

Interface

Journal of the WTEA

Volume 60

Number 2

Winter 2020 - 2021

Digital Learning in Technology & Engineering Education

2021 Virtual Conference Information
STEM Flashlight Project
Tips for Surviving and Recovering
Teacher Shortage
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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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A Light at the End of the Tunnel

By Dave Stroud, WTEA President

It's been a long year, and we're only halfway through it. My school district started the year in a hybrid instructional model that saw the students split into two groups that would switch off being in the building every other day. While it wasn't the same as having all of the students in class together, we were still able to accomplish everything that we would normally have done. We made it about three and a half weeks in that model before switching to all virtual learning, and have been in that model ever since.

To say that virtual learning in Technology & Engineering Education is less than ideal is an understatement. I struggle to keep my students engaged with this type of learning. I know that they signed up for my classes to learn about topics like construction, engineering, automation, and woodworking by completing hands-on activities, not by watching videos and completing written assignments. I feel like I'm letting them down, like I'm not doing my job, like I'm turning my students off to a future career related to our discipline. I often have that dream where I'm back in high school or college, and I can't find my locker, books, classroom, etc. They say this type of dream is related to high levels of stress.

But I think I'm finally beginning to see a light at the end of the tunnel. Our district will be returning to the hybrid model of instruction in early January. The number of positive cases of COVID-19 are falling in Wisconsin. And recently a second vaccine was approved for use. In a few short weeks I will be able to teach students in-person again, and hopefully, this is the way it will stay. I couldn't be more excited.

Now for some updates:

- We have two new members of the WTEA Board of Directors I would like to introduce. First, we have Anna Marie Vitale who is currently teaching in the Dodge-Land School District. We've also added Meghan Walters who is teaching at Stevens Point Area Senior High. Both Anna and Meghan showed interest in serving on the board, and I'm happy to say that we were able to find

a place for them. They will both be serving as At-Large Directors. The WTEA is always looking for members that would be interested in becoming more involved.

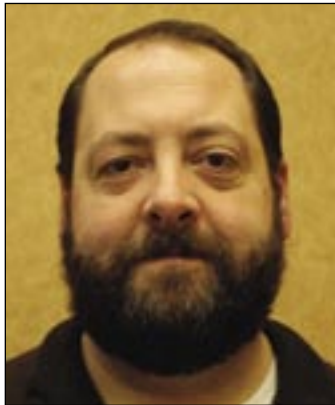
If the idea of getting more involved and developing your leadership skills is something you'd like to explore, talk to a member of the WTEA Board about opportunities to get more involved.

- The results of the survey that many of you took this fall are in, and the WTEA Conference this spring will be a virtual conference. There will be more details about the conference in this issue of the Interface, but I am happy to announce that the conference will be free to all current WTEA members, so make sure your membership is up to date.

And thank you to all that took the survey. Your feedback helped us make a hard decision, and will hopefully help us create a conference that our members will find beneficial.

- Please nominate a fellow Technology & Engineering teacher, department or even yourself for the WTEA Flexible Teaching Award. We are forgoing our normal awards until teaching gets back to normal, but we would still like to recognize those that are doing incredible work in these unprecedented times. Matt Schultz, our Awards Chair, has put together a great process to recognize the deserving teachers. Look for more information in this issue of the Interface, on the listserv, or on the WTEA website.
- Past-President Steve Meyer is planning our Project Showcase for this year's conference. Stay tuned for more information on how to include the great things you are doing with your students.

I hope that you and your families are doing well, and I hope that your school year is going as well as it can. If ever you have questions, comments, ideas, or concerns, don't hesitate to contact your district director or myself. Let's hope that by the end of 2021 that we've reached that light at the end of the tunnel, and that our lives and teaching are back to normal. Take care.



We will be mailing a conference material package in late February. To make sure you are included in the mailing, use the electronic registration form on our homepage or fill out and return the registration form on page 15 of this journal.

WTEA BOARD NEWS

2020 WTEA Fall Meeting Highlights

By Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Fall 2020 Board meeting on October 17th, 2020 held virtually.

- New Appointments:
 - Brennen Mickelson - District C Director
 - Anna Marie Vitale - Director at Large
 - Meghan Walters - District at Large
- Wisconsin Department of Public Instruction Technology & Engineering Consultant - Kevin Miller
- MATT (Madison Area Technology Teachers) are developing a Google Drive folder linked to curriculum. Links to be posted on WTEA website. Contact Jesse Domer for information at domerj@watertown.k12.wi.us.
- Jeff Dowd Memorial Scholarship has been established to honor the late Jeff Dowd, a Wisconsin educator and WTEA Life Time Achievement Award recipient.
- SkillsUSA is exploring office training through a virtual platform. SkillsUSA Conference will host virtual competitions. Working on developing "At Home Kits."
- District A Coordinator Emily Fransway has been hosting virtual tours via Google Meets with high school students. Look for invites via the state listserve.

- WTEA Student Ambassador Program has kicked off its first year. The program is recruiting mentoring teachers and student members. Information is live on the WTEA website. Contact Matt Schultz for more information at wteasap@wteafoundation.org.
- Transcript high school credits with local Technical College. Contact your technical college to get this opportunity for your students started.
- The WTEA is encouraging members to host a "High-Tech Weekend" in your area. Topics can include a wide variety of subjects; CNC, 3-D printers, Carpentry, Auto, Machining, etc. For information contact Joe Ciontea.
- WTEA Spring Conference will be held virtually this year. The Conference Planning Committee is looking for sectional presenters. Contact Steve Johnston at johnston@mwt.net if you are interested in presenting.
- WTEA Spring Conference Awards has altered the awards recognition this year to better align with the teachers modified teaching practices. The new award is the "WTEA Flexible Teaching Award." For more information visit the WTEA Awards website to make a nomination.

WTEA Student Ambassador Program Off and Running

The WTEA Student Ambassador Program has kicked off! The program has five official students enrolled in the experience. Students are working on developing a professional portfolio which highlights their experience in the program. Students and mentors are collaborating on preparing lessons plans, teaching lessons, and participating in volunteer experiences.

The WTEA has partnered with the UW colleges who offer 220 licenses to provide "Virtual Campus Tours" allowing Student Ambassadors an opportunity to take a closer look at the Technology Education programs at the respective institutions.

The WTEA Student Ambassador Program will be recruiting more student members during second semester. The Student Ambassador Committee cannot stress enough the importance of classroom teachers investing in it to make the program successful. The future of our profession relies on all of us continuing to inspire students to feed that pipeline of future teachers. It is not a lot of work on the teachers end - the WTEA has taken that responsibility off of you by creating this program. So be a part of this great program and fantastic opportunity for you students. Please don't hesitate to reach out with any questions to Matt Schultz at wteasap@wteafoundation.org.

- Dates to Remember -

March 4	2021 Virtual WTEA Conference	(Virtual)
March 8 - 12	SkillsUSA WI Regional Competitions	(Virtual)
March 22 - 27	ITEEA Virtual Conference	(Virtual)
April	SkillsUSA WI 48th Annual State Conference	(Virtual/Hybrid)
May 15	WTEA Foundation Scholarship Application Deadline	
June 21 - 25	SkillsUSA 57th Annual National Conference	(Virtual)

From the Desk of the Vice-President

By Bob Morehead, WTEA Vice-President

Pandemic, quarantine, fatigue, stress, exhaustion, mask mandate, disappointment, frustration. These words summarize the past year. Schools shut down in the middle of a term. Students were pulled out of class and isolated. Curriculum was thrown out. Extra curricular activities were canceled. People got sick, real sick. People died!

