



HOW WE REOPENED OUR WELDING SCHOOL DURING THE COVID-19 PANDEMIC

By Jason Scales, Ph.D. - *Lincoln Electric Education Business Manager*

As the nation begins to chart a path forward to combat the economic downturn caused by the COVID-19 pandemic, one thing is clear – the education sector will play a major role in its recovery.

Because welders are critical to many industries, educators should research and consider what steps they can take for a return to in-person welding training in the safest way possible. Since there is also a serious welder shortage, it is even more essential for welding training programs to develop a plan for resuming their activities. While the challenges that lie before us may seem overwhelming, we believe that by working together, we can successfully navigate through this crisis.

As a publicly held company with the world-class Welding Technology & Training Center (WTTTC) located in Cleveland, Ohio, U.S.A., Lincoln Electric was fortunate to be one of the first welding schools in the nation to welcome back students on May 18.

Because it is our mission to develop and advance welding education across the globe, in this paper we will share key insights from our experience reopening under COVID-19, such as:

- Policies and procedures we implemented to prioritize the safety of all students, staff and visitors.
- How we prepared the WTTTC, a 130,000-square-foot facility dedicated to training educators, industry leaders and skilled trade workers in the craft and science of welding.
- Modifications to instructional practices and teaching strategies to adhere to safety measures and social distancing guidelines.

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POLICIES WE ENACTED

As Ohio's "Safe at Home" order was lifted and more coronavirus restrictions were made voluntary, Lincoln Electric's Welding Technology & Training Center met to develop a set of policies to resume in-person welding education at the Welding Technology & Training Center. Working closely with school administration, environmental health and safety and legal counsel, several documents were produced outlining procedures for our key stakeholders – school leadership, instructors, students, other building occupants and support personnel.

In drafting these policies, we reviewed guidelines from the [Centers for Disease Control and Prevention](#), the [World Health Organization](#) and other best practices recommended by national, state and local leaders.

Protocols and Procedures We Established



Self-assessment for students, staff and all visitors to the WTTC with questions regarding symptoms and contact tracing.



Required nose-to-chin facial coverings at all times [except when alone in a welding booth or enclosed space] for all building occupants.



Eliminated lunchroom seating, restricting students to eat at own desks to minimize points of contact.



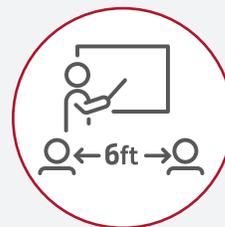
Reporting and self-isolation protocols for students and employees who become ill or notice COVID-19 symptoms (not to return until 14 days symptom free).



Mandatory temperature screenings at the main entrance to the WTTC.



Cleaning and sanitation schedules.



Reduction in class sizes/ staggered schedules.



Monitoring and action steps to address reports of infection for epidemic containment.

WELDING SAFETY REFRESHERS WE TAUGHT

In addition to hygiene-related safety measures, we also realized there was a need for students and staff to brush up on some of the fundamental rules of welding safety. Having been away from school for two months, we made sure to revisit the basics, such as:

✓ Safe Work Practices/Hazard Prevention

✓ Shop Warning Labels

✓ Personal Protective Equipment

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SUPPLIES WE ORDERED

Forecasting increased demand for antibacterial soap, hand sanitizer, disinfectant sprays and paper products, we pre-ordered these essential supplies. Since these products are vital to killing bacteria and preventing the spread of COVID-19, we wanted to make sure we had enough inventory to last through the summer with additional supplies scheduled to be delivered prior to fall. Several providers informed us their products were on back-order or required lead times in excess of 30 days, so ordering as far ahead in advance is critical.

We also ordered additional facial masks and facial coverings for workers, as well as gloves for our cleaning crew and staff in charge of in-take and temperature monitoring.



SIGNAGE WE INSTALLED

Understanding the need to keep at least six feet of separation between individuals, we concluded we had to provide signage at many points of interest throughout the building to remind students and staff to maintain the appropriate distance. One of the big takeaways we learned is that it isn't a quick and easy process. Identifying these points of interest, installing stickers on floors and cordoning off thoroughfares with stanchions can take longer than you think. So make sure to plan accordingly. Other measures we took included signs for:

- Notifying one person at a time to use elevators
- Where to stand when using microwaves in the lunchroom
- Proper hand-washing procedures

We also restricted stairwells, doors and certain hallways to one-way traffic and temporarily closed locker rooms, some drinking fountains and urinals.

