

ATEA

American Technical Education Association

Journal

Krista Hageman	Darrell Kesler			
Jo Penning	Jodi Kor	Mike Leary	Libby McRae	Chelle Travis
Nick Goodnight	E J. Daigle	Christine Ousley	Kent Powell	Tiffany Howe
Denise BuBois	Joelle Boshhart	Jade Hollister	Sarah McCormick	Sara Nolen
Kristen Hybertson	Anita Foor	Jim Thompson	Chelse Dupre	Ryan Voorhees
Pierre Devaux	Carolyn Ragsdale	Janna Cowling	Florent Salako	Chris Posey
Cait Cramer	Frank Garro	Rich Piper	Eugene Silberstein	Christi Keffler

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**Best Practice
Heroes**
March, April, May 2020

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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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James King, President, Northeast State College, Blountsville, TN, Retired

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Dr. Lin Zhou, President, Bates Technical College, Tacoma, WA

Ms. Dana Wolff, President of Regional Council Presidents, President of Region 5, Instructor of Financial Services, Southeast Tech, Sioux Falls SD

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Region 1: Dr. Jon Connolly
President Sussex County Community College, Newton, NJ

Region 2: Cliff Wightman
Tennessee College of Applied Technology, Crossville, Tennessee.

Region 5: Dana Wolff
Southeast Technical Institute, Sioux Falls SD

Region 6: Marie Price
Director for Workforce Training and Community Education, North Idaho

American Technical Education Association

Values:

To communicate the role and importance of technical education

To share best practice

To build professional relationships

To identify trends that effect technical education

Mission

The organization is dedicated to excellence in quality of postsecondary technical education focusing on practical teaching ideas and best practices. ATEA recognizes outstanding performance and leadership and provides a network for career connectivity.





Dear ATEA Members,

This edition of the ATEA Journal marks a key year in the life of the country and ATEA. The pandemic that closed or limited on-campus instruction, labs, and supervising of testing skills, brought forward ATEA's members' strengths, commitment and agility and of those who serve and work in technical colleges and institutes.

This edition is a "Wall of Fame" of those in 2020—March to June who shared in "Best Practice Calls" how to respond and to move instantly into a virtual mode to provide and deliver technical education. Their photos are on the cover and in the publication on pages 17-20. The participants on the "Best Practice Calls" were from 46 states numbering 1100 who joined

calls on manufacturing, seven areas of allied health, diesel and auto services, welding, geriatric services, HVAC, virtual labs, distance learning, and more. Thank you to Amatrol and Dassault Systemes for providing high level examples of how to move to virtual training and labs. Thank you to ESCO sponsor of two HVAC calls bringing in 140 participants for each call. Thank you to Tiffany Howe, Vice President for Teaching and Learning at Western Dakota Technical Institute, for organizing best practice calls on 7 allied health areas. Thank you to Dunwoody College of Technology's Dean of Manufacturing and Robotics, E.J. Daigle and to Ivy Tech Community College, Fort Wayne Indiana's Dean Dr. Darrel Kessler, who were the first to offer a "Best Practice Call" on how to function in their area when the shutdown started, March 18. Thank you to Kent Powell, of Amatrol who provided virtual lab examples.

ATEA moved forward to a virtual national conference, one of the first in the nation. Dr. Aaron Fichtner, President of the New Jersey Council of County Colleges and Dr. Jon Connolly, President of Sussex County College, New Jersey, co-chairs of the conference led the planning with the support of ATEA President Sue Smith who masterfully led the two day conference. The same qualities of dedication, expertise and commitment were found in the presenters who are pictured on pages 8-9. Mr. Dave Daly, President and CEO of PSE& G's keynote summary is on page 21. He outlined the energy sector's workforce needs and the extensive plans and commitments of his organization. Matt Kirchner, Columnist 360 LLC, a general session speaker provided his slides on page 24 which are a quick and thorough view of workforce needs and jobs in what he terms an "Infinity.0-Beyond Industry 4.0."

The ATEA Awards program was celebrated virtually. The winners and finalists are featured pages 10-17. A thank you to the Builders League of South Jersey for the \$250 scholarship presented to Brynn Pavilica construction student. The 3 D Futures Competition awards were made. These will be featured in the next ATEA edition.

The ATEA Journal is a reviewed journal, Donald Wilcher's article on "Frame Work for Competency-Based Learning," is in the edition. Mr. Wilcher is the Director of Manufacturing and Technology at Jefferson State College, Birmingham, Alabama. Thank you to academic review editor Dr. Nasser Razek, University of Akron for leading the review. Thank you to Mr. Wilcher for submitting the article.

Technical education is both bedrock and future forward. Thank you for participating in it and supporting the American Technical Education Association.

Best regards,

Sandra Gehlen Krebsbach, Ph.D., M.S.



Sue Smith
Ivy Tech College Vice President,
Advanced Manufacturing, Engineering,
& Applied Science

Dear ATEA Members,

Reflecting on the past year and looking forward to the coming year, it occurs to me that most of the things happening today are reminiscent of historical events. We have had plagues, riots, political unrest and disasters throughout history. What changes is how we deal with them and what we learn. From what we learn, we grow and teach others. At ATEA we have grown innovating new ways to connect and support our members as education became more virtual. Our conferences and best practice sessions demonstrated the way an organization can and should transform quickly to connect and support members and fulfill its mission and purpose. I could not be more proud of an organization than I am of ATEA. It has been my honor to serve as president for the last two years. I look forward to Jon Connolly's leadership and all who will come after him. Our lives may seem a bit different for now, but the way we are

dealing with the changes and learning and growing from them is most critical. We will get through these difficult times and those that will surely come in the future. As educators and those affiliated with technical education, we know we can count on ourselves and each other through ATEA. In the coming year let's increase the reach of ATEA inviting non-member colleagues, colleges, and businesses to join with us to ensure technical education and educators always have the support needed.

Thank you to all the members and the amazing board for all your work and all help in continuing to make ATEA a great organization. Again history repeats itself – ATEA has been and continues to be an invaluable asset to all of us because of all of us.

Best Wishes,

Sue Smith

President, ATEA

sgsmith@ivytech.edu

American Technical Education Outstanding Board of Trustee 2020 is:
Brooks Jacobsen, Electric Systems and Robotics Department Supervisor
Lake Area Technical College, Watertown South Dakota

President Michael Cartney, Lake Area Technical College will present the award on behalf of President Sue G. Smith at the ATEA Region 5 Conference.

Board Actions

Confirmed at the Annual Meeting June 3, 2020

The ATEA Board of Trustees Approved the following By-law Changes:

- a. ATEA Vice Presidencies:
 - i. 3rd VP—Awards Committee and Competitions—membership tracking for participation
 - ii. 2nd VP- Liaison to conference committees, national, regional and sponsorships and trade show vendors-
 - iii. 1st VP or VP Membership encouragement and recruiting
 1. “Chair” of the national conference
 2. Outreach for ATEA, membership awareness, categories and renewals,
 3. budget
 4. contribution of memberships
 - iv. Strategy VP liaison with the Business Council and technical/ workforce focus
 - v. Chair of Business Council seat on the Executive Committee to encourage institution and business partnerships or matches
- b. The nomination process to a vice presidency
 - i. Self-nomination
 - ii. Fellow board member nomination
 - iii. “Tap” a national leader with record of commitment to Technical Education and to ATEA or provide the opportunity to show commitment to ATEA with board service prior to vice president appointment.
- c. ATEA Board can conduct business virtually—

Business Council Membership Benefits

ATEA Business Council Co-Chairpersons:



Al Bunshaft, SVP Global Affairs, Dassault Systèmes



Paul Perkins, President and CEO, Amatrol ATEA Executive Committee Liaisons to convene the Business Council

1. Provide guidance and technical expertise for professional development of college faculty.
2. Serve as presenters at conferences and technical training seminars.
3. Provide oversight and judging for ATEA student competitions. Have input to the focus and content of future student competitions. All ATEA sponsored competitions will have half of the judges be from private industry.
4. Develop relationships with colleges and faculty to strengthen your corporate brand identity in the technical education community.
5. Support youth and adults who have selected technical education as their pathway to a career
6. To increase brand identify with technical education and to expand “good name” by promoting technical education and great jobs.
7. Business Council will meet with ATEA board at the national conference.
8. Communicate technical skills needs on a national basis.
9. Business Council members will have a webpage of their members with photo, company logos and links.

