

Industrial Distribution Simulation Laboratory: Teaching Wholesale Distribution Skills through Experiential Learning

James L. Toppen, Ph.D., Richard A. Meznarich, Ph.D.

University of Nebraska at Kearney

toppenjl@unk.edu

meznarichra@unk.edu

Abstract

Teaching wholesale industrial distribution applications can be very challenging and it is difficult for students to understand the business world they are preparing for if real world examples are not used. The Industrial Distribution program at the University of Nebraska at Kearney has designed and built an Industrial Distribution Simulation Laboratory to teach students the concepts involved in technical sales and industrial distribution wholesale branch operations utilizing role plays to simulate real world experiences. This paper provides detailed examples of experiential learning practices used within the Industrial Distribution program.

Introduction

Recent years have shown an increasing interest in employing active experiential learning techniques, such as role play, in the college classroom. Faculty recognize that student learners gain more knowledge and insight through action than they do in lecture settings. Faculty are also increasingly more aware of differences in learning styles and the importance of using a variety of instructional techniques to address as many of these learning styles as possible. For example, David A. Kolb, who defined learning as the process whereby knowledge is created through transformation of experience, proposed four learning styles in 1984. According to Kolb's model, the ideal learning process engages four learning styles, Converger, Diverger, Assimilator and Accommodator styles in response to situational demands. The resulting learning styles are combinations of the individual's preferred approaches [1].

Convergers are characterized by abstract conceptualization and active experimentation. They are good at making practical applications of ideas and using deductive reasoning to solve problems. One of the main roles of the technical sales representative is to identify appropriate applications to solve a customer's particular problem.

Divergers on the other hand tend toward concrete experience and reflective observation. They are imaginative and are good at coming up with ideas and seeing things from a different perspective. This skill set is especially important for students entering the field of wholesale distribution where the "value" they bring to the table in the sales process is

problem solving. Being imaginative and creative can be very difficult for a new graduate just entering the field. This is reflected in the program's annual assessment surveys of employers.

Assimilators are characterized by abstract conceptualization and reflective observation. They are capable of creating theoretical models by means of inductive reasoning. Accommodators use concrete experience and active experimentation. They are good at actively engaging with the world and actually doing things instead of merely reading about and studying them. Technical sales representatives in the wholesale distribution industry get paid not for what they read about, but for what they produce.

These learning styles are also referred to in the literature with names such as role play, social drama or social theater. Students in technical areas often find it easier to learn and retain information with hands-on activities. Role play techniques allow students to apply concepts and problems that have been introduced through lectures and readings to a situation that reflects reality. As students are more directly active in the role play it is more effective in embedding concepts into their long term memory [2]. Role play also introduces concepts that are important in professional sales positions such as understanding how knowledge is developed and produced, in particular the use of language and how language constructs knowledge, logic and prominence of voice. Students learn to communicate knowledge in a meaningful and persuasive manner, so important during a technical sales call where language skills, leading to effective communication and negotiation skills, are of paramount importance [3].

Role play also illuminates the divisions and differences between individuals in the sales process. Role play in the classroom demonstrates effectively that the salesperson and the customer use different information sources and often hold distinct, if not conflicting views, but that resolutions can be reached. Students learn to work with differing personalities, beliefs, value systems, abilities and background experiences. They develop a greater appreciation of the range of perspectives held on a particular issue and come to recognize the complexity of the sales and negotiation process and their own role in the process. Simulations are widely used for learning how to negotiate, and professional negotiators have shown to benefit from role play simulations [4]. Students need to realize that they may not have all the answers, and there may be no easy answer, but see the critical issues necessary to solve the customer's problems through the sales process [5].

In one of his last books, Jean Piaget, the great developmental psychologist, describes knowledge development as a process of equilibration between assimilation and accommodation learning styles. In assimilation, people figuratively fill-in their mental map of their world, while in accommodation, they figuratively change that mental map span or alter it to fit their new perceptions [6]. Rote memorization tends to emphasize assimilation. In contrast, learning to climb a tree, swim, or riding a bicycle emphasizes accommodation and involves gaining a "knack" and tends to be the kind of learning that is almost impossible to fully forget. Assimilation learning, as has been well documented, is remarkably easy to forget.

