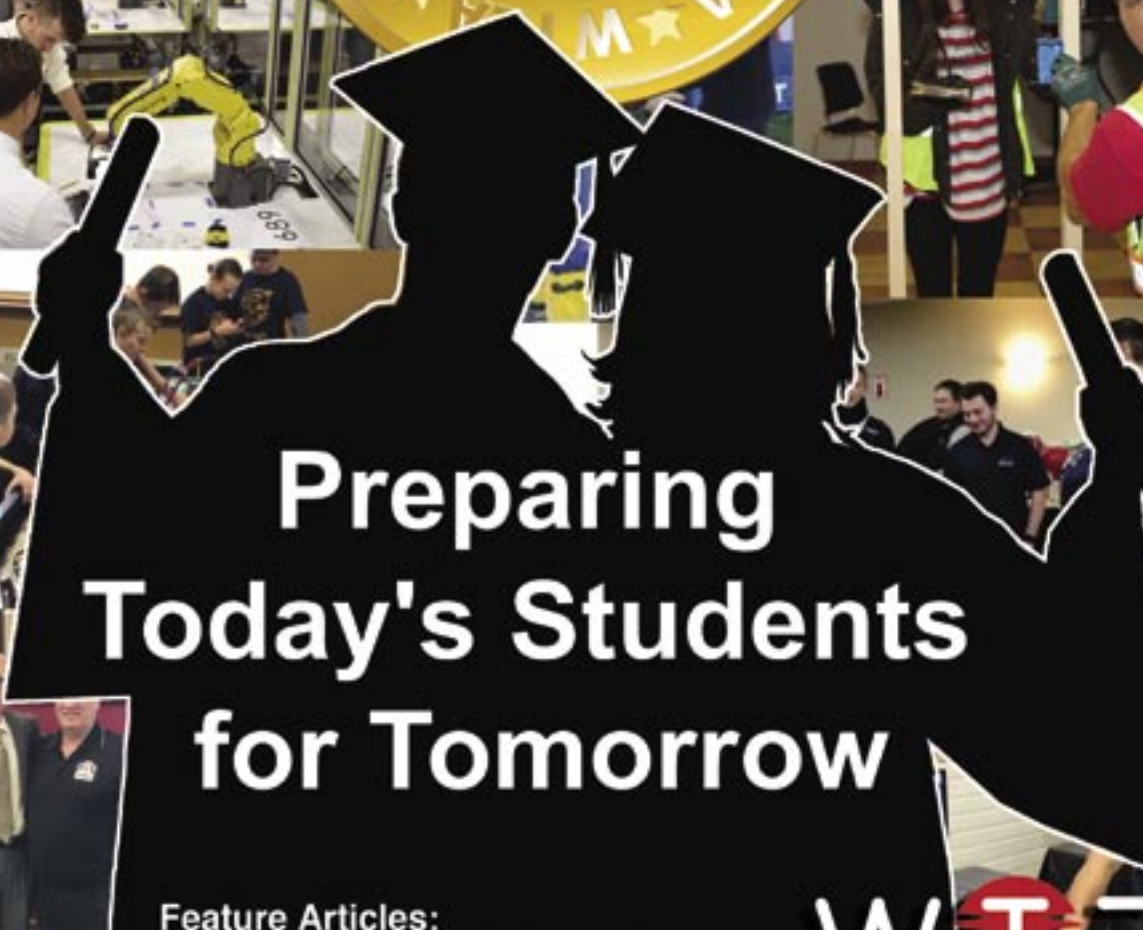


Interface

Journal of the WTEA

Volume 59
Number 2

Winter 2019 - 2020



Preparing Today's Students for Tomorrow

Feature Articles:
Spring Conference Information

WTEA



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Cover design by Howard Roloff, 116 S. Morris St., Stoughton, WI 53589 • hroloff1@yahoo.com

Interface, the journal of the **Wisconsin Technology Education Association**, is published & mailed from Stoughton, Wisconsin three times a year and is distributed to members of the **WTEA**. Individual subscriptions are available at \$30 per year.

For subscription information, back issues, or reprints please send requests by email to joe.ciontea@wtea-wis.org.

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The WTEA Membership fee is not refundable. The WTEA School Subscription fee is not refundable, but is transferrable to other staff in the same school district. The portion of the non-member conference registration fee equal to the amount of the WTEA membership fee is non-refundable. Refunds for Conference Registration and/or Awards Banquet must be received by US Mail or by email at least 15 days prior to the event. Exhibit space cancelled after Jan. □



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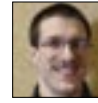
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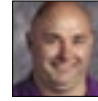
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From the President's Desk

By Phil Bickelhaupt, WTEA President

Phew! It is hard to believe it has been two years since I wrote my first President's message and now I am writing my last! Time sure does fly by when you enjoy what you do and have an active family and life! Speaking of family, I am hoping many of you had a chance to enjoy some time off with family and rejuvenate your batteries over winter break as we head into the long stretch between January and March!

As I reflect on the last two years as President, I believe the WTEA as an organization has become stronger and certainly more diversified. In 2019 we celebrated our 50th annual conference. This is truly an accomplishment for an organization run wholly in part by volunteers, part-time positions and teachers that have a passion for their profession. In order to continue this great organization, the WTEA will continue to lean on these individuals as we move forward toward conference number sixty.

Additionally, when I say diversified, I point to the diversity on our Board of Directors and membership. We have added many new faces from many new places over the last two years. It is especially important to note that we have added several young educators, we have better gender representation, and we have consciously tried to increase representation from our middle school educators. As we continue to grow and strengthen as an organization, we will continue to need educators and individuals interested in serving the organization in all the roles that it takes to "run" the WTEA. If you are at all interest-

ed in doing more than just being a member, please reach out to any Board Member or myself and we can continue the discussion on what opportunities are out there to serve in a leadership role within the WTEA.

In closing, I want to commend you for all you do for students and the education profession. In a day and age when this profession is getting increasingly difficult to navigate and we often lose the focus, just remember, you do make a difference in kids' lives everyday. We have fewer and fewer educators coming into the profession due to a plethora of reasons. However, you, as an educator, can have a lasting impact on kids. Part of that impact could be growing our future crop of technology

educators. I can say I have personally had a helping hand in growing several of my former students into technology teachers. If we don't do it, I question who will. My challenge to you is over the next year or two, find that one kid who stands out, and encourage him or her to become that next educator. In fact over the next several months to a year, you will hopefully learn more about a program the WTEA is developing to help build that pipeline of future technology educators! Stay tuned!

One last plug . . . make sure to mark your calendars for the 51st Annual Conference, "*Preparing Today's Students for Tomorrow*" on March 4-6, 2020 at the Chula Vista Resort in the Wisconsin Dells.

Take care and best of luck in the second half of the school year!



Plan now to attend
the 51st
WTEA Annual Conference

"Preparing Today's Students for Tomorrow"

March 4 - 6, 2020 • Chula Vista Resort • Wisconsin Dells



WTEA BOARD NEWS

Fall 2019 WTEA Board Meeting Highlights

By Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the 2019 Fall WTEA Board Meeting held in Wisconsin Rapids on October 19, 2019.

- New Appointments.
- The WTEA is looking to partner with supporting companies and/or organizations to sponsor different events at the Annual Conference. There are plenty of opportunities for companies to get involved on all three days of the conference. Stay tuned to hear more about different opportunities. Contact Joe Ciontea at joe.ciontea@wtea-wis.org if interested in learning more.
- Transcript high school credits with your local Technical College. Contact your technical college to get this opportunity for your students started.
- 52 experienced-based licensee applications for 2017-2018.
- 86 experienced-based teachers teaching in Wisconsin (994 total licensed tech ed teachers).
- The WTEA is encouraging members to host a "High-Tech" Weekend in your area. Topics can include a wide variety of subjects; CNC, Lasers, 3-D printers, Carpentry, Auto, Machining, etc. For more information contact Joe Ciontea.
- WTEA is kicking off a new program called the WTEA Student Ambassador Program. This program will support high school students interested in a career as a Technology Education Teacher. The WTEA Board of Directors has appointed a committee to lead this effort. If you are interested in learning more or being a part of this committee and effort, contact Matthew Schultz at mjschult@kUSD.edu.
- Plans are being made for a WTEA Annual Brewer Game Family Outing on July 26.

