



Textile Curriculum Development Model: Creating Continuity in Textile Education via Microscopic Fiber Identification

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The textile curriculum development model entails extensive learning through the work of textile microscopy. The goal of this model is to bring students back to a textile laboratory throughout their undergraduate tenure. The work with textile fibers should have continuity and not merely end with a completion of a textile laboratory course in an apparel undergraduate program. The study of textiles is complex and apparel students should be exposed to its complexities in many different subject areas to see how it can be applied throughout the industry. This textile development curriculum model is based on Dewey's (1938, 1963) theory on continuity of experience in education. According to Dewey, "what the student has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations which follow" (p. 44). He further explained that "the principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" (p. 35). Educational researchers support the idea that it is the teachers' responsibility to give students assignments founded in their earlier experience and create connections to the new experience (Elkjaer, 2000).

To create continuity in textile learning development, textile microscopy has been incorporated in two additional apparel courses: Supply Chain Management and Culture & Historic Costume. In the supply chain management course, students work on a project that entails selecting a product for import or export and creating a supply chain proposal. A part of this model is to obtain fabric swatches from certain manufacturers, and this is when students have to go back to the textile laboratory and conduct identification of their fabric swatches via microscopy. In many cases when students conducted their microscopic fiber identification in this course, it yielded fascinating results as fibers were of different content than what the products were supposed to be. Again, this provided students with real life experimentation with textiles. Once students complete this assignment in the course, the class takes a field trip to the US Customs Textile Laboratory. There, students meet and talk with textile analysts about their day-to-day responsibilities, and they also discuss most recent issues with identification of new textiles entering the US market. Students learn that textile analysts ensure that imported and

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exported textile merchandise has been properly identified. The information they provide can have an impact on duty rates, import quota restrictions, or whether merchandise can even be legally allowed into the country. The textile analysts also demonstrate their use of microscopy and let students try their more high-tech equipment.

The other course where textile learning development is applied is culture and historic costume. In this course students learn about how historical evidence is important to understand past cultures. It is quite rare that historic textile items would survive unless they are properly taken care of. This is when the conservation field of study enters the conversation. Understanding conservation practices allows students to analyze textile from a different perspective. Students can view historic fibers under a microscope and look for fiber damage. Students can also learn about fibers used in the past for clothing that are not as commonly used today, such as nettle. Understanding the morphology of nettle fibers and viewing it under a microscope can help students realize how similar they are to other bast fibers, such as linen. Again, this activity is only furthering the students' knowledge of textiles. At the end of this course, students meet a conservation analyst who visits the class. The analyst explains her day-to-day work in a conservation textile laboratory and her work with a variety of historic clothing items. She usually talks about at least 10 different cases that she has most recently completed, and she invites students to visit her textile conservation laboratory. Students gain further understanding of how microscopy is the best tool to use in identification of historic fibers as the process is non-destructive.

Instructors can develop student workbooks to support the continuity of textile learning development in apparel undergraduate programs. The student workbook might include microscopic micrographs of a variety of cellulosic, protein, regenerated cellulosic, regenerated protein, and synthetic fibers. Students can compare textile fibers to the workbook images while conducting identification testing and use it as a guide. Applying the continuity of textile learning development model with real life situations (e. g., the arranged meetings with US Customs specialist and the Textile Conservation specialist) in apparel undergraduate programs creates an environment where textile learning becomes more natural (Dewey, 1916/1966; Fishman & McCarthy, 1998).

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