There are several benefits to ensuring that students receive real world experience in business processes, current technology, and supervision while pursuing a degree in their chosen field of study. One benefit of gaining real world experience is students become more prepared to handle business problems and opportunities [7]. Another benefit realized from real world experience is that students get the opportunity to experience their future work environment before graduation. As Fedorowicz, Gelinas, Usoff and Hachey point out, it is especially difficult for a newly minted graduate to grasp more complex inter-organizational technical sales and information flow if the graduate was not exposed to actual business processes and experiences in their education [8].

Given the apparent success of utilizing role play pedagogy in the classroom, one may ask the question, “Why wouldn't everyone use role play as an instructional strategy if it is such an effective method of teaching?” There are several reasons for this. Many college professors, although they are well versed in the theoretical information, may not have had opportunities to work in the real world. This can make it very difficult for some to create real world role-plays. If the professor has real world work experience, they can more easily and effectively create these role plays. To overcome this problem, one could involve people from industrial advisory boards, or just local people, in that particular business to assist in the creation of realistic role plays.

Evaluation is a problem facing many professors utilizing role plays in their courses. The evaluation process is very subjective. As students observe the role plays of others, they naturally improve. The first students almost always perform much worse than the students who perform their role plays at the end of the exercise. The real goals of having students observe other student's role plays are to have them learn from others mistakes. This results in a much higher level of learning for all students. Another problem is trying to create real world environments in an academic setting. This is why the Industrial Distribution Simulation Laboratory was created. The laboratory provides the real world setting that assists in making the role plays realistic.

The Industrial Distribution Simulation Laboratory

The prime reason the University of Nebraska at Kearney created the Industrial Distribution Simulation Laboratory for its undergraduate degree program in Industrial Distribution was to ensure students are gaining real world experience in technical sales, current warehouse operations technology and supervision techniques. The laboratory environment replicates an actual industrial distribution branch having a city counter along with a completely stocked showroom (410 sq.ft.), sales simulation offices with inside and outside sales desks (170 sq.ft.) and a branch manager's office (145 sq.ft.). The laboratory has its own internal phone system enabling students to practice their phone and customer service skills. The laboratory also has a completely stocked warehouse (2,100 sq.ft.) complete with various types of racking systems including a mezzanine and conveyor system. Also included in the design are a secure storage area (80 sq.ft.) and an adjacent training room (2,160 sq.ft.) that is also used for industry training.

Students utilize a variety of material handling equipment, bar code readers, and a work assisted vehicle and forklift to manipulate stock. They perform structured and detailed role play simulations in picking, packing, shipping, receiving and inventory control. Once an item is shipped from the warehouse, the item is purchased back by the Purchasing for Wholesale Distribution class. Activant's Prophet 21 is the Enterprise Resource Planning (ERP) system used to manage the sales and operations functions within the laboratory. The simulation laboratory is used throughout the industrial distribution core cores for preparing students to enter the workforce as technical sales representatives in the wholesale distribution industry.

Laboratory Simulations: Student Role Play Activities

One of the most difficult things to do in preparing students for future employment is helping the student understand the environment they will be working in upon graduation. Students do not get exposed to the actual wholesale distribution environment until they begin their internship, typically between their junior and senior year. The ID faculty and staff wanted students to experience the work environment early for two reasons. First, to help students better understand the work environment they would be spending the rest of their working life in, and second, to enhance the student's internship experience.

The Industrial Distribution Simulation Laboratory allows students to simulate real world tasks in the operation of an industrial wholesale distribution branch. Each assignment includes a discussion of the concepts, required deliverables, objectives, safety procedures, and step-by-step procedures to complete.

In order to ensure success of each laboratory activity, students are divided into groups and assigned different roles for laboratory activities. These activities, created by the faculty and staff of the ID program, require students to rotate through the following roles in the laboratory, thereby exposing them to all facets of an industrial distributorship and the tasks involved in each role. For example:

- Outside Sales
- Inside Sales
- City Counter Sales
- Warehouse Manager
- Warehouse Supervisor
- Order Picker
- Shipping and Receiving

One of the best compliments the ID program receives is when companies come into the laboratory and comment, *"This is exactly what we do"* or *"If I had this training, I would have been years ahead in my career."*

Sales Simulations

Sales simulation role plays begin with counter sales and showroom management, the typical entry level position in the industrial wholesale distribution industry. Students need to learn how to use the ERP system to look up product and problem solve customer

needs as well as create customer orders. First-hand experience operating an ERP system places students well ahead of their competition upon graduation [9].