*For additional information about this meeting contact any member of the Board of Directors.
Complete minutes are available from Matt Schultz at mjschult@kUSD.edu.*

- Dates to Remember -

February 14 - 15	SkillsUSA WI State Team Works Competition	Milwaukee, WI
March 4 - 6	Celebrating our 51st Annual WTEA Conference	Wisconsin Dells, WI
March 11 - 14	ITEEA 82nd Annual Conference	Baltimore, MD
April 3 - 5	WTEA FABLAB/Prototype Training	Green Bay, WI
April 15	WTEA Foundation Scholarship Application Deadline	
April 28 - 29	SkillsUSA WI 47th Annual State Conference	Madison, WI
June 22 - 26	SkillsUSA 56th Annual National Conference	Louisville, KY
July 6 - 9	Automotive Technology Summer Institute	Wisconsin Rapids, WI
July 26	Milwaukee Brewers WTEA Family Outing	Milwaukee, WI
October 15 - 17	Career Pathways Network National Conference	Atlanta, GA
December 2 - 5	ACTE Career Tech National Conference	Nashville, TN

WTEA EXECUTIVE DIRECTOR

Help Wanted: WTEA Interface Editor

Doug MacKenzie, our printing/publishing guru, has been the editor of the WTEA *Interface Journal* since the fall of 1996. Doug has given the WTEA Board of Directors his letter of intent to retire. Doug's last issue of the *Interface Journal* will be the spring issue of 2021. We are looking for a current or previous Technology Education Teacher who is interested in assuming that position. The association does provide an honorarium to the editor on a per issue basis. We are hoping to find someone who can Job Shadow Doug for a couple of issues before he retires. A more detailed job description can be available upon request.



Here are the basics:

- Solicit articles and other copy for each issue (3 per year).
- Proof all content.
- Create the layout for the journal using InDesign and deliver a pdf to the printer.
- Pick up printed magazines, apply mailing labels, and deliver to the Post Office for Bulk mailing.
- Experience with InDesign, Photoshop, and Illustrator is recommended.

Please contact Joe Ciontea (jc.wtea@gmail.com) if you are interested and want additional information.

You and your family are invited to the **Milwaukee Brewers WTEA Family Outing** **Sunday, July 26th at 1:10 PM vs the Pittsburgh Pirates**

Custom parking lot tailgate space prior to the game.

The WTEA's logo will appear on the scoreboard.

• All attendees will sit together in the same section.

• Prices and particulars are still being worked out.

Information and registration will be available at the 2020 WTEA Conference.

WTEA Foundation Scholarship

The WTEA Foundation is offering a renewable \$1000 scholarship for a high school senior who commits to pursue a career as a K-12 Technology & Engineering educator.



Eligibility

- Wisconsin resident
- Enroll in technology education at a Wisconsin University and start the fall semester
- Submit completed application form and 250 word essay prior to April 15

Details of the scholarship and the application form can be found on the WTEA Foundation website at www.wteafoundation.org.

WTEA Conference App

We will have a conference app (powered by Yapp) that you can use on your iOS or Android mobile device. It will have the complete sectional schedule, along with the exhibitor information and much more.

Downloading the app is easy.

1. Visit <http://My.yapp.us/2020WTEA> on your device and follow the instructions on the page.
2. You'll be asked to install Yapp from the app store (if you don't have it already).
3. Open Yapp and tap "Download an existing Yapp" and your app will appear.
4. If you go to the web address listed above on your computer, you can access all of the conference information in the app,



DIRECTOR REPORTS

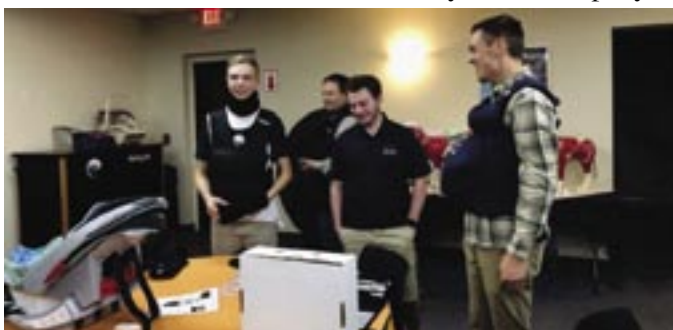
District A News

Sylvia Tiala, District A Director



What do cows, welders, pregnant women and elderly people have in common? Realityworks! In-service and pre-service Technology Education teachers joined Family and Consumer Science pre-service teachers as Dan Cramer explained careers and career pathways related to the Realityworks company.

After explaining the design process, Dan gave visitors a tour of the Realityworks company while explaining how the design process took the idea of a cow insemination simulator from ideation to reality. Vacuum forming, electronics, and making composites to feel like real human flesh were just some of the presented topics. The tour ended with attendees trying the geriatric simulators, the pregnancy simulator and the welding simulator. Fun was had by all!



Geriatric simulator & pregnancy simulator demonstrated.



Dan Cramer demonstrated the welding simulator.

District B News

Brian Schiltz, District B Co-Director



Greetings Interface readers,

My name is Brian Schiltz and I am your District B representative (Nicolet Area & Northcentral Tech Colleges). I have been teaching at the Tomahawk High School and Middle School in Tomahawk for 16 years and have been involved with WTEA for just under 20 years.

I would like to take this opportunity to make sure you register for the 51st Annual WTEA Conference & Trade Show - "Preparing Today's Students for Tomorrow" March 4-6, 2020, at Chula Vista Resort.

This conference is a great way to connect with other professionals in our great vocation. There will be innovative sessions from teachers and industry leaders who are pioneering the future of technology. Register at <https://www.wtea-wis.org/> and click on the conference button at the top of the page and then look for the registration link.

Do you have content to have published in the Interface? Send articles, photos, and event information to our editor, Doug MacKenzie (Doug@wtea-wis.org).

Lastly, we are always looking for new ideas, faces, and leadership within the WTEA board. Feel free to contact your district representatives or anyone on the Board of Directors and let them know how we can help you.

District F News

Eric Sutkay, District F Director



I hope everyone is having a great school year! It is hard to believe that by the time you are reading this it will be half way over. Things have been quiet (events wise) in District F this fall, and besides it being a busy start to the year, the only other excuse I have is my

wife and I welcomed our second son, Ford, on August 22nd. Only a slight adjustment to having two and everyone is doing great.

That being said, I look forward to hosting an event sometime this coming spring. Talk to me at this year's conference about events that you might be interested in, or feel free to email me anytime at esutkay@kUSD.edu.

See you at the conference in March.

District C News

Louis VandeHey, District C Director



It's hard to believe the school year is almost half over already - it's been a quick few months! Back in October, I took about 15 students to the Hands-On, High-Tech Event at Fox Valley Technical College, highlighting their Wood Manufacturing and Residential Building Construction programs. What a

great event! I cannot say enough good things about the experience that the students had. They were taken through the entire process of building a modern end table, and they were able to get their hands on the equipment and machine the pieces themselves. The Wood Manufacturing Technology program uses industry grade equipment, so it's unlike the tools you would find in most high schools, but it's definitely the tools you would use in industry, so that was a great takeaway as well.



After attending the event, I was able to connect with Glenn Koerner, one of the instructors at FVTC. We began talking about getting a dual-credit class offered here at Reedsville High School. Recently Glenn came out to RHS to see our facilities, and to show me the curriculum for the class we will hopefully be offering in the 2020-2021 school year. The dual-credit class will award the student with the credit they need at the secondary level, and will also give them 2 credits toward the Wood Manufacturing Technology Program at FVTC. This dual-credit partnership is a fantastic opportunity for students who may be interested in a related career field to begin to earn some credits while still in high school - not to mention it's a great way to maintain a relationship with an area Technical College. I recommend that Technology Educators around the state get in touch with local technical colleges and get a conversation going about some of these potential partnerships. A really great opportunity!



Middle Level Sessions at WTEA Conference

Angie Arneson, WTEA Director-at-Large



Greetings WTEA! I have to be honest, in years past I always thought that our annual WTEA conference was more geared for the high school teacher. I know many other middle school teachers felt the same as me and stopped coming to the conference altogether. As your board member, I have

taken on the responsibility to enhance the middle level teacher's experience at our annual conference. I listened to fellow middle school teachers' ideas and this year I am excited to announce that we will have a professor from

UW-Platteville at our conference to talk about how middle level students develop and will present strategies that work well for them in the classroom. There are also many other great middle level sessions that are being prepared for this year's conference and almost all of the session time slots are filled! So if you are a middle school teacher and you haven't been to a conference in awhile, I would highly recommend you coming to this year's event!