To join click on business membership—be part of leadership team those ideas are heard and whose businesses thrive because they know and understand technical education and its role and importance.

Board Appointments

Board Appointments will be made prior to the 2021

Board meetings. The ATEA Board decided to focus on sectors and then make nominations and appointments by sector. The sectors are:

Health Care—each conference has included a tour of a health care facility with emphasis on technology being used and the training from the host technical or community college. 7 Best Practice Call areas with 30 to 60 participants from across the nation. Nursing, Medical Lab Tech, Dental Assistants, Medical Information, Surgical Tech, Phlebotomy, Medical Assistant

IT—cybersecurity, data collection and data analytics in all sectors, networking, systems and AV Engineering for virtual meetings and work, Graphic Arts

Energy—production, nuclear, oil and gas, solar, wind, pipelines, and related technologies.

Advanced Manufacturing; robotics, supply chain, aerospace, lumber to paper products, Agriculture, production, data, related food industry, equipment

Space—travel, training, new products manufactured for space travel

Diesel and Automotive Virtual/AR/VR training

Businesses—digital

Online learning

The board will meet in 2020 to identify Champions of each sector prior to the October 7, 2020 Board of Trustee Meeting.

Executive Committee Leadership 2020

Confirmed at the Annual Meeting June 3, 2020



Dr. Jon Connolly
ATEA 1st Vice President
to be President 2021-23



Mary Kaye Bredeson
Vice President of Strategy

Jon Connolly, Ph.D. is the first vice president of Sussex County Community College, Newton, New Jersey. Prior to this appointment to the presidency in 2015, he served in multiple administrative roles in institutions in Maine and Wyoming. He is a graduate of Colby College, Waterville, Maine, with majors in Biology and Geology-Biology; holds a masters of Forest Science from Yale University School of Forestry and Environmental Studies and a Ph.D. in Biological Science from the University of Maine. He has published many peer-reviewed research articles, and has presented at numerous conferences to international audiences and at many higher education leadership seminars.

Mary Kaye Bredeson is the Executive Director for the Center of Excellence (COE) of Aerospace and Advanced Manufacturing at Everett College, Everett Washington. She was appointed in 2003. Mary Kaye focuses on a targeted industry that drives the state’s economy and is built upon a reputation for fast, flexible, quality education and training programs. The COE provides a central point of contact for industry employers to share their workforce needs with all 34 community and technical colleges within Washington state as well as other education and training providers. The COE for Aerospace has been very successful in implementing numerous state and federal Department of Labor grants focusing on building training capacity and transitioning students into high demand aerospace and advanced manufacturing jobs.

Through her travels to Dubai, Farnborough and the Paris Air Show with the governor’s delegation, Mary Kaye has made vital connections that have furthered her work within the state. Most recently, Mary Kaye was awarded the Dr. Idahlynn Kane Exemplary Leadership Award at the 2013 Chair Academy Annual Conference in Mesa, Arizona. She has been recognized for leading through collaboration.

Renewed Board of Trustees



Dr. Lin Zhou
President of Bates Technical College
Tacoma, Washington



Chelle Travis
Executive Director
SkillsUSA



Sue Smith
ATEA President,
American Technical
Education Association
Board of Trustees



Donald Borden,
President of Camden
County College
Welcome and Greetings



Co-Chair
Dr. Aaron Fichtner,
President of the New
Jersey Council of
County Colleges



Co-Chair
Dr. Jon Connolly,
President of Sussex
County Community
College, Newton, NJ,
ATEA 1st Vice Paul



Perkins, President and
CEO of Amatrol Inc.
*Platinum Conference
Sponsor*



John Welch, Co-
Founder/Workforce,
TALLO
*Platinum Conference
Sponsor*



Dave Daly, President
and COO, PSEG
Keynote Speaker



Matthew Kirchner,
President Lab Midwest
*General Session
Speaker*

BREAKOUT SPEAKERS

Billion Dollar Industry: Creating a Unique Program to Meet the Needs of Industry—Corrosion Technology



Traci Masau, Vice
President of Academic and
Student Affairs, Dawson
Community College,
Glendive, MT



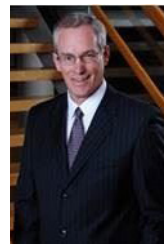
Suela Cela, Assistant Vice
President-Accreditation
and Assessment, Dawson
Community College,
Glendive, MT

CTE Partnerships in Health Care



ATEA: Dr. Lin Zhou,
President, Bates
Technical College,
Tacoma WA

Work-based learning models for technical education: apprenticeships



Dr. James Barrott, Executive
Vice President for Tennessee
College of Technology
(TCAT) Chattanooga State
Community College

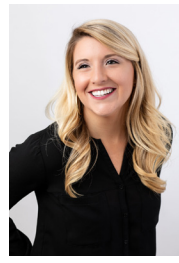


Kevin Schmidt, Director,
Engineering and Technology
Programs, Camden County
College, Camden, NJ

A Deep Dive into the New Jersey Workforce Initiative



Casey Welch
President, CEO & Co-
Founder, TALLO



Jen Porter, Director of
Workforce Initiatives,
TALLO

Engaging Girls in Technical Education: “Girls Can Build Too”



Bridget Reynolds,
Dean, Construction
Programs, Dunwoody
College of Technology,
Minneapolis, MN



Heather Guy, Program Manager,
Construction and Surveying/
Civil Engineering and Facilities
Management, Dunwoody
College of Technology,
Minneapolis, MN

Essential Skills for Future Economy



FESTO Gold Sponsor
Tony Oran, Vice
President of Sales and
Marketing, FESTO

GENERAL SESSION PANEL

Two Year Colleges a Fulcrum of Higher Education General Session Panel



Ray Koukari, Dean
School of Manufacturing,
Engineering and
Information Technology at
Gateway Technical College,
Racine, Kenosha, WI



Scott Mickelsen, Ph.D.,
President of Dawson
Community College,
Glendive, MT



Barbara Walden, Dean of
Technical Division, Truckee
Meadows Community
College, Reno, NV

BREAKOUT SPEAKERS

Training for Smart Factories in a Digital Age



Paul Perkins,
President and CEO
Amatrol—highest
rated speaker of
2019 ATEA National
Conference

The Development of a Technical Education Center through a Public Private Partnership



Dr. Tony Iacono,
President County
College of Morris



Dr. Jon Connolly,
President Sussex
County College,
Newton, NJ

Middle School Career Development: Pathways to Secondary and Post-Secondary



Ken Potthoff, Deputy Executive
Director, Career and Technical
Education of Consortium of the
States, CTECS, Atlanta, GA

Student Success in the time of Transition-what stays and what changes



Dr. Jacob Farbman,
NJCCC Executive Director
of the Center for Student
Success

ATEA Outstanding Technical Student 2020: **Brynn Pavilica**



- Outstanding Student 2020
- Electrical Construction & Maintenance
- Dunwoody College of Technology
- Minneapolis, MN
- Associate of Applied Science in Electrical Construction & Maintenance
- Build Dakota Scholarship
- President of the NECA Student Chapter
- Participant in Green Energy Challenge
- Organized Community Service Project with the Tubman Center

- Participated in Kiewit Women's Leadership Seminar
- Pre-apprentice at Olympia Tech
- Volunteered at Girls Scouts "PowerGirls"
- Taught basic electricity to 4th graders
- SkillsUSA
 - State 2nd Place Residential Wiring
 - Nationals 3rd Place Extemporaneous Speaking



"Her enthusiasm for electrical work and for learning is contagious"

Scholarship Award

Builders League of South Jersey Scholarship Foundation

award to Brynn Pavilica
by

Robert Washburn, President of Builders League of South Jersey Scholarship Foundation

Richard Van Osten, Executive Vice President of the Builders League of South Jersey

ATEA Outstanding Technical Teacher Finalists 2020: **Amanda "Mandy" Hart Case**



- Coplia-Lincoln Community College
- Wesson, MS
- Automation & Control Technology

"It is crucial as an instructor to make a lasting impact on my students."