Creativity, imagination, vision, resourcefulness, professional growth, dedication, family, perseverance. These are also words that describe the past year. We tackled unforeseen challenges. We took a hands-on curriculum and found ways to teach



it virtually. Many teachers took on new roles, taught new classes, and simply found a way to survive. Some schools mangled their schedules into a blended, cohort group, face-to-virtual, upside down nightmare, and yet technology education teachers figured out how to make it work.

Optimism, hope, joy, vaccine, anticipation, health, faith. These are words that I look forward to in 2021. We are on the brink of normalcy and I welcome it with open arms. I wish all of you good luck! Have a great second half of your year and don't forget to check out the

free WTEA Virtual Conference.

Check your expiration date now!

Check the first line of your address on the back cover of this magazine to see when your membership expires.

Membership dues need to be paid beyond 2020 for free registration to the virtual conference.

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E-Mail: chopinm@waterloo.k12.wi.us

Education & Certification

UW-Madison BS - Communications
UW-Stout MS - Technology Education
NCEER Instructor, NIMS Instructor, MATC Dual Credit Instructor



Professional Experience

I am currently the Technology Instructor at Waterloo High School. I am a single person department with classes ranging from traditional woods and welding to upper level engineering and manufacturing classes. We also have several different CNC machines and are currently going through a transition to modern manufacturing including NIMS certification. I teach a wide variety of classes including Architectural Design and Engineering Concepts. I also teach classes including Video production and Photography. I have been the Yearbook Advisor for 13 years and produce an award-winning yearbook that each year has won awards from Kettle Moraine Press Association.

Waterloo High School, Technology Education – 17 years
Johnson Creek High School, Technology Education – 1 year
Football Coach – 8 years
Yearbook Advisor – 13 years

Leadership, Awards and Recognition

Manufacturing Development Committee
Technology Team
School Safety Committee
KEMPA 1st Place Award for Yearbook
ALICE Intruder Training Instructor

Position Statement

I am in a position that I would like to be able to help and also further the reach of the WTEA. I think it is important to advance the level of training of our resources that are available for all Technology Education Instructors. I want to start to be able to work with other members of the WTEA to help create a pool of resources. I want to be an active member and work with other Technology Education Instructors to better the profession for all.



Notice

As previously announced, the deadline for submitting nominations for WTEA Secretary/Treasurer and WTEA President-Elect was December 7, 2020.

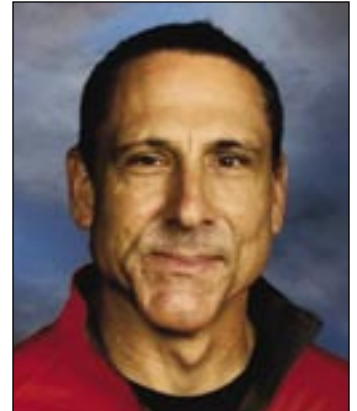
According to our bylaws, if candidates run unopposed, a unanimous ballot is cast by the Board and no paper ballots are mailed.

Candidate for WTEA President-Elect Doug Dimmer

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Education & Certification

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1220 License Certificate
National Louis University: Masters Instruction and Curriculum
The emphasis in Industrial Studies
PLTW training (IED, POE, CEA, CIM),
Industry certifications in AD-Hoc instruction and Energy Education



Professional Experience

As a teacher, my mission is to create, for all students, opportunities to promote their academic and applied knowledge which will inspire them to challenge personal abilities to be the best leaders in the professional technological community. With that being said, I have taught now for 20 years, this being my first year at Cedarburg High School working within the engineering and technical education department. Prior to this, I spent 5 years at Hartford Union High School and 14 years at Homestead High School. I have been responsible for teaching in almost every department at each of these schools. I have taught collaboratively with the science and math departments in a STEM Bundle program in Hartford and created a start up Printing business and class at Homestead that funded itself.

As extracurriculars go, I have coached football, wrestling, and track and have been a mentor to the FTC program and adaptive education programs. Prior to teaching, I spent 11 years in the private industry working as an industrial sales representative and a sole proprietor of my own light construction business. I also have worked as an Ad-Hoc Instructor for UW-Stevens Point's KEEP Program.

Leadership, Awards and Recognition

WTEA Board Member
Certified PLTW Instructor: IED, POE, CIM, CEA, and PLTW CIM EoC Test question writer
UW-Stevens Point Certified KEEP Instructor
Department Chairperson and Carl Perkins funds manager at Homestead High School
Mentor the First Technologies Competition (FTC) Robotics Club.
Mentor for SMEAF/SAGE Inclusion Program - Highlander Roasters.
Ozaukee WorkForce 2020 Youth Apprenticeship Coordinator
PLTW Student Coordinator

Position Statement

I have several ideas if becoming President but consider focusing on what I believe are essential to lead:

- My number one goal is to advocate for the state to create a requirement in technical education literacy which would help populate our classes and help students understand the relevance and need for a technically enhanced workforce (one half credit).
- To continue to strengthen the membership of the WTEA through some of our collaborative teaching partners in science, math, and computers (either invite as guests or become associate members).
- To strengthen our relations with surrounding states' technical education associations to build credible and reliable standards to teach and to grow by.

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Upcoming Instructor Certification Training Dates:

January 21-22, 2021 CPT+

February 22-24, 2021 CPT & CPT+

March 29-30, 2021 CPT+

April 29-30, 2021 CPT+

All sessions will be held at Gateway's SC Johnson iMET Center in Sturtevant, Wisconsin.

Learn more about the courses and preferred instructor qualifications at gtc.edu/CPT.

For more information contact Matt Janisin at janisinm@gtc.edu.



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WTEA EXECUTIVE DIRECTOR

From the Desk of the Executive Director

By Joe Ciontea, WTEA Executive Director

Greetings. By the time you read this you will be back to school and teaching after a much needed vacation. I hope that you and your family are well and have been successfully navigating the challenges of the pandemic. Thank you for your commitment to supporting and teaching Technology Education during adverse conditions. Our Board of Directors has been working hard all Fall with lots of emails, phone calls, and web meetings to stay the course for our association. I have provided some important updates for you below. Please take a few minutes to review them.

Please look at your mailing label – today.

The first line of the Interface mailing label shows when your WTEA membership will (or did) expire. Even though you received this journal your membership may have already expired. We often mail an issue or two out to members after their actual membership expires. The income from membership dues is used to keep our association running all year. The Board of Directors work all year promoting our profession and working on professional opportunities, and of course publishing the Interface Journal. Access to our virtual conference will be free if your membership is current (membership expires 9/1/2021 or later).

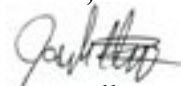
Virtual Conference

If you attend the membership meeting at our conference you know that the financial health of the WTEA has improved significantly during the last decade. That really started with our work on the ITEEA annual conference held in Milwaukee during the Spring of 2015. During that

process we began working with exhibitors and business and industry partners to sponsor various aspects of our state conference, workshops, and other association activities. We set our fees for each event based upon a break-even budget. The income and in-kind donations from our sponsors and partners in combination with large attendance at the conference has made a big difference. That is why we can provide the 2021 virtual conference at no cost for members.

The conference will not be the same as our typical annual event, but I believe it will be meaningful for everyone, with lots of timely content and some special opportunities from our sponsors and exhibitors. I am sure the last thing you want is to spend another day in front of a computer screen. I suggest you check in to the conference website (it will be located at a different web address), using your supplied login and password, on March 4th and check out what is there. Be sure to sign up for the free offers, most of them are only available for a few days. Return at your leisure and watch the sectionals and demonstrations as time permits - the website will remain active until August 1st. Be sure to download the related files for your future reference. Please reach out to any WTEA Board member if you have any questions.