We will have a Middle School Project Showcase again this year, so make sure to bring your projects to share with other teachers and schools.

Thanks for reading and I hope to see you at the conference March 4-6!

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Candidate for WTEA Vice-President

Bob Morehead

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American Welding Society - Certified Welding Inspector
Autodesk Revit Architecture Level 1 Master Academy

Professional Experience

I have been teaching Technology Education for the last ten years at Chetek-Weyerhaeuser Area School District. My present course load consists of machining, small engines, and welding. I am also a SkillsUSA advisor. Prior to my current position, I taught for seven years at Northstar Middle School in Eau Claire.

Leadership, Awards, and Recognition

WTEA Vice President
Wisconsin Rural School Alliance Board Member
WTEA Award of Excellence
SkillsUSA Technology Literacy Award
Chetek-Weyerhaeuser Exceptional Educator Award

Position Statement

I am currently serving as the WTEA Vice President, and I look forward to continuing in that role. During the next two years I would like to help build the WTEA membership by recruiting new members and welcoming back members that we have not seen in a while.

NOTICE

Since Candidate for Vice-President Bob Morehead is unopposed, a unanimous ballot will be cast by the Board and no paper ballots will be mailed.

Technological and Engineering Literacy for ALL!



**ITEEA's 82nd Annual Conference
in Baltimore, MD - March 11-14, 2020**

Preregistration is now open!

For the latest conference information, go to
www.iteea.org/ITEEA_Conference_2020.aspx

UW-Stout Regional First Lego League Qualifier

By Barb Bauer, UW-Stout

UW-Stout held the regional competition for First Lego League-City Shapers. Seventeen teams participated. The City Shaper challenge tasks students age 9-16 to a real-world challenge. Each team identified a problem with a building or public space in their community. Teams design their own solution to the current scientific question or problem and build autonomous LEGO robots that perform a series of missions.



Robot judging.



Practicing in the pit area.

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SKILLSUSA

SkillsUSA Fall Leadership Conference a Success

By Brent Kindred

On November 3-4 we saw over 40 SkillsUSA chapters at the annual Fall Leadership Conference with almost 300 people in attendance. The youngest SkillsUSA member was 10 years old and the oldest was 18. Over the two day conference, students learned how to run a high quality chapter, focusing on the SkillsUSA Framework. In their mock chapters they elected an officer team, planned their program of work (e.g., fundraising, community service, public relations, etc.), held an open-house, and had social time. While the students were learning in their chapters, advisors were receiving professional development in the Chapter Excellence Program along with a few DPI and Carl Perkins V updates. This turned out to be a highly successful fall conference for everyone involved.



SkillsUSA Wisconsin is a student organization serving those enrolled in technology and engineering education training programs in our middle and high schools. SkillsUSA's mission is to help its members become world-class workers and responsible American citizens. SkillsUSA complements technical skill training with instruction in employability skills that make a well-rounded worker and citizen. SkillsUSA is endorsed by the U.S. Department of Education and Wisconsin Department of Public Instruction and is cited in federal legislation as an integral part of the technical curriculum.



ANNOUNCEMENT

Lennox VisionTECH Conference April 27 - 28 at Chula Vista

By Eric Sutkay, LakeView Technology Academy

Lennox VisionTECH is a day and a half event that brings the industry together to learn, grow, compete, and strengthen teams. Attendees include high school administrators, students and parents, college instructors and students, and Lennox Heating and Cooling Contractors who bring their entire team of installers, service technicians, salespeople, office staff, and owners, as well as their trucks, tools, and talents, which they will use to learn and compete.

Lennox VisionTECH is the industry's first and only true team building event featuring both education and competitions. Colleges will compete against other uni-

versities; dealers will compete against other dealers; and winners will earn bragging rights, as well as the TechWarZ Champions trophy. This year, 1st, 2nd, and 3rd place winners will earn industry items to take home. So bring your team and bring back the trophy!

This event is open to high school students and parents interested in learning more about the industry. If you would like to attend, follow the link to the VisionTECH website. Lennox representatives will be in attendance at this year's WTEA conference. Stop by their booth for additional information.

<https://lennoxvision.com/vision-tech/indexs.php>

Fox Valley Technical College Hosts Construction Trades Expo for High School Students

By Steve Meyer, Fox Valley Technical College

On December 5, Fox Valley Technical College (FVTC) hosted the 2nd annual Construction Trades Expo for high school students. The event drew approximately 500 students to the Appleton, Wisconsin campus to experience hands-on, minds-on activities related to all aspects of the construction field. The all-day event allowed students to not just hear about careers, but to actually experience what it is like to work in a construction or trades related occupation. Students, in donated hard hats and safety vests, had opportunities to participate in experiences in the Transportation (on and off road), Pipe Trades, Construction, and Electrical areas. Students were able to drive heavy equipment, lay block and brick, build and erect walls, wire electrical circuits, and many other engaging experiences.



Heavy equipment simulator.

This event took lots of coordination from area companies. Approximately 20 different contractors helped put on 30 different experiences with 70 plus volunteers. Along with the interactive experiences, students also had opportunities to talk with FVTC instructors, tour classrooms and labs, and find out about technical diploma, associate degree, and apprenticeship options. The event proved to be very successful as many students went back and filled out an application for post-secondary education opportunities in the Construction and Trades related fields of study.



Brick laying demonstration.

"The career immersion event was created to place the participants on the job with actual trades workers providing insight to the profession. Construction Jobs are rewarding, safe and profitable endeavors. Construction jobs are also the best kept secrets." – Mike Merbach, FVTC – Electrical Apprenticeship Instructor



Installing an electrical box.

"The construction trades expo was a great opportunity for Miron Construction to expose students to the masonry trade where the average age of the worker is ever increasing. The expo is a great way to show young people that there are career options outside of a 4-year degree program that have excellent earning opportunities and benefits." – Ben Jerdee, Miron Construction Co., Inc. – Project Manager

Students Showcase Industrial Automation Skills at Team Robotics Competition

By Melissa Martin, LAB Midwest

Robotics clubs and competitions are growing rapidly across the US, with well-known organizations like Lego League, Vex, and FIRST Robotics getting students of all ages excited about technology.

This past October, Wisconsin innovated a new dimension to this trend: high school and technical college students had the opportunity to participate in the first live robotics competition carried out on an authentic industrial platform.

At the LAB Midwest Team Robotics Competition, teams were each assigned an identical automation challenge to be carried out on a FANUC LR Mate 200iD robot. They then had just three hours to design, program and operate their unique solution. They were also judged on flowchart writing, program planning, teamwork and robotics knowledge.

The turnout on this inaugural event was impressive, with 23 teams from all across the state participating. Even the range of experience was incredible, from students who had just a few hours of exposure to the platform to individuals completing post-secondary degrees in automation.

Division Winners

Congratulations to the top-placing teams in each division! First place teams will receive an all-expense paid trip to IMTS 2020 in Chicago to be featured in FANUC's education booth. Second and third place teams received a monetary donation to their school's robotics program.

Credit also goes to the instructors and administrators who support automation and robotics education for our students.



High School Winners

1st place: Mayville High School: Myles Adamavich, Matt Schneider, Tanner Wiedmeyer; Instructor Dave Seiler

2nd place: West Bend High School: Anthony Biel; Instructor Jacob Gitter

3rd place: Plymouth High School: Jacob Ashworth, Kyle Kraus, Alex Oty; Instructor Jacob Sherman

Technical College Winners

1st place: Madison College: Schuyler Bostedt, Garrett Butler, Jonathon Stowell; Instructor Peter Dettmer

2nd place: Lakeshore Technical College: Joe Leiterman, Nick Link, Brenden Olds; Instructor Jim Gruenke

3rd place: Moraine Park Technical College: Gunner Fox, Jacob Hutchins, Jackson Wilson; Instructor Craig Habeck

The college division winner was also slated to receive a FANUC M-11A robot for their program. However, Madison College was so impressed by the turnout and skill level of the high school teams that they elected to donate their prize robot back to the competition, to be given to the winner of the high school division. What a great example of support between secondary and post-secondary systems!



Impressing Industry

The competition was designed to replicate a typical situation an automation engineer might encounter in industry. The challenge provided an opportunity for teams to practice critical thinking, problem solving, design thinking, and create multiple iterations of a solution.

For this very reason, the competition strategically took place at the Wisconsin Manufacturing and Technology Show (WIMTS), the state's largest industrial trade-show. Attendees go to discover new automation solutions to implement in their facility – which means they're also looking for skilled workers who can program, run and maintain these systems.