"Mrs. Case always greets us with a smile and tells us good morning. She makes us feel welcome."



"Mandy is a very motivated instructor who loves to help her students grow and develop the skills."

ATEA Outstanding Technical Teacher Finalists 2020: **Scotty Holland**

national awards



- Chattanooga State Community College
Tennessee College of Applied Technology
- Chattanooga, TN
- Industrial Maintenance Mechatronics

“He has placed his whole heart into teaching students that come into his class.”

“Scotty is an exceptional instructor who takes a genuine interest in the lives of his students.”



“Scotty embodies the best practices for technical instructors and is highly committed to his students and community.”

ATEA Outstanding Technical Teacher Finalists 2020: **Troy Barry**



- Western Dakota Technical Institute
- Rapid City, SD
- Welding Instructor

“Troy possesses an attention to detail and a passion for his trade that is clearly passed on to his students.”



“As an instructor he goes far beyond his own classes by helping who needs it.”

“Troy’s students describe him as engaging, talented, dedicated, and funny, which to me sum up the qualities that make and outstanding technical educator.”

ATEA Outstanding Technical Teacher 2020: **Robert Parker**

“Robert Parker is an outstanding example of how an instructor/manager should be”

- Ivy Tech Community College – Fort Wayne
- Fort Wayne, IN
- Automation & Robotics



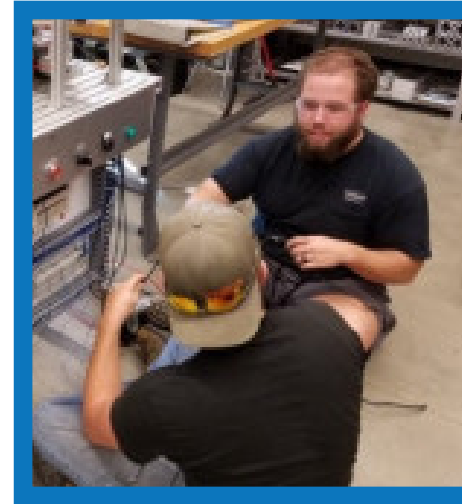
“He will bend over backwards and stay past class hours to help students who might be struggling with a subject.”

“He has a passion for his students to succeed and obtain gainful employment once they become completers.”

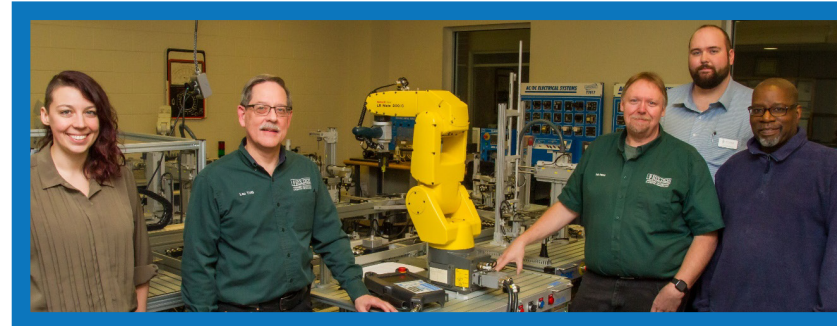
national awards

ATEA Outstanding Technical Programs 2020

Advanced Automation and Robotics *Ivy Tech Fort Wayne*



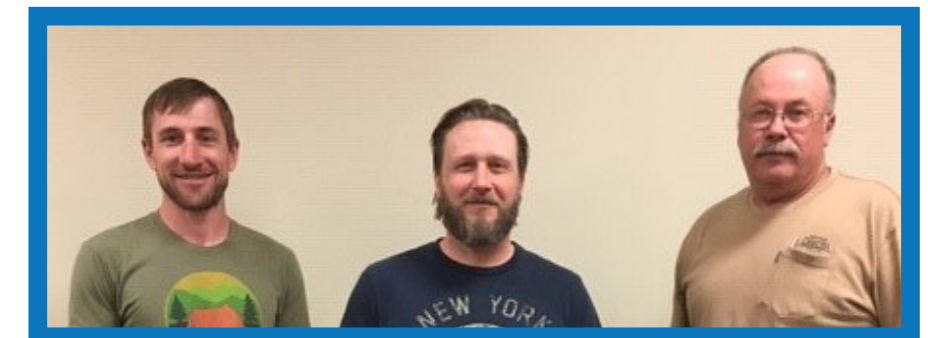
- Project based learning on multiple technology platforms
- Works closely with advisory board to stay current with automation in the workplace
- Volunteers with local STEM organizations



Accepting for the Advanced Automation and Robotics, from left to right: Cait Cramer, Louis Toth, Bob Parker, Jacob Bradshaw and John Mason

Welding and Fabrication *Western Dakota Tech, Rapid City SD*

- Works with advisory board to train to the skill needed on the job
- Instructors instill work ethic, values, and welding knowledge
- Gets students involved in SkillsUSA
- 100% career placement with \$18.50/hr starting wage



Accepting for the Welding and Fabrication Program: Troy Barry, Michael Prugh, Charles Leeper

Silver Star of Excellence 2020 Prairie Lake Healthcare System

national awards



- \$3.1 Million for the Prairie Lakes Healthcare Center of Learning
- \$250,000 donation for a new Anatomy Lab
- Provides clinical experience and internships for Nursing (LPN and RN as well as online), Medical Assisting, Medical Lab Technology, Physical Therapist Assistant, Occupational Therapy Assistant, and Med/Fire Rescue (Paramedic, EMT).
- Sponsors Full-ride Build Dakota Scholarships