CLEANING PRACTICES WE IMPLEMENTED

We reviewed cleaning practices and established new procedures to increase the frequency of cleaning and disinfecting surfaces. We are wiping down desks, workstations, seats, welding booths, and other surfaces such as doors, door knobs and kiosks at least daily or more, depending on use patterns. We also addressed procedures for discarding tissues and paper towels into closed trash cans and provided details for staff on how to safely empty the trash to further limit exposure.



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INSTRUCTIONAL PRACTICES WE ADOPTED

One of the unfortunate things we realized reopening under COVID-19 was that our instructors could no longer work hands-on with our students. To make up for this, instructors are utilizing more technology in the classroom to overcome these new instructional challenges in a major way.

Now, a larger portion of class time is devoted to talking about strengths and weaknesses as a group and putting the [VRTEX® virtual reality welding trainer](#) to use. The VRTEX serves many functions including skill development, teaching and learning, and the ability to diagnose student challenges. However, it can also serve as a valuable tool for demonstrations the whole class can benefit from and safely participate in when social distancing measures must be followed.

While we still provide live demonstrations, social distancing protocols require only two-students to view them at a time. With VRTEX, instructors can display a live video feed as a student is welding virtually. With the ability to playback and pause video of the weld, the instructor can also focus on a specific area of the weld and provide immediate feedback for improvement.

In the welding booth, the tracking software that comes with the [Power Wave®](#) power source helps us monitor student progress

HOW WE ARE MONITORING CHANGES

As schools contemplate reopening during the COVID-19 pandemic, it is a good idea to plan as early as possible. It is also highly recommended to communicate those plans with your instructors, students and their families in advance. We have found in this environment that you can't overcommunicate. Using email, phone calls, text and instant messaging to provide students with as much detail on how their regular routine may be disrupted can go a long way to alleviating anxiety and other concerns. School leaders should also make plans for a first-day orientation to go over these changes and work toward encouraging an environment of mutual trust and openness for accurate reporting of COVID-19 symptoms and absenteeism.

It is important to note when planning for reopening that schools

while maintaining the required six feet of separation. The software, called [CheckPoint®](#), gives instructors the ability to verify whether the student has set up their machine correctly and provides metrics on other parameters, such as arc time, voltage, material consumption and more.

During normal operations, our class sizes average 20 students. Reopening under local guidelines, we restructured how we cycle students in and out of the classroom and welding booth to keep class sizes to a minimum wherever possible. Desks have been spaced appropriately to maintain social distancing guidelines and we have blocked off every other welding booth to maintain this standard.

We have also taken the pro-active step to work on developing remote learning activities that can be used to keep students engaged and their welding knowledge and skills sharp, should they have to self-isolate or study from home. This includes the use of videos and e-learning courses.

We understand other welding programs may not have the same resources and may have other needs and requirements as well. This is why we're looking into other solutions, such as how to best clean and disinfect PPE equipment and how Powered Air-Purifying Respirators might be used to provide an additional layer of protection for instructors.

should consider that these changes may need to stay in place for some time and possibly through the 2021-22 school year.

No one knows what's going to happen in the next three months – let alone the next three days. One thing will be certain: safety is our number one concern.

We're going to be diligent about our new safety and health protocols and pay attention to what needs to be done to provide the best possible educational welding program by using any means necessary. We encourage you to visit education.lincolnelectric.com/covid-19-reopening for more related insights, helpful checklists and webinars on this topic and to partner with us as we work toward finding more solutions and better ways to deliver a world-class welding education.



ABOUT THE AUTHOR

Jason Scales, Ph.D., is the Business Manager for Lincoln Electric's Education products and services. His background includes teaching as a former welding instructor, high school agriculture teacher and college professor. In his current role, Scales oversees Lincoln Electric's Welding Technology & Training Center in Euclid, Ohio, and the development of advanced training products, curriculum books, technical documents and specialized training programs for customers and welding education groups.

ABOUT LINCOLN ELECTRIC

Lincoln Electric is the world leader in the design, development and manufacture of arc welding products, robotic arc welding systems, plasma and oxy-fuel cutting equipment and has a leading global position in the brazing and soldering alloys market. Headquartered in Cleveland, Ohio, Lincoln has 60 manufacturing locations, including operations and joint ventures in 19 countries and a worldwide network of distributors and sales offices covering more than 160 countries. For more information about Lincoln Electric and its products and services, visit the Company's website at <https://www.lincolnelectric.com>.