

Active Learning in Fashion and Textiles Supply Chain Management

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In today's digital era, students are no longer passive learners because they can access information conveniently anywhere anytime through, e.g. their mobile computing devices such as iphone. In order to arouse students' interests in learning as well as enhance teaching, there is a need to incorporate more activities in class which means establishing active learning. Here active learning refers to a learning process in which students will actively engage by, e.g. working on some real cases, projects and simulation games [1]. In fact, prior research on higher education indicates that active learning is especially important for tertiary and advanced education because it emphasizes higher ordering thinking such as synthesized analysis and solution development [2,3]. Based on my own teaching and curriculum development experience with active learning components for over a decade, I discuss and propose in this paper several practical ways on how active learning can be incorporated into the subject on fashion and textiles supply chain management [4]. I also suggest several future research areas on active learning and teaching for fashion and textiles supply chain management and related subjects.

Traditional teaching on fashion and textiles supply chain management focuses a lot on the theoretical aspects on the subject. Critical topics, such as inventory management, apparel production technologies, transportation management, use of information technology, facility control and location selection, supply chain coordination mechanisms etc, are usually presented in a way that students are simply passive learners and they learn as much as possible by listening to the teachers. However, most undergraduate students who attend a class on fashion and textiles supply chain management will have very limited industrial experience in fashion and hence it is very difficult, if not impossible, for them to visualize and truly understand how the theories and models around these topics can be applied in the real world. Even for postgraduate students (such as MA/MBA/MSc students) who have substantial industrial experiences, they also tend to understand only some specific facets of fashion supply chains (but not all). Let's consider a real and rather commonly observed example from my own class: A senior garment production manager who is an MBA student in my fashion and textiles supply chain management class is very knowledgeable on apparel production technologies and quality control. He has over 20 years experience in the respective fashion industrial sector and knows every step in the garment product development process and the related internal integration mechanism. However, he has no prior experience on "retailer-driven fashion supply chain coordination schemes" (which refers to how giant fashion retailers strategically and specifically impose contractual and alliance measures on the supplier(s) so as to achieve a globally optimal fashion supply chain). Unfortunately, since he has substantial experience in the fashion industry, when I discuss with the class the issues around retailer-driven fashion supply chain coordination schemes, he would naturally interpret these issues by his own experience from garment production and quality control. This will end up with a lot of confusion and misunderstanding on the topic.

As discussed above, it is crystal clear that for most students enrolling in a fashion and textiles supply chain management subject (at both undergraduate and postgraduate levels), basically none of them will know every part of the long fashion and textiles supply chain in practice (from upstream yarn producers, fabric suppliers, garment factories, to downstream regional distributors, local wholesalers and fashion retailers). As s result, in order to make sure that they will better understand the topics on fashion and textiles supply chain management, it is important to let them experience the scenario faced by each specific area and play an active role in the learning process. Despite being intuitive, it can be difficult to implement. In the following, several practical "tips" for implementing active learning in teaching fashion and textiles supply chain management are discussed.

1. Make students formally write down what they observed and thought about: One popular active learning process is to let students engage in some real world projects. In some projects, students are required to conduct a mini-research on some real cases. To foster class collaboration, teachers usually ask students to form groups and then make class presentation on their findings. Despite being a good idea, one common problem is: Students who attend others' presentations as audience usually do not pay much attention unless the topics are very interesting and the presentations are truly impressive. Even if they pay full attention, they will easily forget afterwards. As a result, the first tip is to make sure every audience is required to write down his/her own comments, findings and questions during the class presentation by others. One way to achieve this goal is to pass to every audience a form which requires completion and submission. In addition, a copy of the collected comments will be scanned/photocopied and passed to the presenting group for their references. This simple tip can foster class sharing and enhance the level of engagement of both the presenters and the audience.

2. Encourage innovative and deeper thinking by short and inspirational class exercises: In fashion and textiles supply chain management, many challenging topics require some strong motivation and inspiration or else students will find the topics very boring (especially for the topics that they could not easily follow). Thus, the use of short and inspirational class exercises is important. For example, in order to illustrate the interesting industrial practice of having a common sizing label for apparel products across markets, I brought a real label to class and asked students to discuss on this real-world observation. Students' points (of all kinds) were first collected, summarized and discussed, before I started the topic on inventory aggregation with a rigorous mathematical analysis for the theory. I believe that this kind of short cases not only can motivate students to learn the topics but can also facilitate deeper understanding and encourage discussions among students. Moreover, these exercises can keep students awake and redraw their attention after attending lectures for over an hour or more!

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3. Let students be decision makers - the role playing scenario-based exercises: It is interesting for students to imagine themselves as real decision makers and think about the optimal decision under each given scenario (Notice that this point is consistent with some other teaching models, such as Landgren and Pasricha's "Purposeful Assignments" with "Real Scenarios") [5]. For example, I once employed a real case on an apparel sportswear company to illustrate the topic on fashion apparel quick response program. I divided the whole case into many parts, and each part has a decision making issue (termed as "question") to be addressed. After introducing the background part, one question arose and students would work in groups to propose practical solutions with the given information available at that time. After that, students were invited to share their points and I would also make my points. Then, the case continued with the reported real decisions made by the specific managers of the real company and later on, another question arose. Students would continue to address these questions one by one with the given scenario. Through these role playing scenario-based exercises, students will better understand the respective problems, have more interests to learn, and can share with one another for all kinds of new thoughts and "crazy" ideas. With the corresponding discussions, students will also understand more deeply about the case and make critical comments on why some decisions failed. Last but not least, it is of great fun to most students.

To conclude, I believe that active learning is a global trend in tertiary education. By having more interactive activities among students and between teacher and students, students can learn better and the class discussions will be more fruitful. Moreover, it is of more fun from a teacher's perspective because students and their teacher are investigating the topics and solving the problems together with all kinds of interesting ideas. This approach is especially important for teaching subjects on fashion and textiles supply chain management. I hope that this discussion paper can provide some hints to fellow faculty members on how active learning and teaching can be achieved for fashion and textiles supply chain management (and similar subjects), and lead to more future related research and investigation. Before I close, I suggest some future research areas as follows.

- 1. Fashion textiles departments usually have quite a large intake for popular programs which implies that many conventional active learning activities would become difficult or even impossible to be implemented. It will thus be interesting to explore how active learning approaches can be effectively and efficiently implemented in a large-size fashion and textiles supply chain management class. Prior research by Power [6] can provide valuable reference.
- 2. Owing to the popularity of online education programs [7], another promising and interesting future research topic is related to the incorporation of active learning components into online fashion and textiles supply chain management subject. The use of social networks for active learning and teaching is also related to this topic.
- 3. Analytical models and data analysis are critical in fashion and textiles supply chain management. However, most fashion school students may not have solid background on analytical tools such as applied mathematics and computer programming; instead, they have strong appreciation to artistic aspects on fashion such as design and beauty. A failure to understanding analytical models could lead to very negative learning outcomes [8]. This indicates the need to have very careful planning of the active learning materials for them. As a result, another

future research area is to investigate how analytical models can be incorporated into the teaching and learning materials for fashion and textiles supply chain management under the scenario that the students have very diversified backgrounds. The reference work by Mandelbaum and Zeltyn [9] is very useful for this new research direction.

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4. Innovation in active learning: Future research can be conducted on the effectiveness of some innovative approaches on teaching [10,11]. For instance, encouraging active learning via game competition and other related activities is a well explored area [12] while how significant it is for fashion and textiles supply chain management is largely unknown.

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