The unique venue meant thousands of employers were able to stop by and watch these students compete.

Kent Lorenz, Vice President of the Wisconsin Technical College System Advisory Board, who also pioneered the development of the competition, remarked on the positive feedback from employers: "Some of the comments from industry, particularly about the high school robotics competitors, is that most of them could get a job in industry right out of high school. . . It's nice to see young talent evolve this way."

During the awards ceremony, LAB Midwest's Matt Kirchner made a similar comment: "Just as important as those hard skills of robotics programming and automation were all the workplace skills we saw exhibited as they went through the challenge: things like communication, delegation and problem solving, meeting deadlines and working under pressure. All those skills that industrial employers tell us are vital in the workplace."



The Future Is Automated


The rise in popularity of robotics clubs and competitions is encouraging, particularly in the face of a future run by automation. They engage students in computational thinking and develop hard and soft skills they'll need in high-tech careers.

And due to the exponential rise in technological innovation, many of the jobs our students will have in the next decade don't even exist yet. It's experience in these types of activities that will help prepare them for success in those jobs.

Lorenz said, "Wisconsin is doing a lot of things right, and this is a chance for us to sit back and celebrate that."

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51st Annual Spring Conference & Trade Show: **“Preparing Today’s Students for Tomorrow”**

The WTEA invites you to participate at the 51st Annual Spring Conference, March 4-6, 2020 which will be hosted at Chula Vista Resort in Wisconsin Dells. The conference program is packed with excellent presenters offering a variety of topics to help inspire and motivate each of us. We encourage you to bring your school administrator with you to the conference - administrators are admitted free when accompanying a registered Technology & Engineering educator.

We start things off on Wednesday, March 4th, 2020 with the annual awards banquet, sponsored by LAB Midwest. We will recognize and honor our colleagues for their outstanding contributions to Technology and Engineering Education as well as program award winners during the banquet beginning at 6:45 p.m. Banquet tickets must be purchased in advance, the cost is \$28. This is a great way to show appreciation and support for your peers.

On Thursday, March 5th, the conference will begin with a general welcome to all members given by WTEA President Phil Bickelhaupt.

Our first general session will be given by Todd McLees who is the founder and CEO of Pendio Group, a management consulting firm in Milwaukee. Todd will share his insights on “Work of the Future” - a realistic look at the Talent Gap – globally, nationally, regionally and in the manufacturing sector. He will focus on key projections for the next decade and discuss the impact of AI and other emerging technologies on the transformation of most roles in the workforce.

Thursday is also the time to visit the trade show. Our vendors are extremely important to our association and our programs. Our trade show features numerous vendor booths with professionals exhibiting up-to-date products and services for our field. This is the best “one stop” to bring an administrator or board member looking for input to update a program. Don’t miss the Project Showcase and the Career Expo in Room I.

The Annual President’s Reception will begin at 7:00 PM and end at 9:00 PM in the Riverview Ballroom.

On Friday we will again host the Early Riser Breakfast, sponsored by UW-Stout.

Following breakfast, we will also have our General Membership Meeting presided over by President Phil Bickelhaupt. Following the General Membership Meeting, the day will continue with diverse sectionals, workshops and hands-on demos. Friday’s schedule includes a day of hands-on automotive technology sessions at Easton Motors in Wisconsin Dells.

Our mid-day luncheon will be followed by a keynote address from Dorothy Walker, the former Academic Dean of the School of Technology and Applied Science, Milwaukee Area Technical College. This session is sponsored by Gateway Technical College. The drawing for the raffle sponsored by WTEA Foundation will follow the keynote speaker.

This year’s conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin and the nation sharing their expertise on topics such as: Hardwood Flooring Installation, Tiny House Construction, Igniting Curiosity and Creativity through the STEM Framework, Successfully Adapting Auto Tech to H.S. Building Schedules, Streamlining Safety Tests with Google Forms, Weld Inspection, Architecture - More than CAD, CNC Machining - Zero to Hero, Multimedia Design, Energy Management with Prosthetic Limbs, Middle School Roundtable, New Teacher Boot Camp, Arduino Microcontroller Implementation, the popular WTEA Project Showcase sponsored by Madison College.

Put March 4-6 on your calendars, get your release days approved, and fill out and send in your registration form today if you have not already done so. The convention fee is \$160 for members and \$190 for non-members. As a final reminder, please contact Chula Vista Resort early to reserve your room; often we are not the only event taking place at this busy resort. We hope to see you there!

For room reservations contact Chula Vista Resort, 2501 River Road, Wisconsin Dells, WI 53965, (877) 745-6998 <http://www.chulavistaresort.com/>. Use booking code “G89201” or refer to “Tech Ed 2020” to get the conference rate.

Use the WTEA eStore to register for the conference online with your credit card: <http://www.wtea-wis.org>



51st Annual Technology Education Conference & Trade Show

Tentative Conference Overview

Wednesday, March 4, 2020

5:30 - 8:00 p.m. Conference Registration

6:45 - 9:00 p.m. Awards Banquet

Thursday, March 5, 2020

7:30 a.m. – 3:00 p.m. Conference Registration
 7:00 a.m. – 10:00 a.m. Project Showcase Setup
 8:00 a.m. – 4:00 p.m. Trade Show
 9:00 a.m. – 3:30 p.m. Project Showcase
 8:55 a.m. – 9:05 a.m. General Welcome
 9:05 a.m. – 10:00 a.m. 1st General Session
 10:15 a.m. – 3:30 p.m. Concurrent Sessions
 7:00 p.m. – 9:00 p.m. President's Reception & Silent Auction



Thursday Keynote Speaker

Todd McLees
 Founder and CEO
 of Pendio Group

Friday, March 6, 2020

7:30 a.m. – 11:30 a.m. Conference Registration
 6:45 a.m. – 7:45 a.m. Early Riser Breakfast
 7:45 a.m. – 8:30 a.m. WTEA Membership Meeting
 8:45 a.m. – 12:15 p.m. Concurrent Sessions,
 Demonstrations & Project Showcase
 Automotive workshops/training at
 Easton Motors
 12:30 p.m. – 2:00 p.m. General Session/Luncheon
 2:15 p.m. – 3:30 p.m. WTEA Board Meeting



Friday Keynote Speaker

Dorothy Walker
 Academic Dean, School
 of Technology & Applied
 Science, Milwaukee Area
 Technical College

Session Topics Include: Multimedia Design, Google Forms for Safety Tests and Grading, CNC Tips and Tricks, NC3 Certifications, Self Sustaining Construction Program, Harvesting Kinetic Energy from a Prosthetic Limb, Geometry in Construction, Tiny House Build, Cutting Wind Turbine Blades, Growing your Program, Referendums-What to Expect, Plumbing and Electrical Techniques, K-12 Energy Education Program (KEEP), Apprenticeships, Retirement Strategies, Innovation and Design, Automotive Technologies, Welding and Machining, Building High Mileage Vehicles, Project Showcase, Skills USA, Middle School Roundtable, Manufacturing Project Ideas, New Teacher Boot Camp, and much more!



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Use Promo Code Tech Ed 2020 or Booking Code G89201

or Call 1-877-745-6998 & ask for WTEA Conference Rate

WTEA Membership Application & 2020 Conference Registration Form

Membership year runs from September 1st through August 31st

Last Name _____ First Name _____

Home Phone (____) _____ Local Tech College District _____ # years teaching _____

School Dist. _____ School Name _____

School Address _____

School City _____ State _____ Zip _____ E-mail: _____

Check the appropriate boxes below and total amount due.

Membership Fees: ☐ 3 year membership - \$75.00 ☐ 1 year membership - \$30.00 \$ _____

Spring Conference Registration:

☐ \$160 members ☐ \$190 non-members \$ _____

WTEA Awards Banquet (Wednesday, March 4, 2020) ☐ \$28 \$ _____

☐ Bill my school district - purchase order is attached ☐ payment enclosed **Total \$** _____

Send completed form with payment or school purchase order to: **WTEA, P.O. Box 531, Rhinelander, WI 54501**

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To complete an electronic version of the WTEA membership/registration form, go to www.tinyurl.com/WTEA-Conf

WTEA Foundation Raffle

A raffle will be held at the conference to support the WTEA Foundation.



**Watch the WTEA website
and the listserve for details**

Prizes donated by WTEA Business Partners and Sponsors.