Please support our Advertisers, Exhibitors, and Sponsors!



P.S. Please take a moment and make nominate a colleague or yourself for the Flexible Teaching Award.



We will be mailing a conference material package in late February.

To make sure you are included in the mailing, use the electronic registration form on our homepage or fill out and return the registration form on page 15 of this journal.

WTEA Foundation Scholarship Applications Due May 15

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.

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

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 May 15

DIRECTOR REPORTS

Middle School Roundtable Virtual Session

By Angie Arneson, Seymour Middle School



Hello amazing people! WOW, what a year it has been! I don't know about you, but I am sure thankful that 2020 is in the past and we can focus on 2021. As you are aware, the WTEA conference will be virtual this March 4 and the WTEA board has been working hard to make it a great conference.

I wanted to make you aware that I will be hosting two different Middle School Roundtable Discussion sessions on March 4. This will be a time where Middle School teachers can come together and discuss topics related to our level of teaching. It is important, more now than ever before, for teachers to network together and discuss what's working well this school year. We will also discuss the struggles this school year has brought and how to overcome those problems. I hope to "see" many familiar faces on March 4 for these sessions!

My students are hybrid - they are face to face for two days and virtual for three days. Many of my students struggle with virtual learning, but they have figured out ways to overcome their struggles. The following are a few examples of what some of my students have done to over-

come their problems as they deal with virtual learning.

Student A: I create a checklist of things to do each day and cross off each item when I am finished with it.

Student B: I get all of my schoolwork done right away in the morning so I don't have to worry about it in the afternoon.

Student C: I get my work done as fast as I can so I can spend time with my family.

Student D: I work on my school work for a while and then I take a break and repeat the process all day.

Student E: I drink my coffee and I just stay focused at my desk. I also eat a good breakfast each morning.

Student F: I have a stress ball in my hand while I am working on school work and I watch YouTube videos during the day.

Student G: I try to stay focused on my schoolwork and get what is due the next day done first. If I have time, I do the work that is due later. I reward myself by going outside to ride my dirt bike or jump on a trampoline.

I was really impressed with how my students are making virtual learning work for them and I hope you are encouraged to ask your students what they are doing virtually to make this school year a success.

Join our discussion on March 4th.

Navigating New Territories at UW-Stout

By Barb Bauer, UW-Stout



Again, we are navigating new territories with our college students and COVID-19. Our university students are working hard on their course work, whether face-to-face or hybrid. Technology Education students at the University of Wisconsin-Stout (UW-Stout) will be able to use their online experi-

ence in their student teaching. Students have used different online platforms: Zoom, Microsoft Teams, Collaborate Ultra and Google classroom. How nice is that! This has been a time of opportunity in looking at new ways to teach content. Our students will be prepared to teach face to face and online once they have a job and are in their own classroom.

As always there is still a high demand for technology education teachers. WTEA has started the Student Ambassador Program. I have had conversations with Matt Schultz in how this program is beneficial to our schools and students. You can find information on the WTEA website. I have also had the opportunity to meet a couple of the students that are ambassadors. It is exciting to see the enthusiasm that these students bring to the table. It is more exciting to see classroom teachers finding the natural born leaders that will make great teachers.

In preparing our technology education students for the job as teachers, I would like to thank the schools that have allowed the UW-Stout students into their classrooms. These are valuable experiences for our students. We are always looking for different placement sites. If you are interested, please contact me via email.

New WTEA Director-at-Large

By Meghan Walters, StevensPoint Area Senior High



I would like to introduce myself to everyone! I am beyond excited to be a part of WTEA in a larger capacity than just being a member. I am one of the four Directors-at-Large for the association. This is my sixth-year teaching and my first year at Stevens Point Area Senior High (SPASH). My back-

ground includes being a substitute teacher for a couple years and for 18 years I was a part of STEPS at UW-Stout in multiple positions. The last and longest position I had was the Technical Director for STEPS.

With this being my first article, I thought what not better to write about than the face-lift that SPASH received this past summer. Every area in the technology education department was able to have part of the transformation. The largest transformation was being able to expand our auto shop from two bays with hoists to five bays, four of them with hoists. The auto shop also includes a large tool room and storage room. The machine shop is brand new as well. We have expanded from one HAAS CNC mill to four along with one HAAS CNC lathe. The manual mills and lathes were also replaced to include brand new ones totaling five manual mills and eight manual lathes. The

machine shop is also set up with an inspection room. Our small engine shop was able to be re-located into the front part of the auto shop making room for all the students to work.

The boldest change to each room would be the bright red cabinets, tables, and carts each room received. Graphics now has better storage for their screen-printing items and an awesome looking broadcasting desk. Woods has large cabinets for all the tools and a divided cart for all of its fasteners - no more searching for boxes! Autos, machine tool, and welding also have carts for the students to move around with their tools and easier to find storage cabinets. Each room also received a new paint job and epoxy floors. An air compressor was added to handle the autos, woods, and machine tool room all at one time. Ventilation was updated in woods and welding as well. All of this couldn't have been done without the referendum passing!

The next best thing is going to be able to get the students in the shop for longer periods of time than what we were able to have earlier in the semester.

I hope everyone has a fabulous rest of their first semester and a smooth transition into 2021! I look forward to working with all of you and am here if anyone needs help or has questions!

An Interesting Year

By Emily Fransway, Balwin-Woodville High School



I hope everyone has survived and made it through 2020! This year has been an interesting one to say the least, and I'm not going to lie, there have been days when I definitely do not like my job. Something that I think a lot of us forget about, though, is with all the changes that we as teachers have

had to make, the students have had to make just as many changes (if not more). Yes, we all have those kids who

don't get on the Google Meets "just because" or don't complete their assignment because they don't feel like it but I've also had students who legitimately could not get on the Google Meet because they are watching their three younger siblings at home while their parents are still working their full-time jobs.

So, when there are days when those ten percent of students are not getting their virtual assignments done, think about the other ninety percent that are adapting and doing well with all the changes that have happened and the challenges they face.

Notice:

If you are not receiving the Technology Educators listserve postings, you can sign up by sending an email from your preferred email account to: subscribe-technologyed@lists.dpi.wi.gov

How Can I Best Impact My Students During Our Current Situation

By Jon Larson, Little Chute High School



Over the past nine months, I have struggled with my profession. If someone would have told me years ago that one day I would have to teach my hands-on, engaging curriculum through a computer video conference with a majority of my students at home, I would have laughed. If I would have believed

them, for some crazy reason, I would have considered a career change. I love being a teacher. I enjoy sharing my passion and motivating students to become better than they were yesterday. It's why I get up and go to work every day.

A few weeks ago I saw something that has stuck with me, and has changed how I go about my days here in Little Chute: **"Focus on the relationships."** I am not sure how I lost sight of that in the last nine months, but in the struggle with content and blank screens looking at me, I know I did. I needed a change, and I decided I was going to focus on my connections with my kids. I have resigned to the fact that we are not going to cover everything we have in the past. We are going to cover some different

things because of our hybrid model here and that is okay because I am going to focus on my kids and their connection to what we are learning.

So I have started to make an effort to talk to any kid, anywhere in the school, and certainly every kid in my class (even if their camera is off and they mute themselves). When I walk through the halls before school, between classes, or at lunch I simply say "Hi" or ask "What's for lunch?" or I ask about how things went with the latest basketball game. I think I was trying so hard to do everything I "needed" to do and was stressing about the curriculum that I got a bit lost about what matters most - our students' connection to school and their teachers. Now I am making sure our students know I am interested in how they are doing and I'm here for them if they need something. I know if I do the best I can with the time I have, and I keep the kids engaged, they will learn something useful and they will come back for more.

