and "the students comes to me for assistance after school for one-on-one assistance" was reported by Teacher #4. "Individualized instruction" was reported by Teacher #5. Teacher #6 reported "extended time and/or reduced assignments. "Pairing students" was reported by Teachers #7 and #8. "Group work" was also

reported by Teachers #9 and #10. Overall, group work and pairing students seemed to be the most common response.

When teachers were asked about the assistive technology tools that they use in their classrooms, the majority 6(60%) of the teachers reported using no assistive technology tools, despite 100% of these teachers having learning disabilities present in their classroom. Audio recordings were reported to be used by 2(20%) of the teachers. One (10%) of the teachers reported using a customized dictionary or other home language support/tools, digital tools, screen reader text-to-speech/speech-to-text software, and voice recognition software.

Teachers were then asked how they are able to ensure students without disabilities do not feel neglected in the classroom while assistive technology tools were being used. Two teachers responded that all students are included in the classroom because all students are allowed to use some type of technology while learning, so no child is singled out regardless if they have a disability or not. One teacher stated that dividing her time equally among students reduced any neglect a student may feel. Another teacher credited the self-paced atmosphere of her classroom to give her the ability to work one-on-one with and monitor the students who may need the assistive technology tools. The rest of the teachers indicated this was not a problem; however, they did not state what they did to ensure students without disabilities did not feel neglected in the classroom.

Finally, the teachers were asked to connect both the best practices and their use of assistive technology tools. Of the three teachers who answered the question, each detailed how they merged best practices with assistive technology tools. One of the teachers reported using audio and visual recordings through Microtype software when using graphic organizers and individualized instruction in their classroom. Another teacher stated she used voice recognition software when utilizing a variety of best practices, including individualized instruction, and learning projects. According to one teacher, digital tools accompanied group work and speech-to-text software was used when teaching mnemonic devices.

Implications

The use of assistive technology tools in the classroom is vital to the learning process for students with learning disabilities; however, these tools may provide a benefit to all students. Based on the findings of this study, the researchers recommend that career and technical educators seek out professional development opportunities to implement assistive technology tools and best classroom practices into the classroom. This would be an added benefit to all teachers to improve classroom instruction and accessibility. Furthermore, teacher preparation programs should consider providing opportunities for instruction on assistive technology tools and best practices for pre-service teachers.

Conclusion

The majority of the teachers surveyed in this study utilized at least two best practices in their classroom for students with learning disabilities: adjusting time allowances and peer instruction/tutoring. Because of the technology tools readily available in the business education classroom, the majority of the teachers indicated that a specific assistive technology tool was not utilized. However, several teachers reported the use of audio recordings, voice recognition software, and screen reader text-to-speech/speech-to-text software.

Limitations of this study included a small number of participants, specifically in one area of career and technical education. The researchers suggest that further research be done in all areas of career and technical education to explore best practices and use of assistive technology tools available and in use in the classroom. Additionally, this research could be expanded to include all areas and levels in education to best serve the needs of all students.

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SOUTHEAST TECH 2320 N Career Avenue Sioux Falls SD 57107

Created By Student: Abigail Englin

Region 3 Conference Hosted by Gateway Technical College, Kenosha Wisconsin, President Bryan Albrecht

Snap-On Tool \$5000 sponsor

Sunday October 25th

Evening reception

Monday October 26th

7:30-8:15 am Continental breakfast at the Marriott
Buses depart for the SC Johnson iMET Center at 8:15am

8:45-10:00 am Opening session - Hosted in partnership with SC Johnson: A Family Company
Creating a Culture of Innovation & Social Engagement- Matt Wagner, SC Johnson: A Family Company

10:00 am Exhibits and refreshments

10:15 - 11:45 am Workshops

- A. U.S. Fab Lab Network- Gateway Fab Lab experience
Participants will learn about the MIT Fab Lab network and explore hands-on 3D printing, laser engraving, optical scanning and much more.
- B. Digital Electronics- Gateway's NIDA Training Lab
Participants will learn about NIDA's national certification programs and explore the new 21st century digital electronic lab.
- C. Mechatronics- Gateway's Mechatronics Technology Lab
Participants will learn about machine to machine interface and test their theory in a state of the art mechatronics laboratory.
- D. Telecommunications- Gateway's BISCi telecommunications Lab
Participants will splice fiber optics cable and explore the science of communication through the use of light.
- E. Precision Measurement- Gateway's Tarnowski Hall
Participants will discover and test their skills with the new Starrett Precision Measurement certification.