Accepting the Award *Shelly Turbak*

- Chief Nursing Officer
- Prairie Lakes Healthcare System

ATEA's Best Practice Call Heroes: Modeling Distance Learning

best practice call heroes

Advanced Manufacturing: March 18, March 20



E J. Daigle
Dunwoody College of Technology



Darrell Kesler
Ivy Tech, Fort Wayne



Cait Cramer
Ivy Tech CC Fort Wayne

Virtual Lab Training Option: March 24, March 26



Kent Powell
Amatrol, North American Manager

Diesel Technology: March 23, April 2, April 9



Nick Goodnight
Ivy Tech, Fort Wayne



Rich Piper
Kansas City Kansas Community College

Construction Technology with HVAC: March 31, April 9



Ryan Voorhees
Ivy Tech, Fort Wayne



Frank Garro
Ivy Tech, Fort Wayne

ATEA's Best Practice Call Heroes: Best Practice Calls

best practice call heroes

Health Care Professions Going Virtual: March 30



Tiffany Howe
Western Dakota Tech

Dental Assistance: April 1



Sarah McCormick
Western Dakota Tech



Sara Nolen
Western Dakota Tech

Surgical Tech: April 1



Libby McRae
Yakima Community College



Jade Hollister
Western Dakota Tech



Krista Hageman
Western Dakota Tech

Practical Nursing and Registered Nursing: April 6



Carolyn Ragsdale
Parkland Community



Christi Keffler
Western Dakota Tech

ATEA's Best Practice Call Heroes: Best Practice Calls

best practice call heroes

Phlebotomy: April 7



Christine Ousley
Western Dakota Tech

Medical Lab Tech Program: April 7



Jodi Kor
Western Dakota Tech



Janna Cowling
Western Dakota Tech

Medical Information Technology: April 7



Joelle Boshart
Western Dakota Tech



Christi Keffler
Western Dakota Tech



Kristen Hybertson
Western Dakota Tech



Chelse Dupre
Western Dakota Tech

Medical Assisting : April 7



Jo Penning
Southeast Tech
College

ATEA's Best Practice Call Heroes: Best Practice Calls

best practice call heroes

Modeling Distance Learning: April 22



Florent Salako
Lead Academic Consultative Program Advisor

Modeling Distance Learning Solidworks: April 29



Pierre Devaux
Senior Sales Manager



Mike Leary
Sales Manager

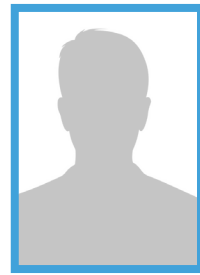
Welding in Virtual Times: April 1



Chris Posey
Wallace State Community College



Jim Thompson
Wallace State Community College



J. Humphries
Wallace State Community College

Delivering Geriatric Activities: May 6



Denise BuBois
Product Developer

How to Help Ensure HVACR Program Completers can "Walk the Walk" in a Socially-Distanced Environment: May 12 & May



Eugene Silberstein
ESCO Group Instructor and Author

Modeling Distance Learning Solidworks: April 29



Chelle Travis
SkillsUSA Executive Director



Anita Foor
SkillsUSA Senior Manager of Curriculum and Instruction

ATEA National Conference, June 2, 2020

Dave Daly, President, PSE&G Utilities and Clean Energy Ventures



Dave Daly
President, PSE&G Utilities and Clean Energy Ventures

From Easton, Pennsylvania, Dave Daly attended New York Maritime College, earning an Electrical Engineering degree in 1983. He began his career with PSE&G where he has been for 37 years.

He has held leadership roles at this largest utilities in New York and New Jersey and now is to lead PSE&G's transition from pipes-and-wires power and utilities company to its future as one of this country's clean energy leaders.

Public Service Enterprise Group (PSE&G) Headquarters, Newark, New Jersey

Founded 117 years ago, Newark, New Jersey, serves New Jersey's largest cities, follow the New Jersey Turnpike and Suffolk and Nassau Counties in Long Island, 3.5 Million customers. PSE&G generates electricity through coal (closing plants), nuclear, natural gas and oil. One of oldest natural gas utilities in the United States. PSE&G is the largest utilities in New York and New Jersey.

Dave Daly:

Good morning, everybody, and thank you very much. I want to thank Dr. Aaron Fichtner, president of the New Jersey Council of County Colleges, along with the rest of the trustees of the American Technical Education Association for inviting me to speak here this morning.

Our long-term goal for PSE&G is nothing short of a transformation that will have meaningful and lasting repercussions for our customers, our environment, and our climate. Such a large-scale overhaul of our company's mission must also be expected to have significant impact on its workforce. Work skills and hard work have been critical to the company's success, and now as our company reinvents itself, we have to consider how to reinvent themselves as well.

So today my goal is to give you an overview of PSE&G, talk about the various programs we're pursuing as part of our clean energy transition, and finally what this means for folks like you and others who are providing our future workforce with the skills they'll need to contribute to the utility of the future.

Mr. Daly outlined their subsidiary Public Service Energy Group, (PSEG) Power, plans, actions and proposed investment in green energy generation.

- Retire the last coal unit in our portfolio by October 2021, completion of PSEG Power's coal exit strategy, which began in 2016.
- Preserve the clean energy resources we already have, our Salem and Hope Creek nuclear power plants

- Invest in the development of renewable energy resources: Solar for All grid-connected solar farms on landfills and brown fields; The Solar Loan program financing for PSE&G electric customers; active consideration of an equity investment in Orsted's 1100-megawatt Ocean Wind project
- Strengthen and hardened the electric and gas infrastructure damaged by Hurricane Sandy (2016) raised, protected or relocated of 26 electric substations and switching stations and now flood mitigation of 16 more substations.
- Replace Natural gas infrastructure, since 2016, PSE&G has replaced hundreds of miles of old cast-iron and unprotected steel pipes with new, more durable plastics.
- Rewiring electrical overhead infrastructure.

We're already New Jersey's clean energy leader, but there is so much more to be done. That's why PSE&G has made a historic proposal to the state of New Jersey, a 4.1-billion-dollar plan we call Clean Energy Future that will transform the energy sector in New Jersey in a number of ways.

Clean Energy Future, is four separate programs that taken together are game changers for New Jersey's energy sector, for this utility, and for the future of our environment and our role in mitigating the impacts of manmade climate change. The four programs include energy efficiency, charging infrastructure for electric vehicles, utility-scale energy storage, and advanced metering infrastructure, sometimes called smart meters.

keynote presentation

The centerpiece of our proposal is a six-year, 2.5-billion-dollar investment in energy efficiency programs... We want to provide homeowners and business owners with energy audits and educational information designed to help them reduce their energy consumption, saving both energy and money...To date, PSE&G has already invested more than \$440 million in energy efficiency initiatives targeting hard-to-reach and underserved entities, such as hospitals, multifamily housing, government buildings, and nonprofits. Those efforts have saved enough electricity to power 38,000 homes and enough natural gas to supply 9000 homes. Participants also benefit from about 250 million a year in energy cost savings.

Under the electric vehicle charging infrastructure, electrifying New Jersey's transportation sector provides a significant opportunity to improve the state's air quality given that more than half of our state's greenhouse gas emissions in New Jersey come from motor vehicles. There are fewer electric vehicles on the road in New Jersey than many other states, in part because of a lack of charging infrastructure. PSE&G is proposing to spend 360 million dollars over six years to vastly improve New Jersey's charging infrastructure. Working with public and private partners, our programs will encourage the installation of state-of-the-art chargers in the home, whether you live in a single or multifamily residence, as well as at work, at school, or while you're on the road. Our program will also provide incentives for electric school buses and an EV charging infrastructure at school districts in PSE&G's service territory. PSE&G will also help fund electrification projects for larger fleets at customer locations like ports and airports and transit facilities.

Under our energy storage proposal, energy storage, also known as batteries, enables better integration of renewable energy onto the grid, provides resiliency for critical infrastructure, and enables electric lines to handle greater capacity during times of peak electric use. Governor Murphy's legislation passed this year contains an aggressive target of 2000 megawatts of energy storage in the state by 2030. PSE&G's proposal calls for \$180 Million over 6 years to build 35 megawatts of energy storage on PSE&G's electric distribution grid.

And finally, our last program under the Clean Energy Future is the Cloud Program, which calls for an investment of nearly \$800 million to replace 2.2 million electric meters with state-of-the-art smart meters.

Smart meters would, in effect, create a two-way always-on communication linking PSE&G with each and every one of its customers... Smart meters improve reliability, lower cost, improve customer service, and reduce PSE&G's carbon footprint.

In our relentless focus on the future, we're creating thousands and thousands of new, high-quality, clean-energy jobs. Programs such as Energy Strong and gas system modernization, not to mention the rewiring of New Jersey's electric and gas delivery systems, are one of the state's leading sources of well-paying, full-time, benefits-providing blue-collar jobs. We estimate it will create 5000 jobs.