Tickets

\$5 each or 3 for \$10

Tickets available from WTEA Board members after February 1st.

Tickets will be sold at the conference up until the drawing.

The drawing will take place on Friday, March 6, 2020 at the end of the noon general session.

The winner need not be present to win.

The mission of the WTEA Foundation is to provide scholarships and fund STEM (Science, Technology, Engineering, and Math) education opportunities for teachers, individuals interested in becoming teachers, and students.

The WTEA Foundation is a public charity as defined under section 501(c)(3) of the Internal Revenue Code.

Project Showcase

Let's Phil up



Join us for the 11th Annual Project Showcase at the 2020 WTEA Annual Conference March 4 – 6 in Wisconsin Dells. Your contribution of projects will make the showcase the biggest and best yet. These can be actual physical projects, pictures, plans, etc. from your school or even personal projects. We want to see projects from all grade levels (elementary, middle, and high school). Many members have expressed interest in seeing more middle school projects. If you are a middle school teacher, please consider bringing a project. We want all projects whether they are large or small, complex or simple. For many larger projects (i.e. construction) and visual projects (drafting, graphic arts) a poster board or digital pictures looping on a computer are a great way to display.

Tables and power will be available. Bring projects that we can display. You are welcome to include supporting curriculum, but it is not required. If you are planning on bringing a project that won't fit on a table, please contact Steve Meyer prior to the event so space can be made available. Watch for more information on the web and DPI listserve.

Please e-mail Steve Meyer at meyerst@fvtc.edu if you have any questions.

The Glass Cage Discussion

By Randy Way, Madison College

At the Spring 2020 WTEA Conference members will be hosting a discussion of Nicholas Carr's "The Glass Cage – Automation and Us." The intent of this session is to foster a conversation around the diminishing role of human oversight in technological systems. This discussion aims to provide opportunities for participants to

speculate on how our teaching might change in response to these evolving technologies, and aspires to be the first in a series of perennial literature discussions that examine contemporary issues relevant to teaching technology. We welcome all who have read the book, or who simply have an interest in the content.

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GATEWAY TECHNICAL COLLEGE

36,000 sq ft Added to SC Johnson iMET Center

On October 22, 2019 Governor Evers joined hundreds of business and education partners to officially open Gateway's newly expanded Advanced Manufacturing Center. With this new space, Gateway now hosts 76,000 square feet of manufacturing and engineering programming built on the foundation of IIoT or the Industrial Internet of Things.



With partners like Fanuc America, Rockwell Automation, Amatrol, LAB Midwest, SC Johnson, Dassault Systems, Mastercam, First Technologies, Haas CNC, Ashley Furniture, Foxconn, Starrett and Snap on Tools, the iMET center is the first education center to support zero down time (ZDT). Data analytics drives the transformation for Gateway's new advanced manufacturing curriculum.

To learn more about Gateway SC Johnson iMET Center check out the website at GTC.edu.



Foxconn Building Wisconsin's Future



**Foxconn Founder Terry Gou and
Gateway President Dr. Bryan Albrecht.**

Foxconn Technology Group continues to buildout their 3,000 science and technology campus in Mount Pleasant, Racine County. Gateway has partnered with Foxconn to recruit and train workers in advanced manufacturing, IT and data analytics. The Foxconn Campus is transforming southeast Wisconsin with new highways, power grids and water systems.

To keep up with the changes, Gateway has opened several new training programs including cyber security, supply chain management, robotics and automation.

Governor Evers Holds Listening Session on Workforce Training

Governor Evers visited Gateway Technical College to learn about workforce training partnerships that are addressing the skilled worker shortage. Gateway has partnered with the Wisconsin Department of Corrections to train inmates CNC skills reducing recidivism. Another successful partnership addressing skill training is with area high schools. Through dual credit programs, Gateway served 7,500 high school students with college courses. This effort saved students time and money toward their college degree. A third partnership has established training academies inside corporations providing incumbent worker courses while they are on the job. Building partnerships are building blocks for workforce success.



Governor Evers & Roger Zacharias, Gateway Board Member

Earn & Learn Initiative

High School Graduates Can Receive Tuition Assistance From Area Manufacturers

By Allyson Extence Baue, NWTC Earn & Learn Coordinator

An innovative program in Northeast Wisconsin is addressing a critical skilled-worker shortage, promoting a college-going culture and preventing student debt.

The new initiative, called Earn & Learn (E&L), provides select Northeast Wisconsin high school students an opportunity to connect with an area manufacturer who is willing to pay a portion of their college tuition, enabling the student to work part-time while attending college part-time.

The opportunity is open to students who have taken dual-credit advanced manufacturing classes or youth apprenticeship. With funding from a competitive Career Pathways grant from the Wisconsin Technical College System, Northeast Wisconsin Technical College (NWTC) was able to hire a full-time E&L Coordinator to launch this initiative in partnership with the Northeast Wisconsin Manufacturing Alliance (NEWMA). NWTC is also collaborating with Fox Valley Technical College and Lakeshore Technical College to share best practices.

Signing Day – May 2020 Lambeau Field

Coming in May 2020, we, as a community of educators, employers, and families will celebrate the commitment these dedicated students and companies are making for a vibrant future in advanced manufacturing. Similar to an athletic signing day, we will highlight those area manufacturers who are willing to promote a college-going culture by sponsoring a portion of a student's advanced education.

Background

Manufacturing is a major economic driver in Northeast Wisconsin, providing nearly one quarter of all jobs in the region. The ability to find skilled workers is key to maintaining the strength and growth of this sector. NWTC, Fox Valley and Lakeshore Tech are collaborating with NEWMA and other manufacturers to address the skills shortage by providing more intentional conversations with high school students enrolled in dual credit advanced manufacturing pathways. The programs of critical demand covered by Earn & Learn include Electro-Mechanical, CNC, Welding, Manufacturing Engineering Technology, and Automation Engineering Technology, to name a few. The focus is on meeting labor market demand by 1) increasing the number of high school students entering and/or persisting in advanced manufacturing pathways; and 2) cultivating employment-ready soft skills for students who begin entry-level employment under Earn & Learn.

Current State

The shortage of skilled talent in manufacturing has reached a critical level, impacting 89% of manufacturers across the United States. The growth in new jobs and departure of baby boomers could result in 2.4 million manufacturing jobs going unfilled between 2018 and 2028, according to a study by Deloitte and The Manufacturing Institute, the social impact arm of the National Association of Manufacturers.ⁱ

Locally, the skills shortage is just as dire. Nearly one quarter of all employment in Northeast Wisconsin is in manufacturing.ⁱⁱ For nine straight years, local manufacturers have indicated concern about finding Machinist/CNC Machinist talent. Machinist/CNC Machinist currently ranks #2 for most difficult-to-fill occupation, according to the 164 local manufacturers responding to the

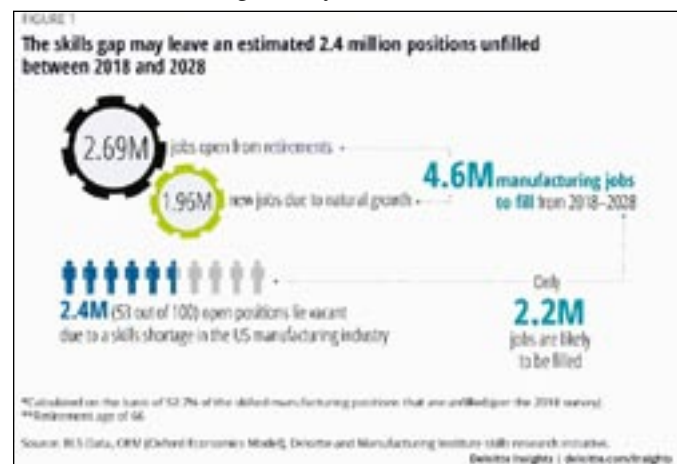
Northeast Wisconsin Manufacturing Alliance 2019 Manufacturing Vitality Index survey. Welder moved up one position to #4 and Electro-Mechanical/Service Technician moved to #5 from #7 the year prior.ⁱⁱⁱ In addition to gaps in technical skills, many surveyed companies express concern that employees lack non-technical skills or “soft” skills. More than half of survey respondents indicated Communication Skills and Attendance as prime concerns, followed by Accountability and Time Management.^{iv}

Alignment With Other Local, State, and/or National Initiatives

NWTC and FVTC are longstanding educational partners of NEWMA, a nonprofit manufacturing-led organization focused on solving the workforce skills shortage. In addition to manufacturers, the Manufacturing Alliance has representation from workforce development boards, chambers of commerce, higher education, K-12 public schools, and economic development organizations. The 180+ manufacturing members are located throughout the region and employ over 50% of the area’s manufacturing workforce. NEWMA and its industry members have a vision “that every Northeast Wisconsin manufacturer will find the talent it needs.” NWTC has committed to addressing this challenge in its Strategic Directions 2018-2023, which aligns with current best practices of long-term partnerships between industry, education, and other critical stakeholders.