The counter sales person has to be able to operate in a fast-paced environment and handle customers both on the phone and in person as shown in Figures 1 and 2. The role plays are designed so that students get experiences in both of these areas including the use of the ERP system to create an accurate purchase order for the customer. These role plays will help them understand how difficult this process is in a pressure induced wholesale environment when many normal, although hectic at times, daily activities may be competing for their attention [10].



Figure 1: City Counter Phone Role-plays

Figure 2: City Counter Customer Service

Almost every industrial distributor branch has a showroom. The showroom is generally managed by the counter sales people and the branch manager. The showroom management role plays are designed to identify items that would be useful in a showroom environment. Students are required to set up the showroom, Figure 3, so that most purchased items are first displayed. They also need to do research on items that customers most often just come in and pick up. Another role play is designed with security in mind to make sure that the items in the showroom are secure.



Figure 3: Showroom Management

The next progression in an industrial distribution student's career is to, more often than not, move into inside sales. This role has several functions, taking phone orders, assisting outside salespeople, doing takeoffs, shown in Figure 4, and assisting with counter sales when needed. The inside sales role plays, Figure 5, are designed so that the inside sales person learns how to take extended phone orders, complete limited takeoffs and how to problem solve as they assist the outside salespeople in handling customer problems. Most of their work is completed over the phone, and do not actually work face-to-face with the customer. These role plays help the student gain confidence in taking orders over the phone and give them opportunities to practice organizational skills that are needed to complete accurate orders.



Figure 4: Take-offs



Figure 5: Inside Sales Role-plays

After a student has completed several years in inside sales, they often move into outside sales. As an outside sales person, they are responsible for the direct servicing and problem solving for the customer. The role plays, as an outside salesman, include scheduling appointments, Figure 6, preparing quotes, responding to requests for proposals (RFPs), and are responsible for 75% of the sales in a typical branch. The sales role plays are very important in showing how salespeople interact with the customer.



Figure 6: Scheduling Sales Calls

The first sales role play is designed so that the student learns how to set up appointments for sales calls. It's very important that the student and outside sales feel very comfortable

in phone situation. The simulation laboratory has an internal phone system that allows for much practice in phone skills. Telephone techniques are one of the assessment areas surveyed each year for graduates of the program. And it is one of the areas employers continue to state as a weakness on the part of new graduates.

The second role play is an actual sales call in the sales simulation office, Figure 7. The student will use their questioning skills to determine the customer's actual needs and set up a follow-up appointment.



Figure 7: Making Sales Calls

The third role play is the presentation of a proposal and learning how to ask for the sale. It is an excellent opportunity for the student to experience several sales situations as they observe other students responses in the role-plays. It is very important that the students learn to think on their feet and listen to what the customer is really saying.

Operations Simulations

Other than sales, another fundamental purpose of the laboratory is to expose ID students to various branch operational scenarios and Key Performance Indicators (KPIs). This provides a basis for understanding branch operational parameters in a simulated real world environment. The more students understand how a branch operates and how it makes money, the more prepared students will be when they go on their required internship and as they start their careers. Students with this knowledge will become much more valuable to their companies earlier in their career. The following operations simulations take place in the lab:

- Vendor Selection
- Item Entry
- Purchasing
- Picking
- Packing
- Shipment Scheduling
- Receiving
- Put Away
- Cycle Counts
- Forklift Operations and Developing OSHA Training
- Asset-management
- P&L and Branch Financials

Each of these simulations in a branch environment is important to the overall success of the branch. The student must understand the flow of material and how it gets to the customer.

Purchasing, and all its associated activities, is an essential part of the profitability of a branch. The vendor selection role play is designed to demonstrate how extremely important it is for the student to understand the process needed in selecting the best vendor choice, Figure 8. This exercise provides students opportunities to conduct vendor research, to determine the best choice based not only on price, but other factors that make quality vendors. In the purchasing process, one has to be certain that the product meets all specifications required by the customer.



Figure 8: Vendor Selection

Once products are selected they must be entered into the ERP system, so they can be entered into purchase orders. This item entry must be done in an accurate fashion taking into account the need to be able to identify the item in a search function.