We've also grown into the state's leading creator of green clean-energy jobs. PSE&G's Clean Energy Future energy efficiency program, if it's approved as filed, would create more than 3700 direct clean tech jobs in PSE&G's territory and another 1300 indirect jobs. These jobs provide higher median hourly wages and greater union representation compared to jobs held by the U.S. workforce as a whole. What's more, our energy efficiency proposal would generate economic opportunities for unemployed, underemployed, and low-middle-income residents of New Jersey with a strong focus on advancing economic development in our major urban centers. PSE&G is already partnered with the New Jersey Department of Labor and our energy efficiency suppliers to train and employ New Jersey residents to support the launch and delivery of the program.

During the first two phases of the program, PSE&G commits to training and finding jobs for hundreds of residents in the state's largest cities including Newark, Jersey City, Paterson, Elizabeth, New Brunswick, Trenton, and Camden. PSE&G's job training program will ultimately create 2000 jobs for residents of these cities. These activities will be supported by the partnerships we've established with the Labor Department's 22 one-stop centers and with the Newark Alliance. Training facilities will also leverage the network of partners including community organizations such as Isles and the Urban League of Essex County, various county community colleges and vocational institutions, energy efficiency vendor facilities, and PSE&G's own training facilities.

Finally, initial training curriculums have already been developed for the four energy efficiency positions with the highest demand among energy efficiency vendors. These are energy auditors, insulators, air sealers, and energy efficiency

technicians, and we will launch pilot training programs in June, pending the pandemic, of course, in North Jersey and South Jersey for the air sealer and energy auditor positions, and many of these job opportunities don't require a college degree, and training programs are available for bright, hard-working, young men and women as soon as they're out of high school, and, as I said earlier, they pay higher median wages and greater union representation than the population as a whole. We're very proud of that fact.

At our company, more than 40% of our employees will be retirement eligible over the next five years. These two factors create enormous opportunities for you and your students in the field of energy generation, transmission, delivery, and infrastructure.

What we see on the horizon that could affect both your technical education curriculums and your students' job prospects. The utility of the future, which is here today, will have a much broader reach into the communities we serve. The specification and complexity of the equipment, the increased customer and employee expectations with new products and services provided, and the introduction of disruptive technologies and players will require a workforce that is agile, mobile, and adapts quickly to change.

We also expect to see an increase in remotely controlled environments where analysis and repairs are performed from an alternative location. Companies also will increase the use of prefabricated equipment, facilities, and smart grid advancements, continuing to reduce the traditional blue-collar labor efforts. Therefore, the traditional blue-collar worker will be a shrinking position, replaced with field employees with many of the same skill sets that today's office employees possess. The toolkit of the future for the white-collar field employee, which many companies have already deployed, would include over-the-shoulder technology – think Google Smartglasses – to allow a field worker access to technical expertise, schematics and technical drawings, 3D printers on vehicles to create needed parts, tablets with increased imaging software, just to name a few. Computer analytical communication and collaboration skills will be requirements for the future workforce.

The difference will be whether an employee prefers a field or an office working environment or maybe a combination of both. Training facilities will use artificial intelligence simulation technology, creating real-life scenarios, for onboarding new employees and refresher training for seasoned employees. Educators should focus their efforts

on preparing students to become familiar with these advancements to increase their comfort levels and the ability to utilize these tools to the fullest.

Many people today use only a fraction of a capability of technology today due to inadequate training and inadequate product knowledge. Educators should continue to work closely and partner with those of us in the energy industry to ensure that the education will best provide the student the ability to adapt quickly to the workforce.

How we produce clean, green energy and how we help you get it into your home and your business, and especially how we help you save money on your utility bills by showing you how you can use less will be a large focus of our business tomorrow and for the next 117 years.

It is my hope that some of you or the students in your lives will want to be a part of that. At PSE&G, our job is to care about the grid so you don't have to. A safe, green, and reliable energy system is critical to the state for economic development, for a vibrant business community, for education, health and safety, and for a clean, comfortable lifestyle. A functioning energy infrastructure backed by a skilled, diverse, and inclusive workforce is essential for a growing, sustainable New Jersey economy.

Thank you very much for having me today and for allowing me to make these comments, and I hope to be able to answer any questions you might have.

Full transcript available to national conference attendees by contacting ATEA's national office, 612-381-3315.

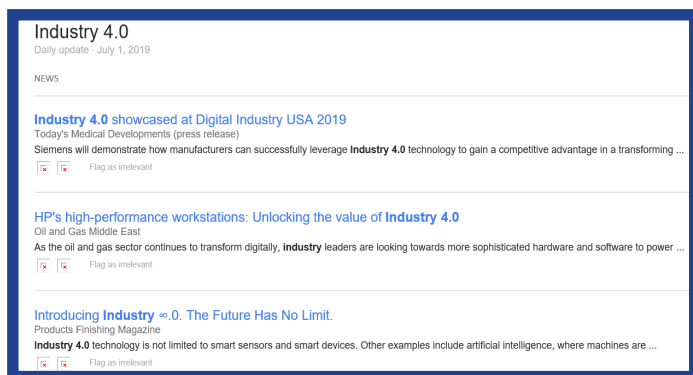
infinity.0 – beyond industry 4.0

Infinity.0 - Beyond Industry 4.0

Matthew Kirchner, Columnist, Profit 360, LLC



“I call this new era Industry ∞.0 or Industry Infinity.0. Continuous industrial innovation and revolution, where technologies both inside and outside of industry converge to create data and technology-driven manufacturing methods and processes of which we never could have previously dreamed.”



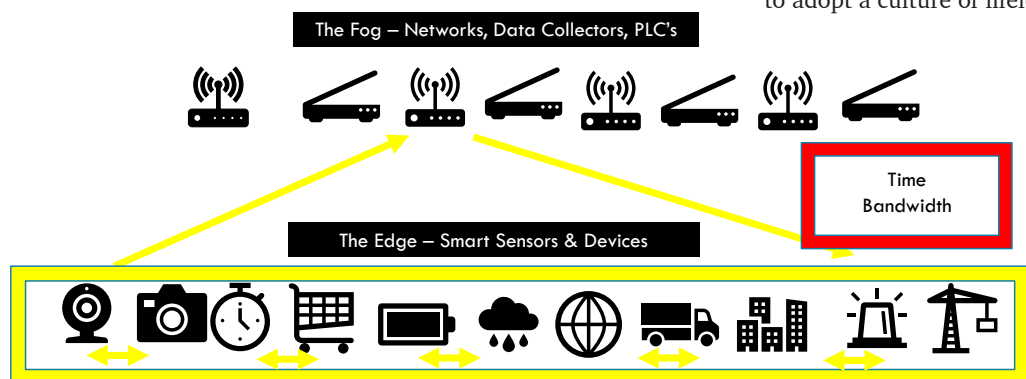
Discrete industrial revolutions are over. We are in the age of Infinity.0, ongoing Industrial innovation. We published this concept in 2019 and Google and the IIoT Report both quickly picked it up and shared this concept with the entire planet.

Industry 3.0 was characterized by “dumb” sensors that communicated data to a PLC or computer network that processed the data and sent it to an output device. This model was constrained by the time it took for information to travel across the network and limited by the amount of bandwidth required. In Industry Infinity.0, because smart sensors and smart devices have embedded intelligence and can communicate with one another these constraints and limitations disappear which enables us to deploy more and more smart sensors and devices.

Infinity.0 will be characterized by technologies like Smart Sensors, Smart Devices, Data Analytics, Digital Twins and artificial intelligence. The world of education must adapt, as must employers who need to adopt a culture of lifelong learning.



- CAN COMMUNICATE
- EMBEDDED INTELLIGENCE



In 5 years we will eliminate waste in the food supply chain. Using technologies like Blockchain and digital twins we will know exactly how much to plant, warehouse and deliver. In 5 years our cell phones will detect pathogens on our counter tops. In 5 years, thanks to advancements in materials technology we will virtually eliminate plastics going to landfills.