To learn more about how Earn & Learn can impact your students, please reach out to Allyson Extence Baue at NWTC (Allyson.baue@nwtc.edu), Chuck Wachter at FVTC (wachter@fvtc.edu) or Alison Driscoll at LTC (alison.driscoll@gotoltc.edu).

- ⁱ Giffi, C., Wellener, P., Dollar, B., Manolian, H.A., Monck, L., Moutray, C. “The jobs are here, but where are the people?” Retrieved from <https://www2.deloitte.com/insights/us/en/industry/manufacturing/manufacturing-skills-gap-study.html>.
- ⁱⁱ 2019 Manufacturing Vitality Index. (2019). Northeast Wisconsin Manufacturing Alliance. Retrieved from <http://newmfgalliance.org/media/2195/2019vitalitystudyfinal.pdf>.
- ⁱⁱⁱ 2019 Manufacturing Vitality Index. (2019), *ibid*.
- ^{iv} 2019 Manufacturing Vitality Index. (2019), *ibid*.



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Content, Context, and Cognitive Load – Some Research Based Insights into Teaching Technology

By Randy Way, Madison College

Recently I've been working on a proposal called Technician to Engineer (T2E) pursuant to a National Science Foundation grant. While this work has implications for Technology Education, there isn't space to discuss them here. Rather, I'll focus on some interesting findings in the review of literature.

Cognitive Science and Problem Solving

In a 2005 meta-analysis of educational research spanning a range of STEM disciplines, the National Academy of Engineering (NAE) found that irrespective of discipline, when solving problems novices are more likely to start at the desired solution and work backward, while experts tend to start from what is known and work forward to a solution (NAE, 2005).

Think, for example, of the novice automotive technician who starts the troubleshooting process thinking about which part to replace. This tech must simultaneously contemplate faults in all systems that could produce the observed condition. An expert, on the other hand, works forward, eliminating possibilities as they go. For instance when faced with a no-start condition the expert runs a 5 gas that pegs the hydrocarbon scale. Based on getting hydrocarbons out of the tailpipe, the expert knows that there's gas in the tank, the fuel pump is making flow, the regulator's setting pressure, the filter is patent, the injectors are injecting, etc.

The experienced tech has considered the fuel system, and only the fuel system, in the first step. This is far less cognitively taxing than the novice's strategy of cataloging every possible cause for the fault. The novice is unable to manage the troubleshooting process in a strategic way because the number of things to keep track of exceeds the capacity of his or her working memory. Generally, "start with the end in mind" is good advice, but not when solving complex problems.

This pattern extends beyond developing effective troubleshooting strategies. Evidence suggests that the fundamental constraint on problem solving is working memory (Sweller, 1988). Working memory becomes the limiting variable when thinking about systems that are highly interlinked, as the number of things to keep track of and their possible interactions rapidly becomes overwhelming (Sweller, 1994). While the automobile is the

obvious example of a highly interlinked system, almost every technology features this characteristic of key variables in complex relationships.

Sweller, Van Merriënboer, and Paas (1998) describe the cognitive demands of learning as consisting of three elements – Intrinsic, Germane, and Extraneous loads. A central finding of the research is that cognitive capacity is split across these three demands.

Intrinsic Loads

As its name implies, intrinsic cognitive load is inherent in the content being mastered (e.g. polynomial multiplication is inherently difficult because it requires the precise execution of a sequence of non-intuitive algebraic steps). To some extent intrinsic cognitive load can be managed by giving learners heuristics as guides (e.g. for polynomial multiplication – F.O.I.L. – First, Outer, Inner, Last).

Germane Loads

The Germane cognitive load results from the "processing, construction, and automation of schema" (Wikipedia, 2019). This is the cognitive overhead of transitioning a mental task from working memory to internalized schema, which are defined as ". . . (a) structure which allows problem solvers to recognize a problem state as belonging to a particular category of problem states that normally require particular moves." (Sweller, 1988, p.259). Schema are like schematic diagrams – skeletonized representations of how the key elements of the problem interact.

Schema allow the learner to engage in Recognition Primed Decision Making, which helps them recall strategies that have been effective in solving this type of problem in the past. Choosing a single strategy to pursue, based on problem recognition, frees up working memory to manage the problem at hand (Intrinsic load), as well as to encode learning into new schema (Germane load).

One instructional strategy to moderate the Germane workload is looping. Looping distributes the cognitive load by incrementally extending internalized knowledge through successive experiences that return to the same cognitive construct. For example, consider students who learn about ΔT 's role in heat transfer in a unit about cooling systems. In a later unit about transmissions, this could be revisited in a discussion about why coolant in the

radiator flows from top to bottom, but transmission fluid in the transmission fluid cooler inside the radiator flows from bottom to top. In this second discussion, the cognitive load associated with understanding ΔT is minimal, as the concept was internalized in the initial exposure. This frees up capacity to consider the strategy of maximizing ΔT by making fluids run in opposite directions in a heat exchanger. This principle could then be generalized into a schema called “counterflow,” which is the term used in the industry to describe heat exchangers of this type. In each of these iterations, the learner is reinforcing what is already known, and the work of internalizing the content is constrained to the small, incremental extensions that are made in each loop.

Extraneous Loads

Extraneous cognitive load results from the design of the instructional experience, and can largely be controlled (Chandler and Sweller, 1991). As its name implies, Extraneous load contributes neither to task completion, nor to schema internalization. Perhaps the most fitting analogy is the two types of drag experienced by an airplane – induced and parasitic. Induced drag results from the wings producing lift, and while it’s still drag, it comes with the attendant benefit of lift. Intrinsic and Germane cognitive loads are analogous – they consume cognitive capacity, but there is a payoff in learning.

Extraneous cognitive load is like parasitic drag – it consumes cognitive effort, but produces no advantage to the learner. Occasionally educators create extraneous loads by conflating difficulty with rigor. For example, assigning a high level text to explain concepts that could be equally well explained by a text written at a lower level. The high cognitive load of texts of this type consumes capacity that could be used to draw more sophisticated interpretations of the content, and to convert these insights into schema. The result of such an assignment is likely that the learner will grow in their ability to decode complex texts, but will probably not retain much of the content.

Summary

Working memory is the central limiting factor in learning, and while it varies from person to person, it is finite for everyone. Every student has a cognitive load budget that gets split across the three aspects of the learning task. Effective instruction requires managing this load. Here are some strategies:

1. Minimize demand for working memory by waiting to learn computational tasks until after the associated conceptual and procedural knowledge has been fully

internalized. This is contrary to traditional practice in engineering education, which relies heavily on mathematical shorthand to describe relationships between key variables when introducing new content. Reordering learning experiences to separate the cognitive loads associated with concept development and quantitative analysis is the theory of action that the T2E model is grounded in.

2. Reading in the content areas requires the learner both to decode the text and to internalize the concepts being discussed. Their capacity is finite – if the important thing is for them to learn the content of the text, assign readings below their current reading level. The Lexile website has a number of tools to gain insights into the reading levels of students and texts. <https://lexile.com/>
3. Modeling effective problem solving strategies is important. Novices tend to default to strategies that look at the desired result and work backward. They need to be shown that even people who understand systems well start by eliminating degrees of freedom one at a time. I’ve found it useful to remind students that “When you hear hoof beats, think horses, not zebras.”
4. Open ended problems are helpful. In experiments where students were asked to solve for as many variables as possible, versus being asked to find a final solution, learners tended to start by working with what was known, rather than what is desired to be known. These learners solved problems faster, made fewer mistakes, and retained learned strategies better than students who were instructed to solve for a single variable (Sweller, 1988). Think about the two techs- “Rule out as many systems as possible as the cause of the no start condition” is more tractable than “Identify the cause of the no start condition.”
5. Reactivate and expand existing schema frequently. As the saying goes, “neurons that fire together, wire together.” Once schema are established, repeated practice polishes them to the point of automaticity. Additionally, starting with an existing schema and developing new nuance, as happens in looping, is more efficient of mental effort than starting something totally anew.
6. Minimize distractions. If you’re showing a video from Youtube, make it full screen so that learners don’t attend to other videos on the playlist. Smartphones can be useful learning tools, but when you’re done retrieving information and want deep analysis, evaluation,

continued on next page

and synthesis, students need total focus. Mindfulness exercises have been shown to be effective in helping students transition from outside distractions to the deep work of learning. As a colleague of mine reminds me

from time to time – attention is like a flashlight – the illumination varies from diffuse to intense, depending on how narrowly focused it is, but the amount of light is always the same.