Everybody talks in passing about how hard this is, but it really is. Maybe this can help one or two of you reading this. Maybe this is your chance to get back to who you are as an educator, stop worrying about the things we can't control, and do something about what we can.

Finding the Positives This School Year

By Alan J. Mamerow, Sussex Hamilton High School



The start of the 2020-21 school year has been unique, and likely will be through the end of the year. Despite various challenges that we have faced, I have been very excited to see amazing project ideas for both in-person and virtual learning shared on the listserv. As always, I am impressed with the sharing and

collaboration that occurs within our WTEA community.

One of the things that I challenged myself to do at the start of the school year was to find ways to make what I did this year usable beyond just this school year. I had been very disheartened doing schoolwork in the spring semester of last school year because so much of what I was creating for virtual learning felt like a waste of time, as I couldn't see myself using any of it again. I found that

by giving this challenge some thought, it wasn't as difficult as I expected it to be. I made videos on Haas CNC setup and operation, screen printing, electrical wiring, and more. I don't plan on replacing my in-person instruction with these videos in the future, but I can definitely see myself assigning some of the videos as homework to try a flipped-classroom style approach and give my students more worktime, or keeping the videos as resources for absent students to (hopefully) catch up more easily.

Don't get me wrong, not everything that I am creating for my classes this year is something that I can use in the future. Some of the work that I am doing seems worthless, and probably is. But I challenge you to find a way to take something that you are doing this year and use it for many school years to come. Capitalize on the effort that you are putting into this year and make the payoff from it last into the future!

Virtual Teaching a Machining Class

By Eric Sutkay, LakeView Technology Academy



What an interesting year to say the least. We all thought the end of the 2019-20 school year was a challenge. That has not changed for the start of the 20-21 school year. My district started off hybrid, meaning I was teaching in-person students and virtual students at the same time. We started with approximately 75% in-person and that slowly decreased to about 50% before we went all virtual just before Thanksgiving. We will stay this way until at least January 11th and likely through the end of the semester. Adjust, pivot, what other adjectives can you use to describe this?

During all of this there is one thing that I have enjoyed teaching in my machining class. This is a second year class which I typically teach using mostly manual machining skills with the machines that we have, but also some of our lasers. This year I decided to add a CNC unit to this class to introduce students to CNC, and man, am I glad I did! This is the one thing that has kept us connected through this virtual reassignment. Two years ago I attended the NC3 Tormach Train the Trainer and this past summer we purchased some of the xsTECH routers. After going virtual we dove right into the certification. This is a good introduction to CNC with a lot of information for a beginner. The Tormach Path Pilot software is easy to use and they offer a virtual hub so the students can do conversational programming at home. I have utilized this for over a month now and it has worked fairly well. We walk through some of the programming, students work in breakout groups, they upload their programs to google classroom and I run them here at school. Sure the students don't get the hands-on experience of loading their parts in the machine and setting up their work offset, but they are able to look at their program and troubleshoot issues as they arise with me operating the machine.



In all, the Tormach xsTECH router has been a great addition to my machining classroom. I knew I would utilize it at some point throughout the year, and I was hoping to have students on the machines in small groups to turn them loose, but this is the closest I can get. I am getting pretty good at loading parts into the machine! If you are looking for a basic introduction to CNC in your class, take a look at the Tormach xsTECH and the certification through NC3. It is a good place to get started.



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Camper Dave Says....



Bring on the Projects!!!

Overview

Even though the 2021 WTEA Conference on March 4th is virtual, we will still be holding the 12th Annual Project Showcase! The showcase will just look a little different. This year we are asking members to submit digital pictures of different projects that they and their students have done. This may actually make it a lot easier for many of you and will provide some great resources for the entire membership. The projects do not need to be from this past current year.

The Process

Instead of a physical project, you can submit digital pictures, a description, and your contact information directly in the form of a Google Doc, WORD file, or PDF to a Virtual Project Showcase Folder located in the shared WTEA Google folder. I will have folders set

up for you to organize by content areas such as construction, machining, electronics, etc. I will also have an example template that you are welcome to use.

Benefits of the Virtual Project Showcase

The Virtual Project Showcase will actually give us some advantages to the in-person event. Many projects in the past have been too large to transport or display. Here are some additional ideas that would be great to see this year with the new format:

- Pictures of construction projects, tiny homes, etc.
- Larger woodworking projects.
- Unique tools/clamps/fixtures & storage ideas from your lab.
- Energy efficient vehicles, project grills, large robots.
- Mechanical and architectural 3D model renderings and files.

It is Up to YOU!

Your contribution of projects will make the showcase a huge success and help continue the tradition. We want to see projects from all grade levels (elementary, middle, and high school). I am sure you have pictures already taken or can snap some shots quickly in your lab. We are not asking you to spend much time on this, however, the value to our membership will be HUGE!

Coming Soon

Watch for more information on the web and DPI listserv as time gets closer.

Please email Steve Meyer at meyerst@fvtc.edu if you have any questions.

WTEA Flexible Teaching Award

The WTEA has created a new award for the 2020-2021 school year. This year teaching is different for most educators. Whether your class is virtual, in person, or hybrid, your instruction has been uniquely modified to facilitate to all your learners. This year the WTEA will not be utilizing our traditional association awards. Instead we are focusing on recognizing Technology Teachers who have had to modify their teaching and classroom. This award is for any and all WTEA members - everyone is eligible. If you were an award recipient in the past you are still eligible. If you are nominated for this award, it will not affect your chances of getting an award in the future. Please note that we will continue with our traditional awards once our classrooms get back to normal.

Award Criteria

This award is available to Technology Education teachers, and/or entire Technology Education programs. Teachers and/or programs are either nominated, or can

nominate themselves. Teachers and/or programs who are nominated for the "Flexible Teaching Award" are to create an electronic portfolio that demonstrates the following categories: Preparation, Lesson/Lab, Creativity, and Student Engagement.

Teachers and/or programs who are nominated will submit an e-portfolio showcasing their "Flexible Teaching Experience" and will be honored at this year's WTEA Virtual Conference. Many teachers have put so much time and effort into modifying their classrooms. Take this time to share your efforts and inspire others in the profession with the tireless work you have all done.

Link to Nomination Form

Award nominations can be made by an administrator, colleague, or you can self-nominate. The link is <https://forms.gle/gq9Dmp2feNhDXbTr9>. If you need assistance or have questions, please contact our committee by email at awards1@wteafoundation.org.



WTEA 2021 Virtual Conference:

“Digital Learning in Technology & Engineering Education”

The WTEA invites you to participate in the 2021 Virtual Conference. The conference program is packed with excellent presenters offering a variety of topics to help inspire and motivate each of us.

We start things off on Thursday, March 4th, with a general welcome to all members given by WTEA President Dave Stroud.

Next, our keynote speaker, Kim Bassett, President and CEO of Bassett Mechanical and “Gen Xer,” will talk about what skills Gen Y and Z need in today’s workplace. With the world being different in many ways than it was when Gen Xers entered the workforce, what skills do these tech savvy younger generations need in order to excel in today’s working world? Kim will discuss an array of employability skills that are important today including: strong soft skills, a basic understanding of Lean concepts, and safety. She will also provide suggestions and opportunities for positioning students for success and growth in their early years of employment.

Thursday is also the time to visit the virtual trade show. Our vendors are extremely important to our association and our programs. Our trade show features numerous vendor demos exhibiting up-to-date products and services for our field.