Infinity.0 is creating employment opportunities and jobs that never before existed. See this list (below) found in The Digital Workforce Succession in Manufacturing produced by Manpower Group and several of their partners. The new challenge will be preparing our students and learners for these types of jobs.

- Chief Digital Officer
- Cognitive Systems Scientist
- Data Management Scientist
- Manufacturing Analytics Scientist
- Process Simulation Scientist
- Process Simulation Engineer
- Virtual / Augmented Reality System Scientist
- Digital Manufacturing Systems Architect
- IT/OT Systems Engineer
- Manufacturing Cybersecurity Analyst
- Manufacturing Cybersecurity Tester
- Digital Design Engineer
- Collaborative Robotics Specialist
- Digital Factory Automation Analyst
- Digital Factory Automation Manager
- Instrumentation Engineer
- Automated Guided Vehicle Systems Engineer
- Predictive Maintenance Systems Specialist



- ∞.0
- Smart Sensors & Devices
 - Informational Data & Infinity.0 Careers
 - Digital Twins & Artificial Intelligence
 - Education is Adapting
 - Lifelong Learning

- The Future in 5 Years
Food Production & Food Safety**
- Farming Digital Twins
 - Food Chain Unknowns Eliminated by Blockchain
 - Cell Phone Detect Food-borne Pathogens
 - Virtually Eliminate Plastics Going to Landfills

Infinity.0 isn't just affecting education. Employers must prepare incumbent workers to adapt to rapidly advancing technology. This is true whether a member is new to the team or perhaps just a few years from retirement.

Top 5 Agriculture Careers of the Future

- Drone Technologist
- Hydrologist
- Agriculture Communicator
- Food Scientist
- Precision Agriculture Technologist

Source: FFA.org

10 Future Healthcare Jobs to Watch

- 3D Printing Specialist
- Voice Assistant HC Content Specialist
- Robotic Clinical Documentation
- Virtual Hospital Manager
- Precision Medicine Pharmacist
- Epigenetic Counselor
- Finances Planner
- Neurostimulation Specialist
- Data Hacker

Source: Forbes

Top 10 Automotive Jobs of the Future

- Electrical Engineer
- Analytics Expert
- Interaction Designer
- Web Programmer
- Autonomous Driving Engineer
- Customer Care Expert
- Sustainability Expert
- Industrial Engineer
- 3D Printing Engineer
- Alternative Propulsion Engineer

Source: Autocar Professional

Framework for Competency-Based Learning

Donald Wilcher, Director of Manufacturing and Technology



Don Wilcher is an Electrical Engineer, Technical Education Researcher, Instructor, Maker and Book Author. Currently, Don is Director of Manufacturing and Technology at Jefferson State Community and a Fulltime Instructor. He has an Associate of Science in Electrical-Electronics Technology, Bachelor of Electrical Engineering, and Master of Science in Education, Innovation and Technology. He is currently an Education Doctoral Student studying Personalized Learning and Competency Based Instruction. He researches Machine Learning and Artificial Intelligence applications and their impact on Personalized Learning, Competency Based Models curriculum and instructional development in the fields of Mechatronics, Automation, Electronics, and Industrial Maintenance Technologies.

Abstract

The smart factory technician needs technical knowledge and skills in Programmable Logic Controllers (PLCs), electronic sensors, electrical-electronic control circuits, hydraulics, pneumatics, and mechanical drive systems. With such technological literacy, 21st century competencies are required. Therefore, the technical instructor will need to ensure the instructional material meets these learning outcomes through authentic education and hands-on training. To ensure the technical learner enrolled in an Associate of Applied Science (AAS) technical degree program is receiving authentic education and hands-on training, an Industry 4.0 Competency-Based Learning (CBL) model framework is presented in this paper. The framework consists of four nodes: Learning Environment; Competencies; Assessment of Competencies; and Teaching and Learning. The framework provides the instructional infrastructure that delivers engaging subject content material to a technical learning environment. Also, the paper explores assessments and their applications to establishing authentic learning experiences for technical learners. The Five Principles of Assessments will ensure the development of an equitable learning environment, where technical learners achieve mastery learning. In addition, the Five Principles of Assessments provide instructional strategies with personalized learning methods for engaging a culturally diverse postsecondary technical learning environment.

Framework for Competency-Based Learning

Creating an educationally reformed infrastructure that is not time sensitive, but calendar enabled is needed to align with the real world. To assist in the alignment, a framework is required (Figure 1). The framework needs to be embedded with learning theories that provide conceptual guidance in supporting the education structure. Within the framework, a learning model will emerge that will contain the key components to sustain the new education reform. At the core of the framework, a Competency Based Learning (CBL) model will allow learners to obtain authentic knowledge and skills that are appropriate for college and career readiness. The primary focus of the CBL model is to ensure K-12 and postsecondary learners have competencies necessary for the 21st century work environments. According to Achieve (2015), learners should be better prepared today than their predecessors. The objective of this paper is the discussion of an education framework proposal based on a CBL that is suitable for a two-year technical Industrial Maintenance Technology (IMT) degree offering program. The model will be supported using two educational learning theories of Connectivism and Connectionism as instructional methods of engaging learners with the delivered subject content material. Also, principle methods of assessing mastery learning skills will be presented within this proposed CBL framework.

Educational Theories

To ensure technical learners are engaged with onsite and online learning environments, the instructional content material needs to hold their attention. Typical onsite and online learning environments have different approaches to engaging learners with subject material delivered by the educator. The dynamics are different based on intrinsic and extrinsic behaviors of the learners and the learning environments. These motivational behaviors can be impacted based on the amount of instructional material presented at one time. With onsite instruction, the instructional material must engage but not overwhelm the learner's Cognitive Load. Mindtools (n.d.) explained that Cognitive Load (CL) as the amount of information an individual can hold in working memory at one time. CL not only affects onsite learners but online participants as well. Therefore, instructional strategies for engaging diverse onsite and online learning environments need to be developed.

One instructional strategy for engaging learners participating in onsite instruction is through constructivism. Within an IMT learning environment, authentic knowledge and skills are established through engagement based on the relationship between the technical learner and the instructor. The instructional engagement is based on the technical learner performing a task only seeking help when needed from the instructor. The instructor will then demonstrate performing the task with the technical learner in attendance. It is with this constructivist approach to instructing the technical learner is engaged with the subject. Based on the proximity of the technical learner to the instructor a Zone of Proximal Development (ZPD) is established. Solovieva and Quintanar (2016) explained, with Vygotsky's Social Constructivist Learning Theory, a learner can understand a new task at any developmental level with the nearby assistance of the educator. Therefore, ZPD plays an important role within the proposed CBL framework.

The other instructional strategy in which a framework of a CBL model could be of value for an online IMT learning environment is connectivism. According to Wang, et al. (2014) interaction is important in education. Wang et al. (2014) further explained interaction is associated with deep learning, persistence, and other behavioral components that influence affective learning. Therefore, interaction like ZPD allows the online relationship to transform between the technical learner and the educator. Connectivism is the enabling learning theory that allows this technical learner and educator bond to occur through online spaces. Wang et al. (2014) noted, Siemens' Connectivist Learning Theory is based on the use of networks that create interaction among connected participants. For example, IMT learners engaged in a Fundamentals of Industrial Hydraulics and Pneumatics course are instructed on terminology, component identification, physics, and machine systems design through an online Learning Management System (LMS) courseroom. With asynchronous and synchronous methods of online instruction, the technical learner can interact with the instructor. The established connectivism network between the instructor and technical learner allows competencies in the subjects like hydraulics and pneumatics to be obtained remotely.