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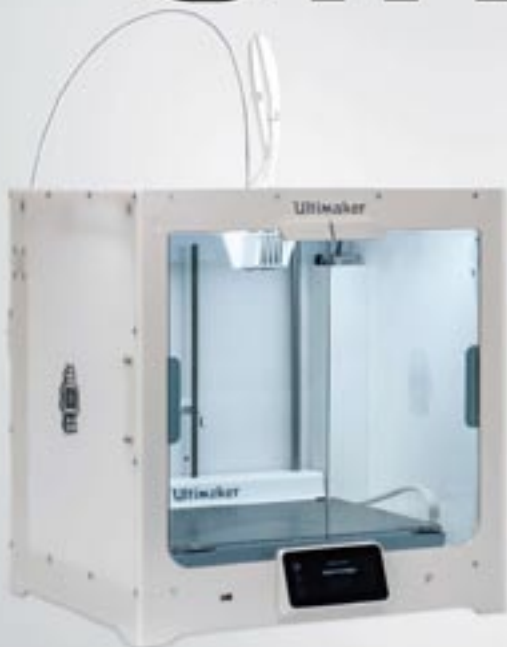
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National Apprenticeship Week Operating Engineers Externship

By Brent Kindred, DPI Representative



On an unseasonably cold day this past November, cars, trucks, vans and busses filled with students arrived at the Operating Engineers training facility in Coloma, Wisconsin. As part of National Apprenticeship Week, (November 11 – 17) the Operating Engineers Local 139 hosted a career day. Over 800 students from across the state showed up to participate in this four-hour event. Students rotated through six stations, operating earth mov-

ing equipment and running simulators. At each station, students learned about the vast array of high-demand, high-skill careers and apprenticeship opportunities in the industry. They also learned about the roads, bridges and buildings the Operating Engineers build across the state. This was a great, high quality learning experience for everyone in attendance.



ARTICLE

Summer Educator Experiences in Northeast Wisconsin

By Mike Cattelino, Fox Valley Technical College

With a lot of collaboration and cooperation from regional businesses and education partners, Northeast Wisconsin has hosted summer educator experiences the last two summers. A big thank you to all of the WTEA members that supported these events - you rock!

In the summer of 2018, it got off to a great start with the support of the North Coast Marine Manufacturers Alliance and the NEW Manufacturing Alliance. Educators toured Marquis Yachts in Pulaski to see how luxury yachts and other personal and business watercraft are constructed. The participants learned about the process from order to delivery and the opportunities that lie ahead for students. Fincantieri Marinette Marine also provided a very in-depth look into the marine craft construction industry that year, but at a much larger scale with boats being built and serviced upwards of 1000 feet long at their massive facility near downtown Sturgeon Bay.

In the summer of 2019, the experience moved from the water to land with the "Big Trucks Tour." Once again, the NEW Manufacturing Alliance supported the experi-

ence with member connections and much more! Oshkosh Corporation hosted tours at their Oshkosh Defense and Pierce Manufacturing facilities in Oshkosh and Appleton. The attendees saw (and rode in!!) the latest in tactical vehicles that will replace the Hummers. The group also got to experience the manufacturing and assembly of world-leading fire trucks and Airport Rescue and Fire Fighting (ARFF) vehicles. The event wrapped up with a session at Fox Valley Technical College's Public Safety Center where everyone got to see and experience the fire and rescue trucks in action in addition to other emergency services training.



What's next? Well, there's only one way to go. UP! The next Summer Educator Experience in Northeast Wisconsin is shaping up nicely. Save the date for the "Aviation Experience." The planning is solidifying around June 17th and 18th, 2020 for this event. You should hear more about it at the next WTEA conference at Chula Vista in Wisconsin Dells.

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Student Responses

By Brian Schiltz, Tomahawk High School

My hope is that this article finds you feeling accomplished, challenged, and eager to start the next semester. During this time of year great teachers will stop and reflect on the past semester. They will examine their degree of knowledge and experiences they instilled in their students. We may never know the impact we have had on a student's life. During this season and the oncoming months be sure to stop and reflect on what really matters.

In my experiences in education, I have learned multiple ways to evaluate the students on their skills and knowledge gained through the content and curriculum I teach them. Yet, there is the other side, the soft skills side, their story side, whatever name you tag it, there is the other side of education. This is the side that holds more importance in the success of our students in the realm of life.

I asked my students to share with me an experience they valued from one of their teachers over the years that made a lasting impact on them. Maybe it is just me, but education can be and will be challenging at times, however, while reading and reflecting on these responses I know we are all doing our best resulting in great results.

- Mr. S helps you when you don't know what to do but will never give you the answer. He will make you think so that way you actually learn and won't have to ask the same question again. DZ

- Mrs. D is not only a great teacher to me, but she's also a great person and friend with great values and work ethic, who makes class fun and exciting but also knows when to be serious. She's always happy and makes everyone's day better when she is around. NG

- Mr. B, He is always very energetic in his classes and the way he teaches his subjects makes it very interesting. CD

- Mr. S teaches life lessons along with his class and makes sure you know what you're doing rather than just do it for you and move on. NH

- Mr. P is a good teacher because what he teaches helps me in the real world. TB

- Mr. B has helped me and others with real world learning and taught me a lot that I will need to know about my future. PA

- Mr. S is a very good shop teacher. When someone has a problem, he is willing to help. He understands some of the stuff some students have been through. SJ

- In class with Mr. B, I am always being challenged and pushed to become a better person. In Mr. S's class, I am always engaged in interesting topics we talk about and do in class and am always learning how to work in a more effective and efficient way. TM

- Mr. S is easily one of the best teachers in the school. He helps you just enough to keep you on task while still letting you find the answers for yourself. MH

- Freshman year my favorite class was U.S. History with Mr. J. The class was my first class in the morning but he was always so filled with energy and always upbeat that he set the tone for the rest of the day. He was always interacting with his students and he drew the "best" reindeer. CC

- Mr. L has always motivated me to excel in class, always giving me encouragement to go above and beyond in class. One of the things that he said that is very inspirational to me was "If you can't find a hole, make one." ED

- Mr. S always provides a great hands-on learning experience, showing us and teaching us stuff we can't learn in a book and teaching us many life skills we will be able to apply for the rest of our lives. CK

Note:
WTEA Foundation Scholarship Application
Due Date is April 15.



Ashwaubenon High School Working to Improve Construction Pathway

By Dave Stroud, Ashwaubenon High School

For the past seven years, Ashwaubenon High School's (AHS) Technology & Engineering department has been focused on planning and creating a Manufacturing pathway. Those efforts resulted in the creation of the Beaux Mettler Innovation Center, new welding facilities, and numerous transcribed credits with Northeast Wisconsin Technical College (NWTC). This pathway has now been complete for over two years so our attention shifted to another area we wanted to strengthen, our Construction pathway.

For many years AHS only had a Residential Construction course which focused on carpentry. Students would build models of a residential house while learning vocabulary, tools & materials, and blueprint reading. We have now adopted the Career Connections Project Book 3 Residential Construction program for this class so students can get more authentic experiences in carpentry while earning a certification from the North Central States Regional Council of Carpenters. Students enrolled in the class this year also had the opportunity to tour the Carpenter's Union Training Center in Kaukauna during National Apprenticeship Week to learn how carpenters are trained. Representatives from this organization regularly have a presence at the WTEA conference if you have questions about this program.



At left: A Residential Construction Project. At right: AHS student learning how to install hardwood flooring as part of a tour at the Carpenter's Union Training Center.

For the past three years AHS has also offered a Construction Trades course which focuses on many areas of the construction trades such as electrician, plumber, HVAC, masonry, sheet metal, operating engineer, pipefit-

ter/steamfitter, insulation, painters, and glazers. Students have numerous opportunities to explore these in-demand, high-paying careers through class activities, tours, and guest speakers. This year the Construction Trades class went on three different field trips to the Bricklayer 500 in Oshkosh, the Construction Trades Career Day in Luxemburg, and NWTC in Green Bay. All of these events offered students the chance to learn about various careers in the construction trades by participating in hands-on activities related to the careers.



