



# Digital Printing Technology in University Experiential Learning Classes

Jefferson Miller and Laurie M Apple\*

University of Arkansas, USA

**\*Corresponding author:** Laurie M Apple, Apparel Merchandising and Product Development, School of Human Environmental Sciences, Dale Bumpers College of Agricultural, Food and Life Sciences, University of Arkansas, Fayetteville, Arkansas, USA.

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## Introduction

Experiential learning—that is, hands-on learning or learning by doing—has long been known as one of the best ways for students to learn [1]. By applying their theoretical knowledge in real-life situations, students can gain a concrete understanding of complex ideas. When students study abstract topics such as visual design, it's even more important for instructors to find ways to teach experientially. Measuring and describing the impacts of experiential learning activities helps university professors understand which of their practical activities such as laboratory assignments and practicums are most effective, but, more importantly, evaluating teaching methods helps explain why some methods are more effective and how learning takes place in various practical experiences [2]. Since well before the American education philosopher John Dewey wrote about the value of educational pragmatism in the early 1900s, college faculty have been successfully employing experiential learning techniques in their classrooms [3].

At the University of Arkansas, we have incorporated experiential learning into their college-level classes and laboratories through digital latex printing technology. Although it seems unlikely that we, instructors in agricultural communications (ACOM) and apparel merchandising and product development (AMPD), would have a common denominator between our respective teaching fields, we both had the vision for including a digital printer capable of printing on fabric for classroom and laboratory output. This common vision allowed for our collaboration in seeking funding for a shared digital latex printer. Literature in both our disciplines touts experiential learning as a key pedagogical approach [4,5].

We both teach software and skills in our classes that result in students developing skills to produce printed products. The agricultural communications students produce educational fabric posters and signage that inform audiences about practical agricultural research. The AMPD students produce graphic designs

for printed fabrics and graphic t-shirt. Historically, students in both disciplines were not able to see their designs printed on fabric—to examine how they look, feel, and move on media other than computer screens and paper. However, with the inclusion of a digital latex printer in our classrooms and labs, students are now able to see their graphic designs come to fruition on fabric and other substrates. This aids in determining if designs are conducive for production.

We were successful with two internally funded competitive grants at the University of Arkansas—one from the UA Honors College, and one from the UA Teaching Faculty Resource Center. The grants funded the purchase of a Hewlett-Packard Latex 365 printer [6], which is housed in the UA Agricultural Communications Experiential Learning Laboratory.

The printer has been relatively easy for students to learn to use. Once a handful of students received hands-on training from Grimco Inc [7], the licensed HP printer sales company, students have been able to train each other on operating and maintaining this \$17,000 piece of equipment. The HP Latex 365 prints on an array of fabrics and substrates, including poly/cotton blends for apparel and fabric posters to heavy vinyl's for signage, with high-resolution output. A built-in interactive control touch-screen walks users through the printer set-up and assists with troubleshooting. Grimco Inc., a licensed HP service provider, provides excellent online and telephone support and has dozens of short training videos online that students can use for training purposes [7].

We researched numerous printers that would serve our classroom and laboratory needs before settling on the HP Latex 365. This particular model provided the highest quality fabric printing short of what a dye sublimation printer would provide. Dye sublimation printers, which require much more space because of the need for a heat press, have a beginning price point around \$40,000. Also, while latex printing on fabric will not stand up to

multiple machine washings, it certainly suffices for the purpose of prototyping apparel designs. We also are pleased with the HP Latex 365's versatility. Our students have printed paper and fabric posters, large vinyl banners, and even vinyl decals for agricultural marketing, promotion, and educational projects.

ACOM students who have learned to use the HP Latex 365 say they feel a special satisfaction that they were able to quickly master the printing technology, and they especially enjoy seeing their designs on new media. AMPD students also have a strong appreciation for this new piece of equipment, which is allowing them to see their designs as they will look on garments. So, to date, informal feedback from students is strong. Their self-efficacy related to learning new technologies has certainly improved, and they are motivated to create and experiment with new visual designs in their classroom and laboratory assignments. We plan to conduct a more formal evaluation of student benefits in the very near future.

The two of us, unlikely academic partners from our respective disciplines of Apparel Merchandising and Product Management and

Agricultural Communications, are pragmatists in the mold of John Dewey. Always looking for ways to provide practical experiences for our students, our decision to incorporate the HP Latex 365 printer into our teaching has paid strong dividends for our students.

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