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: How Automotive Electric Motors Actually Work, Submitting Photos of Student Work on Chromebooks, Building Paper Roller Coasters, Building and Trades Virtual Options, GoPro Livestreaming Your Tech Ed Classes, Guided Bend Test in Welding, Laser Engraver - A Manufacturing Machine, Synchronous Virtual Reality Simulation from Anywhere!, CNC Mill Project – Level, Middle School Roundtable, New Teacher Boot Camp, the Project Showcase, and much more!

Put March 4, 2021 on your calendars, and fill out and send in your registration form today.

Memberships can also be purchased online with a credit card at the WTEA website.

2021 Virtual Conference Registration & WTEA Membership Application Form

Membership year runs from September 1st through August 31st

Current members who complete this form and submit it to the WTEA by Monday, February 8, 2021 will be mailed a package of conference materials along with the conference T-shirt.

Full Name _____

Email Address _____

Preferred Street Address (for mailed conference materials) _____

City _____ State _____ Zip _____

Address above is for: ☐ School ☐ Residence

School Name _____

T-shirt Size ☐ S ☐ M ☐ L ☐ XL ☐ XXL ☐ XXXL

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

Check the appropriate boxes below and amount due

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

☐ Membership is current - no fee required **Amount due \$** _____

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

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Wisconsin SkillsUSA Update

By Kevin Miller, State SkillsUSA Director

Like nearly everything else this school year, SkillsUSA has had to adapt to the pandemic. With the increased need for virtual networking, National SkillsUSA developed a new website called SkillsUSA Connect, which is considered “SkillsUSA’s Virtual Community.” Connect brings numerous resources together to be more accessible and it facilitates the creation of state and local networks. Every state and chapter can create their own page accessible only to their members to be used for communication and planning.



The landing page when logging into SkillsUSA Connect

National SkillsUSA has also adapted their numerous activities for virtual delivery. They have been running student leadership conferences, training events, professional development, and numerous collaboration events using Zoom or similar platforms. In addition, the 2021 National Leadership and Skills Conference will be a virtual/hybrid event.

Similarly, Wisconsin SkillsUSA has adapted our activities for virtual delivery. In October, we conducted a virtual Fall Leadership Conference and Chapter Officer Training. These were state-level events, but they were run through National SkillsUSA. We are now planning virtual/hybrid versions of the Regional and State Leadership and Skills Conferences.

The virtual/hybrid regional will replace the usual six regional and all the district events with a single event open to all secondary SkillsUSA members in Wisconsin. The regional will be a cooperative effort by all the institutions that normally host a regional. This approach will open up new regional contests for some students whose usual regional doesn't offer those events. Rather than a single day, the regional will take place over an entire week, March 8-12, 2021.

Similarly, the 2021 Wisconsin SkillsUSA State Leadership and Skills Conference will be virtual/hybrid taking place throughout the month of April. While this format isn't ideal, it may provide opportunities for more students to participate. Travel will not be required, and many events will have flexible times during which students will compete.

Both the Regional and the State Conferences will have contests that are fully virtual while others will include a hands-on component. The hands-on elements may be live streamed for observing judges or may need to be recorded for submission. Some contests will have photos of completed work submitted while others will ship projects to the judges. Details were still being worked when this was written.

Both conferences will also include virtual opening and awards ceremonies along with other events for students and advisors. Again, due to the virtual nature, nearly all Wisconsin SkillsUSA members should be able to attend these activities even if not competing.

As always, we are looking for volunteers to help plan, conduct, and judge contests. If anyone is interested, please contact our Wisconsin SkillsUSA Events Coordinator, Amy Kennedy, at amy@skillsusa-wi.org or 608-698-8700.

We are certainly hoping the 2021-22 school year allows in-person events to return. Yet we are excited about the opportunities this new format will provide and the tools being developed that can make future events even better.

SkillsUSA
Champions at Work

PROJECT

Project Build - A Simple Flashlight For So Many Learning Opportunities

By Steve Meyer – Manager of STEM Education, Fox Valley Technical College

Overview

Whenever I start designing an experience for students, I always try to get as much mileage as possible out of the opportunities to teach various concepts, introduce new technical skills, and have students gain great understandings of big ideas. I also try to create activities that can be used in a variety of classes and can be scaled up and down depending on learning purpose, age range, time, and equipment possible. In this article I will show you a simple flashlight “project” and give you all sorts of ideas on how to make it into a great learning experience no matter what your end goal is. All the necessary files and information for this project are located in the WTEA Foundation Google Drive Folder titled <https://tinyurl.com/InterfaceFlashlight>.

Background

First off, a disclaimer - this project is not perfect by any means. There are lots of ways to make it better which is part of the fun. I will give you a basic plan and you and your students can take it as far as you want.



I have used this activity for the following:

- A quick FABlab experience for teachers, administrators, and others wanting to learn about digital fabrication.
- Parent preview night.
- Boys' and Girls' Clubs, Boy Scouts, summer camps, and birthday parties.
- Electronics courses, CAD classes, Design classes.
- A graphics activity, a send-home virtual school activity, and as a character education experience with my high school students and younger students.

The ultimate goal is to make a very simple light emitting diode (LED) flashlight using some simple, inexpensive materials.

How It's Made

This flashlight is built by cutting out and then layering three pieces of corrugate together in the form of a flashlight. The center section provides just enough room to house the flashlight components. After wiring the components together, the layers will then be glued or taped together. The outside of the flashlight can then be decorated. The layers of corrugate form a membrane switch.

When you push down on the top piece of cardboard, the conductors on the inside of the top and bottom layers make contact just as a momentary push-to-make switch.

Components Required

(links to the components on Amazon located in the shared Google folder)

- 5mm LED (any color should work, however, different colors have different voltage requirements) – White 100 pack – \$5.95
- 3V Coin Cell Battery (CR2016 works well) – 10 pack – \$5.99
- Copper Tape – 1/4 inch wide, 88 yards – \$8.99
- Resistors – optional depending on LED Voltage requirements – 100 pack, 47 Ohm - \$5.95
- Corrugate
- Scotch tape or hot glue
- 8 1/2 x 11 inch full sheet computer label material (if you want to print stickers)

Approximate Costs for Flashlight Project

\$1.00 including corrugate, tape, printed label sticker.

Flashlight Build Construction

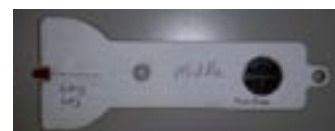
Step 1. Cutting out the Flashlight Layers

Cut corrugate layers on a laser engraver (I either cut them out beforehand or had the file loaded and just had the students click on “Go” with their individual sheets of corrugate). The DXF and Corel Draw files are located in the shared Google folder.



Step 2. Wiring the Positive Side of the Flashlight

On the middle corrugate layer, place down a strip of copper tape from the long leg of the LED to the center button hole. Then place another strip of copper tape from the other side of the center button hole to the positive side of the coin cell battery.



Step 3. Wiring the Negative Side of the Flashlight

On the other side of the middle corrugate layer (negative side) place a piece of Scotch tape over the center button hole. Run a piece of copper tape from the short leg of the LED down to the top of the coin cell battery. Feel free to place Scotch tape over the copper tape on this side.



Step 4. Wiring the Button Flap

Place a piece of copper tape on the cut-out button flap. Be sure this runs down the center so it matches up with the center hole in the middle layer. This will act as the contact for the momentary push-to-make switch.