Students participating in hands-on activities at the Bricklayer 500, Construction Trades Career Day, and NWTC Construction Trades Tour.

The Construction Trades course also had a number of guest speakers come in and work with students. Guest speakers included representatives from the carpenters union, electrical workers, sheet metal workers, bricklayers, Auer Steel, Sinkler Heating, Lennox, Robinson Metals, IEI Construction, and instructors and students from NWTC. These speakers worked with students on activities related to their trade, and shared valuable insights into what a professional in their trade does.



Students working with various guest speakers from the Construction Trades.



Guest speakers representing several Construction Trades working with students.

Along with the additions to the Construction courses, we started an AHS Construction Trades Careers Council. We invited representatives from the various trades to come in and share what their greatest needs are. We also asked for feedback on our current program so we can continue to make improvements. Through the discussions, one theme stood out, the need for students to develop better employability skills/soft skills. According to the members in attendance, these skills were more important than technical skills as they are harder to teach. Based on this information, the AHS Technology & Engineering department has focused our Student Learning Outcome

(SLO) this year on researching and developing a program to teach and assess these skills. Our SLO is:

The Technology & Engineering department will research, create, teach, and reflect on a program to assess students' employability skills so that 80% of all students in every Technology & Engineering course are proficient by the end of each term. A rubric will be developed and utilized that is supported by the Wisconsin Standards for Technology and Engineering: CD4.a.6.h, CD4.a.7.h, CD4.a.8.h, CD4.a.9.h, CD4.a.10.h.

If you have any information or resources on teaching and assessing employability/soft skills that you would be willing to share, we would welcome it.

Moving forward, we plan to continue to improve our curriculum and opportunities related to the construction trades. We are also in the planning stages of creating construction related Tech Night events and a summer construction camp. If you do anything unique, highly effective, or that get students excited about careers in the construction trades, we would welcome your input or feedback. Better yet, why not share that information with everyone by being a presenter at the WTEA conference!

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LIFE AFTER THE CLASSROOM

Do You Remember Dan Jones?

Hello WTEA! It's been 10 years since I retired from Portage High School after 33 years of teaching Technology and Engineering. Last spring I attended the 50th anniversary conference in Wisconsin Dells. It was great to see a vibrant WTEA, a plethora of members and the dedicated leaders of the organization. Good for you!

As I reminisced with many of my former colleagues, I was approached to write a few words about what life is like after the classroom. I'm not sure I have any wisdom to share, but, for what its worth, I'll tell you some of my thoughts.

Near the end of my teaching career I was really enjoying myself. I had enough classroom experience to adapt to almost anything that came along, had seen enough political and administrative changes to finally believe in the saying "this too will pass," and I had become bold enough in my seniority (when seniority was a thing) to not fear that I would lose my position or job because of a year of low enrollment or tight budgets. And I really enjoyed teaching some of the children of my former students. But the time went by very fast and before I was truly ready, the Wisconsin legislature enacted Act 10 and I had to make a choice to stay and lose significant retirement benefits or to leave the profession that I loved.

As much as I was enjoying teaching overall, I was looking toward to retirement in a couple of ways. Really there were two things that I began to disdain in the last couple of years of teaching. One was the classroom bell. In spite of the few times and awkward classroom situations where I was saved by the bell, I grew to hate having the bell tell me when to begin teaching and when to end my lessons. The bell always seemed to interrupt my train of thought, break the class discussion, or prematurely end the humming classroom activity that I had worked so hard to establish. It was my great desire in retirement to abandon anything that resembled such a time constraint as the classroom bell.

Secondly, I was growing weary of having more and more students not take TEE as seriously as I felt they should - as I knew it would be beneficial to them. After 30 years of being engrossed in technical concepts, fighting for financing for materials and equipment, creating relevant lessons, and attempting to appeal to a generation that grew more distant by the year, I felt old. I guess one could attribute this feeling to age, but having quite a number of former students come to me in retirement and

say "boy, I sure wish I would have paid more attention in your classes" makes me wish I would have found a way to better reach them all for the sake of improving their lives through technology.

Now that I have been out of education for some time, I look back and see how very serious and invested I was in my teaching career - perhaps more than I realized. It is in my nature to take on good causes and try to help whenever I can. Many times I become over extended. I can now see where I may have "robbed Peter to pay Paul." At retirement, my wife said (and rightfully so) "its time for me and your family now." She could see my life track. That is why I have not been as active in my post-career as I once thought I would be. I loaded up my efforts in my professional years and now its time for other family activities. So my advice to those of you still in the thick of things is to take time often to evaluate your priorities knowing full well you can't be a part of every good thing. Do some things well and trust that the others will get done as well.



I believe it is true that time goes by faster as you get older. But perhaps that's just the age we live in - accelerated everything! I thought that in retirement I'd have plenty of time to get things done. After all, life couldn't get much faster than being a full time TEE teacher, an LVEC, a SkillsUSA Advisor, and serving in the WTEA organization, right?! As I neared retirement those who had retired before me warned me (a warning which I brushed off) that many of your family, friends, and acquaintances will tap into your life because now "you have all the time in the world" so you can help me, join this organization, volunteer your time here, and finally get to that "honeydo" list you put off for such a long time. And then factor in grandkids . . . and, well, time does go by faster as you get older! Take my word for it, you will not be idle in retirement. It is nice, however, to set your own schedule and once I learn to say "no" I will even have more time (ha ha).



Ultimately, I LOVE RETIREMENT! I have lost the constraint of the school bell. And now if I don't get something done today, I can always finish it tomorrow without hindering the "curriculum!" As for taking myself too seriously, I have gotten over that. I realize that the good Lord put me in a place for a time to affect those that came my way. Now, He has put the grandkids in my life and I will affect them to the best of my ability and with all of the teaching experience I have gained. As for the "honeydo" list . . . I'm still being creative in finding ways to lose those items. I spend time doing carpentry for my children and my church. I continue to teach teenagers at my church. I love to cut firewood and am involved in two card clubs. I am not yet a "snow bird," but I have taken short trips to the south in the wintertime. I still have a hand in the SkillsUSA organization. For several years I have been assisting with some of the Regional Leadership and Competitive events as well as the State Conference. It's great to see friends and colleagues in that setting who are carrying on a great tradition for students and to see the successes of the students.

My parting words for you are to not get overly busy and to not lose sight of the good you are doing. After all, you are affecting lives more than you know. May you find favor in the eyes of all your students and colleagues. God bless you all.




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BIG IDEAS




IN MEMORIAM

Jeffrey L. Dowd

August 14, 1940 - October 29, 2019

Unless you are relatively new to the WTEA you probably know who Jeff Dowd is. Jeff was an active member and leader of our professional association for many years. Jeff received his BS and MS degrees from Ball State University. Upon graduation, he accepted a teaching position in Racine. On December 20, 1969, Jeff married the love of his life, Corrine. He continued to teach at Racine Unified Schools for over 35 years until his retirement in 1999.



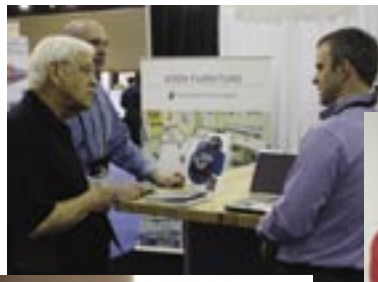
Jeff had a passion for Technology Education and continued to mentor students and teachers by sharing his knowledge and experience through the WTEA, SkillsUSA and the Foundation of the Wisconsin Automobile and Truck Dealers Association. Jeff became active in our association early in his career and continued to serve the WTEA until 2016 when he retired from his position as Exhibit Coordinator. Our profession has lost a leader and a friend.

Some of Jeff's many accomplishments are listed below:

- WTEA Lifetime Achievement Award 2005
- WTEA President 1979-1980
- WTEA Technology Educator of the Year 1983
- WTEA Exhibit Coordinator 1979-2016
- Co-chair for ITEA Conference in Milwaukee 1983
- Helped to establish the WTEA Scholarship Fund
- Worked with WATDA to create the Wisconsin AYES program, teacher training events and scholarship program
- SkillsUSA Advisor of the Year 1995

The family has created a scholarship fund in Jeff's name. Donations can be sent to:

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