12:00 pm Lunch- sponsored by NC3
Presentation will include an overview of the National Coalition of Certification Centers- Roger Tadajewski, Ex Director of NC3

1:30 pm Board bus to Gateway's Horizon Center for Transportation Technology- Hosted in partnership with Snap-on, Inc.
Horizon Center tour, group presentations/demonstrations include Chrysler Certification program, Torque certification, Multi-meter certification, automotive diagnostics certification.

4:00 pm Board bus back to hotel

5:30 pm Reception

6:00 pm Dinner- Marriott Hotel
Guest speaker- John Colburn, Skills for America's Future

October 27th

7:30-8:15 am Continental Breakfast

8:15 am Bus and/or participants will drive to Gateway's Kenosha Campus- 30 mins drive.

9:00-11:30 am Three groups of tours/presentations

- A. Trane Energy Labs
Participants will be hosted by Trane representatives and learn about the Trane Building automation system certification program. Gateway's Energy program consists of a Residential training lab, Commercial HVAC training lab, refrigeration lab, building automaton lab and Boiler systems training lab.
- B. Center for Sustainable Living
Participants will enjoy this "House" that was converted into a living laboratory for youth and adults. This center consists of an outdoor classroom, urban gardens, nature walking path, renovated house using recycled materials, geo, solar and wind energy systems.
- C. Pike Creek Horticulture Center
Gateway has partnered with Bach Tools to develop a unique educational facility know at the Pike Creek Horticultural Center. The center is the home of the college's Urban farm, arboretum, green house, zip-grow hydroponics and much more.

11:45 am Closing lunch- Madrigano Center
Box lunch will be provided to all participants with a closing Q&A from ATEA, Gateway and NC3 faculty and staff.

1:00 pm Adjourn

**Registration opens in August on the ATEA website.
www.ateaonline.org**



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opportunities at the following rates:**

- Platinum: \$10,000**
- Gold: \$5,000**
- Silver: \$2,000**

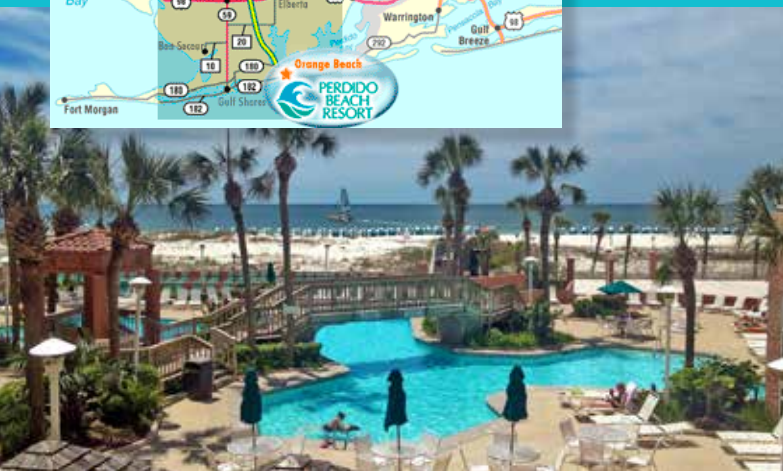
Events and reception sponsorships available. Contact the national office at 612.381.3315 or info@ateaonline.org for more information or go to ateaonline.org under Trade Show.



ateaonline.org

To Contact the National Office call **612.381.3315** or info@ateaonline.org

Save the Date



53rd ATEA national conference on technical education 2016 hosted by the Alabama Community College System

Co-Chairs

- Chancellor Mark Heinrich
- Bethany Clem Shockney, Dean of Business, CIS, Technologies and Workforce Development at Calhoun Community College, Co-Director of the Alabama Robotic Technology Park, Decatur Alabama

March 9-11 Orange Beach Alabama, Perdido Resort

- With industry tours planned for Airbus, AUSTAL and the Port of Mobile
- Conference room rates available from March 7 to March 13
- To plan for the conference registration opens in August