Step 5. Putting the Layers Together

Layer the pieces of corrugate together so the copper button strip is on top of the open hole in the second layer. You should be able to test the flashlight to make sure it works at this stage. When it works, use double sided tape or a little bit of hot glue to put all of the layers together.



Step 6. Decorating the Flashlight

Have students use a graphics program or even PowerPoint to design and put colors on the flashlight templates. (PDF template is in the shared Google folder.) Each student should be able to print the two sides on an 8 1/2 x 11 inch piece of paper or full sheet label sticker paper. They can then cut them out and stick them on top of their flashlight to make it look more realistic.



Helpful Hints and Troubleshooting

Here are some things that I found helpful in construction and making sure flashlights work properly:

- The specified copper tape has a conductive adhesive, but sometimes students do not get the tape down good enough on top of the LED. First put a small piece of copper tape down underneath the legs of the LEDs and then sandwich the leg between the top layer of copper tape. Have the students push down hard on the copper tape.
- Make sure the button hole and the top button flap line up so that the copper tape makes contact when you push it down. You may have to experiment with different size holes to see what works best.
- Have students test the circuit first by just figuring out what side of the LED needs to go to the positive side of the battery. Once they figure that out, have them label the inside layer of corrugate.
- After a while, the corrugate will break down around the button. Have them build another one!

In Conclusion and What's Next

As mentioned earlier, this project can be the starting point for developing some rich learning experiences. Some other ideas that would be very educational are:

- With younger students, purchase some different inexpensive flashlights and have them take them apart and diagram and name the parts.
- I think this would be a great "reverse engineering" experience for a 3D modeling computer aided drafting class. You could give students cheap plastic Vernier calipers and have them take dimensions and sketch the LED and battery. They could then model them and draw their own corrugate flashlight shape. They could assemble them on the screen, color them, etc. and then cut out and design their own style and shape.
- Have students use an electronic schematic program to draw the simple electrical circuit (such as fritzing.org). They could even print this off and stick it on the back of their flashlight.
- Have students see if this can be made with 3 layers of thin clear acrylic. It would be neat to see the insides of the flashlight.
- Have students design a flashlight with two batteries and teach them how to use Ohm's Law to figure out the appropriate resistor size needed.
- Have high school students make all the parts and then have them partner with some elementary school students to help them construct them (recruitment and great character education)!

I hope you have success with this project. Visit the WTEA folder to access a PDF of this document, cut files and design templates, and a components sheet with ordering information. Good luck and Keep it STEMY!

Technology and Engineering Education Teacher Shortage: Contributing Factors and Perceived Needs

A Thesis by Pete McConnell

The overreaching problem that guided this research project was the critical shortage of technology education and engineering (TEE) teachers in the state of Wisconsin and the use of experience-based licensed teachers filling TEE teaching positions in the state of Wisconsin. This shortage of TEE teachers has been identified as a critical issue. There had been 242 unique experience-based licenses issued by DPI between 2015 and December 2019 (Kindred, 2019). These alternate route licenses represent TEE vacancies that are not being filled with #1220 baccalaureate based teacher preparation graduates.

The research conducted in this study was intended to describe different factors associated with the TEE teacher shortage and factors that led to technology and engineering education teaching positions not being filled. Factors related to the shortage included a low number of pre-service teacher candidates graduating from four-year university programs, teacher candidates leaving the classroom to accept jobs in industry, legislation that did not support TEE growth, licensing requirements, and teacher attrition factors. All of these factors have added to the decline in the number of qualified TEE teacher candidates to fill existing TEE teaching positions in K-12 school districts.

Purpose of the Study

There are many factors that contribute to the TEE teacher shortage in Wisconsin. This thesis included a literature review that investigated factors that contribute to the TEE teacher shortage. Investigating a historical perspective of TEE teacher supply and demand issues demonstrated evidence that the shortage issue is not new and that it has been a serious concern of technology education program scholars since the late 1980's. The current issues related to TEE teacher supply and demand define the causes of the present day TEE teacher shortage. These factors relate directly to recruiting, retaining, and rehiring TEE teachers. The impact of social and political factors that have contributed a major role in effecting the decision making of prospective candidates and frustrated teaching veterans will be identified.

Developing induction, coaching, and mentoring strategies that respond to the specific needs and skills of experienced based licensure teachers are topics explored in this paper. This will be done by looking at the general skills and expectation needed to be an effective teacher,

teacher preparation frameworks, standards and evaluation criteria, technology education content knowledge, experience-based licensure, and teacher preparation models.

Methodology

The research questions that guided the study are:

1. What are the perceived needs of the experience-based licensure (EBL) teachers as they enter and seek to remain teaching technology and engineering education?
2. What are the professional development strategies utilized by K-12 school districts to support their experienced based licensure (EBL) teachers?

The participants for the study were selected from the state of Wisconsin. Experience-based licensure teachers were chosen using convenience sampling from communications with representatives from the Wisconsin Department of Public Instruction, and from professional contacts with the Wisconsin Technology Engineering and Education Association. A list of potential participants was assembled and an email was sent to each individual requesting participation in this study. Instructors that agreed to participate, and the associated administrators from those schools, were used in this research study. The study involved a quantitative Qualtrics survey that asked instructors to self-rank their competency levels related to teaching. The instructor participants were interviewed to answer questions related to their perceived needs and professional development supports. Administrators were interviewed to answer questions related to the strategies and supports that they provided to their EBL teachers. The quantitative and qualitative data was collected and analyzed. For this article the interview questions will display the collected research. The quantitative data is well defined in the research.

Interview Questions for Instructors

1. What brought (encouraged) you to teaching technology education and engineering (TEE)?
2. Describe your background credentials.
3. How many years have you been teaching TEE?
4. Describe your strengths that you bring to your students' learning.
5. Describe your challenges that you bring to your students' learning.
6. Describe your involvement in the teacher evaluation process?

7. What are the perceived needs you have that would enable you to enter and remain teaching TEE?
8. Are you involved in any type of a structured induction program (comprehensive system of training and support that is coherent and sustainable)?
9. What kind of support do you need moving forward?
10. Are you satisfied with your decision to teach TEE?

Interview Questions for Principals

1. What resources for standards based instruction do you provide for your EBL teacher?
2. Please describe TEE content knowledge strengths that your EBL teacher demonstrates.
3. Please describe TEE content knowledge challenges that your EBL teacher faces.
4. What mentoring resources of support do you provide in your district for your EBL teacher?
5. Describe the method of selecting the mentor.
6. What strategies of support do you provide regarding teacher evaluation for your EBL teacher?
7. How is the feedback from teacher evaluation used to determine future professional growth needs?
8. What professional development strategies do you access to provide opportunities for growth for your EBL teacher?
9. What collaboration strategies are available for your EBL teacher?
10. Describe the induction system (comprehensive system of training and support that is coherent and sustainable) your district provides for new teachers.
11. What professional development strategies have been implemented to assist the EBL teacher with certification during the three year qualification period?

Major Findings

This study gathered perceptions from instructors and administrators utilizing mixed methods. The conclusions of this study represent a combination of those methods as they speak to the research questions. The major themes that emerged from the research were: (1) EBL teachers' skills were content strong with teaching methodology challenging; (2) EBL teachers had difficulty transitioning into classroom and instruction; (3) administrators' and EBL teachers' understanding of mentoring were very different; (4) there was a negative perception of experienced based licensure teachers, administrators' understanding of EBL teacher needs and how to provide support; (5) EBL teachers' love of teaching that was unanimous among EBL teacher participants.