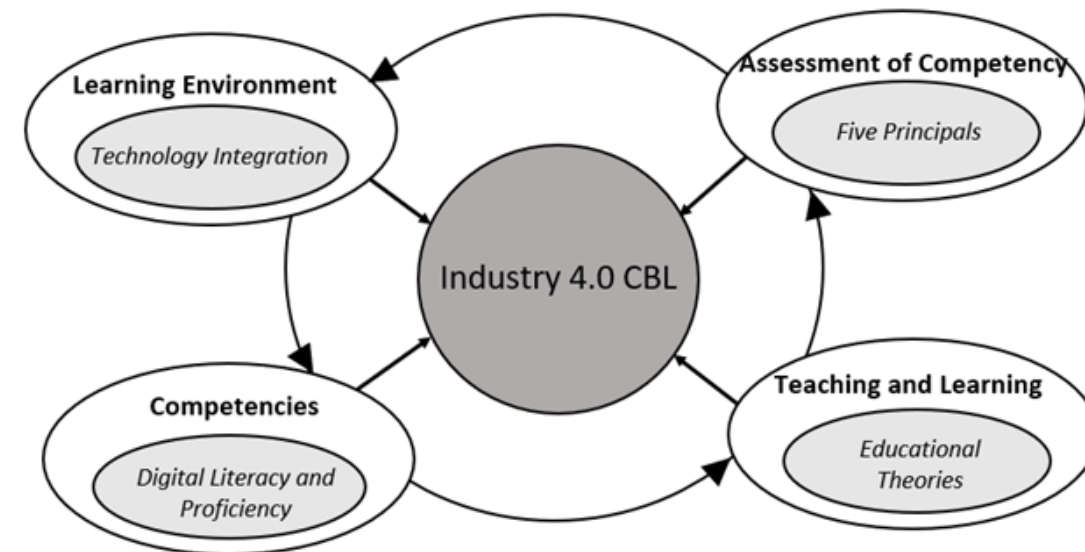


Figure 1. Industry 4.0 Competency-Based Learning Model Framework.

With these learning theories, the proposed framework of a CBL model will allow mastery learning to be achieved by the technical learner. In such a CBL model framework, authentic education and training used in Industry 4.0 can be demonstrated using the competency enabling learning theories. Another criteria that could be used to ensure the learning theory has real world relevancy in the proposed framework is the incorporation of workforce education (WE) strategies (Reider et al., 2016) WE matrix included learning outcomes that were associated with STEM competencies. This matrix would eventually evolve into a rubric use to score STEM learners' mastery learning achievement. A mapping strategy such as this could assist the development of Performance Skills Assessments (PSA) for the proposed CBL model framework.

Diverse Learners

Besides learning theories supporting the proposed CBL model, the framework considers the variety of learning environments with diverse learners. To ensure each learner achieves academic success, instructional methods of engagement need consideration. One instructional method that has had success engaging diverse learners is personalized learning. Personalized Learning (PL) is based on learners embracing their own learning related to interest. Zmuda et al. (2015, p.9) explained that PL as an instructional strategy to engage learners with the subject content material delivered in the learning environment. As an instructional strategy for engaging learners with a variety of learning styles, the educator can provide Differentiated Instruction (DI) among a diverse learning population aided by PL. According to Weselby (2017), learners with cultural differences and diverse learning styles can be engaged with a subject using DI. Besides positively impacting learners through personally engaging lessons, a challenge to the educator is creating the PL plans.

Time commitment is a barrier which presents resistance or apprehension among educators. According to Ripp (2015), the challenge of PL is it becomes an overwhelming task due to the amount of time required in creating the plan. Although PL allows the relationship between the educator and the learner to exist, there is concern about instructional control. Ripp (2015) argued that the educator should not feel as though control within the learning environment is being diminished but distributed among multiple learners. Distributed learning among learners is the less desirable aspect of PL among educators (Ripp, 2015).

Technology Integration

The proposed CBL framework disrupts the current learning model within the IMT degrees and certificates using authentic education and training strategies. To include such strategies, instructional approaches need to consider diverse learning environments. As discussed, PL can provide DI thereby allowing IMT technical learners to take ownership of their continuum of learning. Competency skills in digital literacy and proficiency are required of IMT technical learners pursuing entry level careers as Industrial Maintenance, Electrical, Electronics, or Production Technicians. As with most learning environments, a key aspect in ensuring such digital skills are obtained requires the instructional material to be engaging. Technology Integration (TI) is necessary to achieve such engagement with IMT technical learners. Kopcha (2010) noted that TI assists in the development of establishing communities of digital learning. With TI, postsecondary education can be transformed by incorporating digital literacy competencies within the IMT technical learning environment. Neill (2019) observed that automation and Industry 4.0 consisting of the Industrial Internet of Things (IIoT) is impacting the 21st century workforce. Further, Neill (2019) explained it is necessary K-12 and postsecondary learners are prepared with the digital technology skills required for future work in the 21st century.

In assessing the community college's Manufacturing and Technology Department (MTD) learning environment, it was determined that Laboratory Based Instruction (LBI) provided the necessary pedagogy in instructing IMT technical learners on the use of digital technology skills. The percentage score rating in using LBI was 57.14%. This data point was obtained from a ten- question survey questionnaire developed using Survey Monkey. The industrial system trainers used within the electromechanical laboratory required such competencies as software installation for machine to machine (M2M) communications, electronic circuit diagnostics, and reading technical specifications from online component manufacturers. Also, collaboration among IMT technical learners required developing powerpoint slides for technology discussion presentations. In addition, basic computer skills were enhanced by creating digital circuit models using online simulators (Figure 2). Developing these online digital circuit models requires IMT technical learners having a basic

knowledge of laptop computers and Web 2.0 manipulative skills. As a TI tool for promoting learning engagement, the ten-question survey questionnaire showed the importance of laptop computers in the classroom with a percentage score of 57.74%.

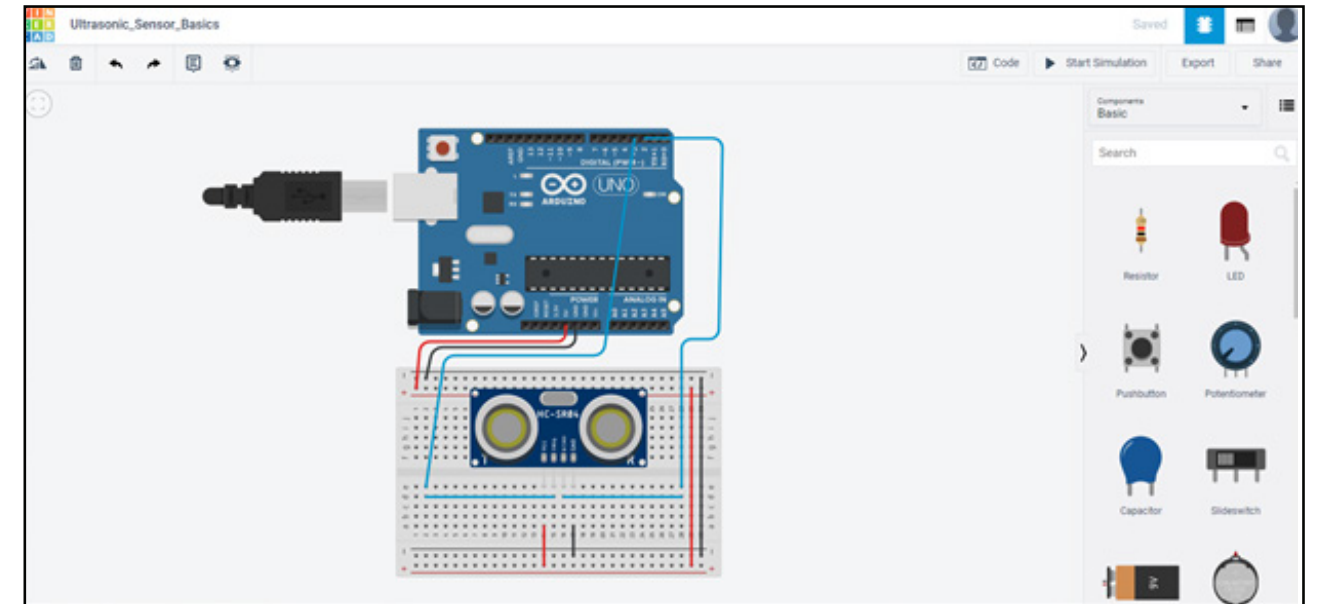


Figure 2. Tinkercad Circuit simulator used to instruct on microcontroller design and computer coding skills.