Picking exercises are designed so that students will be able to understand picking flow, picking accuracy, the use of bar code readers and assisting pickers in this process. After the items are picked, it is very important that they are packed properly for shipment so the customer receives the product undamaged, Figure 9.



Figure 9: A Conveyor System Is Used in Picking and Put Away

As a branch management function, the scheduling of shipping is extremely important. The operation needs to be accomplished in a cost-saving manner and still get product to the customer when it is needed. A student must be able to set up deliveries using a variety of shipping methods, including parcel services, and in-house shipping. They must be able to determine the most profitable method of shipping.

Once product is purchased, it must be received and entered into the ERP system, so that the computer recognizes that the product is in the warehouse. It must be put away in the proper location so that it can be reached, read, and easily picked.

Cycle counts are extremely important in the inventory process in every branch. The students must gain an understanding of the process and the importance of accuracy of inventory. Cycle counts are used to make sure accuracy is up-to-date, so the branch manager does not have to wait until year-end inventory, Figure 10. It is much easier to correct inventory levels and discover the reasons for gains and losses if it is done on a quarterly basis rather than annually.



Figure 10: Cycle Counting

The movement of materials is done by either fork lifts or work assisted vehicles called WAVS, Figure 11. The students must not only learn how to operate these vehicles they must learn how to deliver an OSHA approved training program.



Figure 11: Forklift and WAVE Operations

Each student must also understand a profit-loss statement. It is important for each student to understand the financial implications of how the branch is making money, Figure 12. Each month the branch manager is responsible for determining how to make the branch ever more profitable.



Figure 12: Branch Financials Role-play

The Activant Profit 21 ERP software being used in the simulation laboratory provides students with the data for the operations that are simulated in the warehouse. This software was chosen because it is one of the most widely used ERP software packages for small to medium size industrial distributors. The introduction of Profit 21 into the simulation laboratory is intended to integrate the “Sales and Distribution” and “Materials Management” modules with lab.

In addition to learning Profit 21, students go beyond the physical movement of products. The laboratory simulations incorporate supervisory skill development, decision making and data analysis. These learning components are not only encouraged, they are required in nearly every laboratory exercise. This hands-on learning approach is critical since studies have shown that associative learning, where students perform actual tasks they can apply in a business environment, results in effective learning and future application of knowledge [1].

Conclusion

The Industrial Distribution Simulation Laboratory at University of Nebraska at Kearney is an integral part of the learning process in the Industrial Distribution degree program. Through extensive role playing, and incorporating hands-on application laboratory exercises, students graduating from the ID degree program gain real world knowledge and experience and are better prepared to immediately begin work upon graduation. This approach benefits future employers, as well as students, since graduates require less initial training on the job. Furthermore, employers expect graduates from the ID program to have an understanding of the integration of technology within the industrial distribution field.

The integration of emerging technology, software applications, management and supervisory training, and technical sales and distribution practices into a degree program is an ongoing endeavor. Although significant changes have been made to the ID curriculum, many as a result of input from the ID Industrial Advisory Council, many more changes are planned. To ensure effectiveness throughout these changes, student learning will be tracked and evaluated with a capstone course that will allow students to demonstrate their mastery of technical sales and distribution functions, leadership skills, and most of all, their readiness for a rewarding career in the industrial wholesale distribution field.

Overall, role play is seen to be a beneficial teaching tool as it develops practical professional sales and operational skills as well as academic knowledge. Students generally enjoy this hands-on approach to learning which broadens their understanding of the technical sales process through experiential learning.

Although this hands-on comprehensive approach to technical sales and wholesale distribution training is expected to produce effective graduates, continued research is needed to determine the long-term effects of this approach. Future research will help determine if graduates of this approach are more successful than previous students having graduated before the implementation of the simulation laboratory.

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Biographies

JAMES L. TOPPEN is Associate Professor of Industrial Technology at the University of Nebraska at Kearney. He earned his Ph.D. from Arizona State University. He worked in the wholesale distribution industry before joining the faculty in 2008. He teaches professional selling and branch operations courses in the Industrial Distribution program.

RICHARD A. MEZNARICH is Associate Professor of Industrial Technology at the University of Nebraska at Kearney. He earned his Ph.D from Texas A&M University. He had a 25 year career in business and industry before joining the faculty in 2004. He teaches electronics and professional courses in the Industrial Distribution program.