Recommendations

Recommendations were based on the data collected and the conclusions as they related to each of the research questions. Specific topics relate to developing appropriate mentoring structures, identification of specific immediate

needs of the instructor, a system of accountability that allows communication and support between the mentoring structure, and a process to define what effective collaboration is. Mentoring systems that are in place in districts for traditionally trained educators need to be adjusted to the specific needs of EBL teachers. This collaboration should include a plan that coincides with the plan committed to by the district, the educator, and the licensing department. An understanding of the needs of a Technology and Engineering EBL instructor is different than other disciplines in regards to physical exertion, supply inventory, equipment maintenance, facility, general safety instruction, and professional development responsibilities.

Administrators were united in understanding that the procedures used for induction may need to be modified to respond to the structure and the pace of the new EBL hire. For example, modify and adapt induction and mentoring programs to meet specific needs of EBL instructor, and develop a prioritizing strategy with the EBL instructors from the start that is realistic and obtainable.

Supervision and observations need to be more often and less formal. This function should be shared by a team of supporters, not just administration. Different targets should be established to assist specific pedagogical needs that may be different from a normal educator effectiveness evaluation process. Guided clinical observation is a component that is absent from the training of an EBL. Practicing and developing these strategies can be another resource to address communication and encouragement.

Re-evaluation of training and preparing mentors in induction systems is necessary. Intentions to improve new hire success is evident and included in most district plans. Monitoring effectiveness and establishing an understanding of the process and its assistance to the EBL instructor may reveal different results as compared to when the system is used for teachers that come from teacher training systems. Waiting to assign permanent mentors may be a procedure that allows the EBL instructor to settle in and assist in determining what the prioritized needs are to be addressed in a timely matter.

Many administrators reflected that this is new to everyone. The need to have teachers fill vacancies is crucial and so too is it to understand how to manage the systems of support. There was agreement that being patient with evaluation cycles for EBL instructors was a good strategy for the instructors and the administration. By combining the first two years of introduction into the evaluation system, the instructor and the administrator could develop focus and understanding on specific skills and needs that needed to be addressed to move the EBL instructor forward in their learning and teaching strategies.

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Further research

It is important to reflect that this study utilized a small sample size that participated in a professional manner. Findings and conclusions were not inclusive of all EBL teachers in the state of Wisconsin but represent major themes and statements that EBL teachers may make. A larger study would verify this. Further research should be focused on the attrition rate of EBL instructors, how they are perceived by their teaching peers, and what the needs of newly-hired EBL instructors are compared to an EBL instructor that has been teaching for a longer period of time. EBL's expertise in a content area was identified as a strength but this research did not inquire as to how EBL instructors were being effectively teaching in content areas outside of their experience and expertise. It is necessary to research the effects of the EBL teaching pathway on student learning and students' skill development leading to employment.

There was dissatisfaction discussed in regards to certification Praxis tests and other licensing issues regarding EBL and #1220 licenses. Further research is needed to clarify the legislation that is proposed regarding teacher-licensure tests and what impact it will have on teacher shortage issues. The literature pointed to the fact that EBL pathways are a route that allows instructors to get paid while learning how to teach and this resulted in saving money as EBL teachers do not have the expenses incurred from participating in four-year teacher preparation

programs. Further research on the assets and challenges related to this pathway need to be explored. The process that has been adopted for the three year EBL certification process needs to be revisited and evaluated as a measurable entity. Are the programs being defined by the local districts providing the appropriate training and pedagogy for EBL instructors to enter and remain in TEE?

Conclusion

The research for this project was completed after many years of experience and development. The researcher was involved with the legislative process to block ACT 259. After the ACT was passed, there was a discussion held at the WTEA Board table. The question, was "now what are we going to do?" After much contemplation and discussion, the answer was, we have to support and assist. That is what we do. That discussion fueled the passion and impetus for this study. I would like to include my sincere gratitude for my thesis advisor Sylvia Tiala, PhD., UW-Stout. Her devotion to me, the WTEA Board, and to the profession has inspired me to always try harder and demonstrate that if we show our commitment and support to the members of our teaching ranks, that the students and our communities will continue to strive.

Further investigation into this research project can be obtained by contacting Mr. Pete McConnell from the WTEA board. Any assistance that I can provide for these inquiries as well as specific districts and individual teachers needs can be communicated as well.

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Welcome Back Kevin Miller

Former DPI Technology Education Consultant and Wisconsin VICA State Director Kevin Miller has returned to the same position, though now it's Technology and Engineering Education and SkillsUSA. After Brent Kindred left this position in the Spring of 2020, DPI was unable to fill the position permanently, so asked Kevin to come on as an LTE, and he agreed.

After leaving the position in 2000, Kevin served as a middle and high school principal and Director of Career and Technical Education. He also served as the Dual Enrollment Consultant at DPI from 2011 to 2017 before leaving to start his own consulting business and write a book on education reform. That book, **Know Power, Know Responsibility**,



was published in 2019 and lays out the numerous shortcomings of our current school model and how we can implement a new model in any community.

About coming back to DPI as the TEE Consultant, Kevin said, "It's great to be back among many old friends and a lot of new, energetic teachers. I'm really glad to help out DPI, SkillsUSA, and the TEE field and look forward to working with such a great group of professionals."

Kevin is serving as a Limited Term Employee through Spring or Summer 2021 when DPI hopes to fill the position permanently. He can be reached at 608-264-6708 or kevin.miller@dpi.wi.gov.

ITEEA Virtual Conference 2021

By Mason Pautsch, ITEEA Representative

The 83rd annual ITEEA conference that was originally planned to be held in Denver, Colorado will now be held virtually March 22-27, 2021. This is a great opportunity to collaborate with other Technology and Engineering Education teachers from all over the world from the comfort of your own home, classroom or office! Just like

our conference, ITEEA will be hosting live or recorded sessions for your convenience. With the conference being 100% virtual, registration fees and ease of access to attend the conference have never been better! Visit www.iteea.org for more information about registration fees, breakout session offerings and all other conference information.

Jeff Dowd Automotive Scholarship



The family of Jeff Dowd along with the Wisconsin Technology Education Association and the WTEA Foundation have established a \$6800 scholarship to be awarded to a graduating senior from the automotive program at Park High School. The student selected must be enrolling at Gateway in the au-

tomotive associate degree program upon graduating from

high school. The award is for \$3400 each year of the two year degree. Scholarship funds are administered by the Gateway Technical College Foundation. Jeff Dowd was a good friend to each of us and this gift serves as a legacy of his commitment to the youth of Racine Unified School District.





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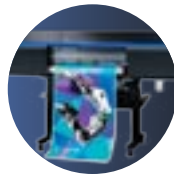
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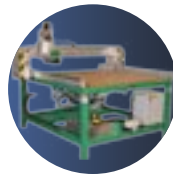
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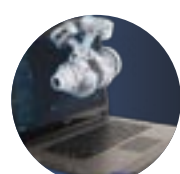
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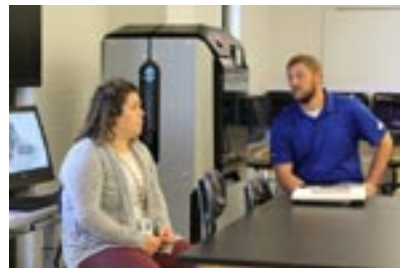
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Dodgeland High School - A Rural School Investing in Tomorrow

By Anna Vitale, Dodgeland High School

The Dodgeland School District is located in Juneau, in the center of Dodge County (northeast of Madison) and comprises a K-12 campus, with elementary, middle and high school wings and a total student enrollment of 734.

CTE begins in elementary school with the PLTW Launch Program and continues through middle school with the Gateway Program (Design and Modeling, Automation and Robotics and Computer Science for Innovators and Makers). Plans for expanding PLTW courses to the high school, beginning with Principles of Engineering for the 2021-22 school year, are in play.