Assessment Principles

To ensure innovative assessment of mastery learning in IMT technical learners, the proposed CBL model framework includes five principles of assessment. These five principles originated from Schuwirth and Ash's (2013) work on assessing tomorrow's learners. These five principles provide assessment strategies for diverse CBL environments. Also, the five principles place emphasis on enhancing a CBL model being deployed to diverse learning environments.

Assessments and Integrated Competence.

It was observed a Tri-Level Engagement would benefit the community college's education reform to a CBL. As Fullan (2007) explained, a "Tri-Level refers to: school and community, district and state" reform. The education reform would include using a CBL model to authenticate training within a college's curriculum. With this reform approach, authentic training could be integrated within the technical learning environment through participation in Career Technical Student Organizations (CTSO) competitions. The proposed Industry 4.0 CBL model framework Competencies node aligns with this first principle for assessments.

Assessments and Content Domains

With the assessment of the community college's learning environment completed, it was determined that the model of learning consisted of professional certifications and credentials focus. The certifications and credentials have similar organized formats for assessment and delivery of results. Their organization consists of novice questions progressing to advanced technical knowledge inquiries. Moreover, the results can be obtained immediately based on the assessments being online and managed through an LMS. As Schuwirth and Ash (2013) observed, when similar subject content methods are combined, the results of competency-based assessment is more meaningful. Therefore, this second principle of assessment plays a role within the proposed Industry 4.0 CBL framework of the Learning Environment node.

Assessment and All Forms of Information

According to Schuwirth and Ash (2013), no assessment can truly provide meaningful information without quantitative and qualitative analysis. With such data, assessments can be re-designed to focus on the learning objectives brought forth by the educator. Also, outlier data can provide significant information on improving pedagogy and instructional methods for the instructor. Schuwirth and Ash (2013) explained that eliminating information skews the results needed to further analyze the outlier data points. This third principle of assessment aligns with the Teaching and Learning node of the proposed Industry 4.0 CBL framework.

Summative and Formative Assessments

Currently, professional credentials and certifications assessments are administered and managed using an online LMS. These assessments are comprehensive as they assess the learners' knowledge summatively. The technical course's LBI allows the instructor to ask questions of the learner or demonstrate specific procedures or skills discussed in the learning environment. This formative approach to assessing knowledge and skills in real-time is beneficial to the instructor and the technical learner. As Schuwirth and Ash (2013) noted in the final analysis of understanding learning behaviors, summative and formative assessments cannot be separated. This fourth principle of assessment associates with the Assessing and Learning node of the proposed Industry 4.0 CBL framework.

Constructive, Balanced Equitable Assessment

The professional credential and certification assessments are standardized from the authorizing testing agency's established test bank. The authorizing testing agency's test bank is co-developed with technical educators and their industry partners. One approach the proposed Industry 4.0 CBL framework could use to remove inequity from assessments is to allow authentic education within the learning environment using Differential Instruction (DI). Weselby (2017) noted that learners with cultural differences and diverse learning styles can be engaged with a delivered subject using DI. Another instructional strategy that has shown positive results in improving academic success is the Genius Hour. Spencer (2017) explained that the Genius Hour allow learners to explore their own talents, skills, interests, and experiences in an unstructured instructional manner. Further, Spencer (2017) noted the big idea behind the Genius Hour is to empower learners to learn by being immersed in their own learning. Such instructional strategies should provide a balance in assessing culturally diverse learning environments, thus providing equity for all learners. This final assessment principle maps within the Assessing and Learning node of the proposed Industry 4.0 CBL framework.

With the five principles outlined, the MTD goal is to improve the assessment achievement score of seven percent (7%) for professional certifications and credentialing. This assessment score was obtained from the 2018-2019 Academic Year. Incorporating these principles in the proposed Industry 4.0 CBL model framework could help the IMT learning environments to be engaging through authentic education. Also, assessing culturally diverse IMT learners based on competencies obtained through mastery learning could provide equity within technical education environments. According to Achieve (2015), equity can only be achieved based on assessments that are engaging and consider diverse learning environments.

Conclusion

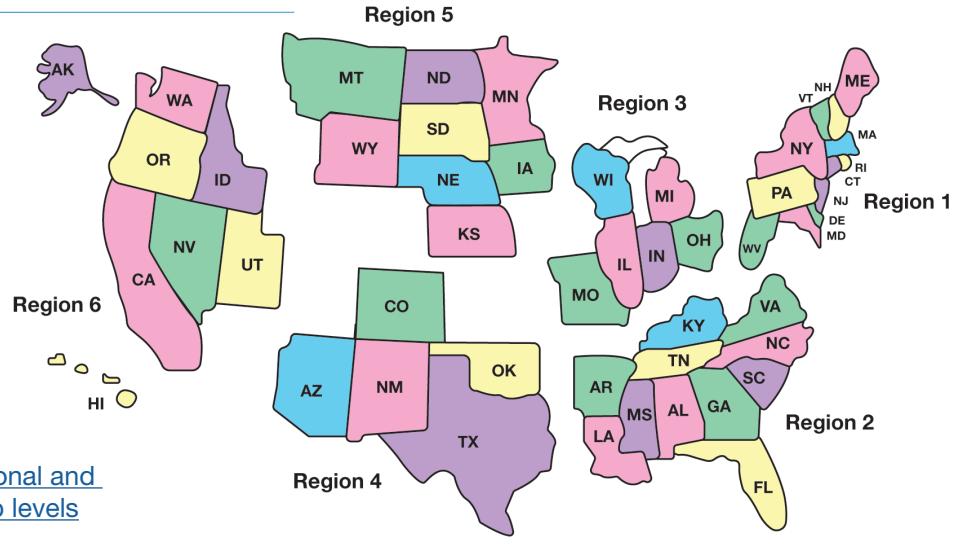
A proposed Industry 4.0 CBL model framework for supporting authentic education and hands-on training was presented. The proposed model framework is grounded in educational learning theories. The model framework can support both online and onsite instructional delivery of subject content material to technical learners. Moreover, TI is important in creating engaging learning environments for technical learners. The Five Principles of Assessments provide instructional strategies for assessing technical knowledge through formative and summative methods. In addition, the proposed CBL model framework's qualitative and quantitative data should be considered when analyzing competency achievement within a technical learning environment. Equity, PL, and DI are instructional aspects that should be considered when instructing diverse learners. With these instructional strategies available, the instructor can assess the technical learner's mastery learning ensuring technological skills and 21st century competences have been achieved.

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Member conference “SpacePorts and Space Travel, training and jobs,” Las Cruces, New Mexico, program chairs: SpacePort America, White Sands Testing Facility and Dona Ana Community College.

Join ATEA register for the member conference: ateaonline.org

2021

April 27, 28 29 2021

Virtual 1:00-5:00 ET

“Workforce Intelligence – Integrating Humans, Machines, and Technical Education”

ATEA National Conference

American Technical Education Association

A premier association for the post secondary technical educator, with emphasis on professional development.

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