



Teaching Critical Thinking Using Transportation, Distribution, and Logistics Curriculum

My name is Ben Brachle and I have been teaching in the Transportation, Distribution, and Logistics (TDL) arena now for most of my professional teaching career. After completing a Bachelor of Science in Industrial Distribution at the University of Nebraska at Kearney, I started my career working as a Territory Manager for a multinational industrial tool manufacturer. After what now seems like a short stint working in industry, the occurrence of some major life events caused me to change course. After some convincing by a couple family friends, I decided to leave B to B sales and to enter the world of education. Although technical sales and distribution was a big part of my life, I was convinced that settling into a career in education would mean stepping back from the industry. But my plans were foiled when some unique circumstances caused a few of my colleagues and I to pursue the idea of **starting a program dedicated to the Transportation, Distribution, and Logistics Career Cluster**. The demand for programs like this was higher than we expected as the industry was very enthusiastic and supportive of the idea. It seemed like this excitement almost overnight gave birth to a high school program dedicated solely to Transportation Distribution and Logistic Careers. What we were doing in our small corner of Career and Technical Education was seen by the local industry and higher education leaders as something that was ground breaking.

Once the program was developed and gained some steam in the local community, enrollment increased and our efforts caught the attention of others who were doing similar activities in other areas of the country. Soon, our network expanded and we joined with the nationwide effort to build educational opportunities for students to be introduced to this high demand, high wage industry. The momentum continued to grow as we began to see more and more middle and secondary educational institutions across the country show interest in TDL focused programs. This momentum gave me the opportunity

to work with multiple school districts and help them develop classes and programs dedicated to teaching students about TDL and the skills needed to be successful in the industry.

Unfortunately, the newness of these programs caused some unique challenges. First and foremost, the movement's infancy made it extremely challenging to find a text book or curriculum in this arena that is appropriate for middle school and high school students. The need for quality instruction and curriculum to introduce students to a segment of the economy that is estimated by some to be as big as a 4 trillion

Introduction to Transportation Careers Course

A 136 hour course designed for 9th and 10th grade students which can be taught in part or whole by customizing the amount of material to be delivered based on the needs of the school. transportationcareers.org

dollar industry was very apparent. Early in my career as a TDL instructor, this was one of my greatest challenges. Enter the work of Fran Beauman and the development of Transportationcareers.org. I was introduced to Fran early in my career and because of our common interest in obtaining such a resource, I decided to help her in the quest to build a resource that would help fill that void. Because of her efforts and the efforts of the TDL instructor network she has built over the past few years, Transportationcareers.org has grown to include over 500 quality lesson plans that firmly fit into the TDL Career Cluster. It also offers a 180 hour TDL introductory course designed for 9th and 10th grade students. The curriculum is set up to be taught in full or customized to meet the needs of individual schools and programs. As one of the teachers who helped develop the course, I can say that I wished it was available early in my career as it would have saved me many long hours of exploration and curriculum development.





As an instructor, it is always important to teach critical thinking skills. This seems to be one of the most valuable skills that seem to be absent from many classrooms

these days. I dare say that this missing requirement is not just commanded by teachers of their students. ***It is actually the future employers of these students that demand they have the capacity to objectively analyze and evaluate the many problems they will face and then be able to create a sound and rigorous solution to the particular challenge.*** Critical thinking is not only crucial to the employability of these students, but I think we can all agree it can pay dividends for our students their entire life! It is for these reasons that developing critical thinking skills was a very large consideration in the creation of this curriculum.

As a territory manager who was in charge of a \$5.6M territory, using critical thinking to come up with solutions was something demanded of me regularly. Later as a high school teacher, I appreciated when this was embedded into a lesson. One such way is to give students a problem, allow them time to take the requirements of the problem and then come up with a solution. This is basic cognition. In the warehouse layout design lesson, students are introduced to material handling and warehousing through a design project. Students learn the fundamentals of warehouse layouts and OSHA requirements for warehouses by designing the floor plan and calculating the cost to outfit a warehouse area. This requires the students to research and analyze the different types of racks and material handling equipment, evaluate the different areas needed in a warehouse space, create a solution/design and then calculate the total cost of the project. Students learn about various constraints like having space for the pallets to “hang over” the front and back racking beams. They learn about usable space in the facility as well as the types of material handling equipment (fork trucks) and the limitations of each. Consideration must also be taken when looking at warehouse flow and the different staging areas needed for effective movement of product. The deliverable is a design and “bid”

that will be given to the potential buyer. This also creates a competitive environment that really adds to the educational process. I have seen it first hand; students really enjoy competing for the business!

Now as a faculty member and program coordinator for a technical sales and distribution focused program at a mid-sized Midwestern University, I still find myself using a very similar lesson as I did in my past secondary teaching assignments. Being that my students are recruited by material handling companies for inside and outside technical sales positions, this type of critical thinking activity works well in the curriculum. The basics are the same as I used in my high school classroom. To kick it up a notch, I enlist the help from one of the material handling distributors from within the industry to help conduct the lesson. The company will provide CAD drawings and a scenario that will be given to the student teams. Many times these scenarios are very similar to ones the company reps have encountered in the industry. Students will then be given the drawings and scenario and are required to come up with a design and overall bid for their solution. The students will then be required to give a sales presentation of their solution to the company representatives who act as the customers in the scenario. During the sales presentations, students are required to defend their solutions and answer what sometimes are hard questions. This is invaluable training that sharpens their critical thinking skills and provides them practice in combating objections. The assignment ends with one team winning the bid and multiple teams being left out. The competitive nature of it produces an environment that helps the students strive to do their best work.

This TDL career pathway is a very important part of the US and global economy. From manufacturing to distribution to retail, the TDL industry is all around us while many times going unnoticed. I like to say that it is “hidden in plain sight.” By utilizing the lessons on transportationcareers.org, teachers in any program (not just TDL focused programs) can expose students to this multi-trillion dollar industry while teaching them the critical thinking skills needed for their future careers and life in general. ■

Transportationcareers.org

A teaching resource with lesson plans and associated resources.