The High School Technology Education Department has two teachers and the courses offered include: Welding, Woods, Basic Electronics, Basic Electricity, Dodgeland Manufacturing, Problem Solving Through Discovery, Cross Media Graphics, Digital Photography, Basic Home and Auto Maintenance and Residential Construction.

New Construction - Technology Education Classrooms, Lab Additions and Renovations

Ten to fifteen years ago, not many school districts may have been able to say "Our referendum passed!" but with the emphasis on the increasing need for a skilled workforce, the results of referendums have been happily successful for many of our Wisconsin school districts.

How is this reflected in the Dodgeland School District? The residents and stakeholders in the rural Dodgeland School District also realize the need to invest in their students' futures and followed through on that belief in the Spring of 2020 in resounding favor of a 17 million dollar referendum. This vote affirms the community's trust in our district - both today and into our future.



#WeAreDodgeland

Design planning began immediately and the technology education team has paid close attention to details of the new building, after valuable feedback from local districts who have also gone through a renovation and new building process.



DHS SkillsUSA Chapter - A 3 Year Old Takes Off Running

Originating in January of 2017, the DHS SkillsUSA Chapter has earned recognition every year in the Chapter of Excellence program, reaching Gold Level two of the three years. In both 2018 and 2019, a Dodgeland student won first place at State and competed at Nationals. We have competed at District, Regional and State levels all three years, and walked away from each competition with students bringing home 1st, 2nd and 3rd place medals.

Why is this significant? In small rural schools, students may not have many opportunities to experience the exhilarating feeling of standing on a stage and receiving a medal. For students to walk away from a competition, placing in the top three of technical and skilled trade competitions, where students do not always feel confident in their skills, makes the Dodgeland SkillsUSA Chapter success even more notable.



Surviving and Recovering From the 2020-21 School Year

By Kevin Miller, DPI Representative

That which does not kill us makes us stronger, right? Sometimes, but often not. Of course, first we have to survive or there's no chance of getting stronger. Once we're past the danger, then we have to recover to see if, eventually, we did come out better (stronger) for the experience.

As we approach one full year into the COVID 19 crisis, let's consider how to survive the rest of this school year and recover to be ready to go next year.

First, ask professional colleagues for help. Realizing you're not struggling alone can provide hope. In addition, you may find others who have developed solutions to the challenges you're facing. The TEE listserv has been filled with teachers sharing challenges and other teachers sharing ideas to overcome them. If you're not on the listserv, contact me at kevin.miller@dpi.wi.gov to be added.

Probably the greatest challenge facing teachers in virtual and hybrid schools is getting students engaged and actually learning. The only people who really know how to fix this are the ones we rarely seem to ask.

So, ask your students to help figure it out. Right now, many of you feel responsible for getting your students to be engaged and to learn, yet your only tool for doing this is negotiating. You have to offer them enough entertainment or a compelling reward so they'll engage in lessons and hopefully learn something. Or there may be some negative consequence hanging over their head if they aren't engaged and completing assignments.

If, instead, students were committed to being engaged and learning, you would be relieved of that responsibility. Then, you could become a resource for them striving to achieve their own goals. You wouldn't need to negotiate for their attention and effort because you would be collaborating on the same outcomes.

The trick is to ask your students how to achieve this. That means being completely honest with them. Acknowledge what they already know - this whole virtual/hybrid thing is as new to you as it is to them and you need help figuring out how to best help them learn. Explain that you don't just want to deliver instruction, you want them to get real value out of your classes.

Then ask them to join you in developing a solid plan for every student to achieve their own identified learning outcomes (that you can help them develop). Be open to some flexibility in how that is done to account for the numerous unique circumstances faced by your students. This is especially important relative to technology and networking challenges and students facing other home and family difficulties. When some idea seems unworkable, tell the students that and ask them to adapt it or find an alternative.

Involving the students in this way creates buy-in and commitment. The students take ownership of their own learning and help each other achieve their objectives. They then view you as a valuable expert and resource rather than just another obstacle in their getting done with their classes for the day.

Involve parents and guardians in new ways. Typically, parents' role in their children's education has been ensuring they attend school and complete their assignments. With virtual and hybrid schooling, this is still largely their only role, but it is often much more challenging now. You can help parents, students, and yourself by defining a different and more critical role for parents.

Ask parents to partner with their children on developing learning goals. Ask them to have conversations with their children about their future goals and what they hope to get out of your classes. Encourage them to let the children take the lead and to serve as "consultants" who ask questions to draw out the children's thoughts, feelings, and ideas and offer advice when asked.

Involving parents this way allows them a much more meaningful role in their children's education and gives them buy-in and commitment. It also helps them see other ways they can support their children and you as the instructor and learning facilitator. It also helps relieve them of having to constantly monitor and nag their children as their children become committed to their own success.

Ask your administrators to support your collaboration with students and parents. Nearly every school and district with primarily virtual or hybrid school is struggling with student engagement. They have students unable to connect to classes, missing from classes, falling behind on assignments, or connecting to classes but entirely disengaged from the instruction and activities.



Check out the WTEA website
wtea-wis.org

Discuss these ideas with your administrators as a means to engage all students but especially to draw in those who are struggling. Ask them for flexibility on some requirements for “attendance” and submitting assignments in exchange for students achieving learning objectives.

Desperate times and all. These ideas may seem sort of out there, but consider this: Nearly all schools and classes, right now, are dependent on offering promised rewards (e.g. good grades, honors, privileges) or threatened punishments (e.g. bad grades, loss of privileges, remedial classes) in exchange for student engagement.

Schools and teachers (along with parents) negotiate with students so they can deliver instruction with minimal distractions and hope some worthwhile learning occurs. The alternative is having students take charge of their own

engagement and learning and having a personal stake in fulfilling the expectations.

There will be a learning curve for all parties involved and some bumps along the way, but it will provide incredible rewards in the long-term and, because everyone is pulling together toward a common outcome, there is a sense of comradery and much less stress than the current approach.

Taking this approach can help everyone survive the second half of the school year and, with the commitment and buy-in of students, may even allow some lost ground to be made up. In addition, it can lay the foundation for taking this approach once classes return to some semblance of normal, leading to improved outcomes in the future. In other words, maybe you can come back even stronger after this ordeal.

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Meet the Artist

Howard Roloff has created the various covers of the Interface for the past twenty years. His artistic ability has given us eye-catching and interesting designs that reflect our theme for each year. Typically the WTEA Board of Directors at the Fall Board meeting decides on a theme for the year following the upcoming conference. Howard works with that theme and provides us with a cover design as well as other graphics to use in promoting our annual conference. His new design is then first published as a cover on the Spring issue of Interface.

Shown below are the many covers he has created for us over the past twenty years. Several of these designs have also been used in promoting our conference. He has also created logos for our association along with banner designs used on trade show contracts and other promotional forms and literature.

The following is some information about Howard's teaching career.

- Graduated from UW-Whitewater with BSE in Art Education in 1982 and a Master of Science in 2007.
- High school Art teacher for Stoughton Area School District for 35 years.
- High School Art Department Chair 20 years.
- Strategic Planning Leader 7 years.
- 30 years of Coaching - Football, Basketball, Tennis and Softball.
- Retired from teaching in 2017.
- Freelance Graphic Designer/Artist since 1995.
- First cover for WTEA 2001.

Howard and his family live in Stoughton where he grew up and attended the Stoughton schools. He continues to enjoy designing graphic images and has found the computer to be an important tool of his trade.





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