

The Rise of Online Digital Textile Printing Services and its Impact on Costume Design Practice

Brianna Plummer, Eulanda A. Sanders, and Fatma Baytar
Iowa State University

Keywords: digital textile printing, costume design, online printing services

Background. “Digital technology is changing the face of textile design, from methods of creating and presenting designs to the ways in which they are realized” (Bowles & Isaac, 2012, p.7). Digital textile printing has many capabilities making it ideal for the costume industry. Traditionally costume designers spend a great deal of time and energy sourcing appropriate textiles and costume shops dyeing, painting, embellishing, and distressing textiles to manipulate the sourced textiles (Cunningham, 1989). With digital textile printing, it is possible to recreate vintage patterns in endless colorways, to engineer motif within a garment pattern pieces, and to give the illusion of embellishments and distressing (Bowles & Isaac, 2012). In addition, the ability to print on demand and in smaller quantities (Carden, 2016) works with tight time lines and individual costume textile needs (Anderson & Anderson, 1999).

The birth of online digital textile printing services grew out of the new “maker” economy, the DIY ethos, and “democratization of technology” found in makerspaces (Joseph & Heslop, 2014, p.6). Bowles and Isaac (2012) equate individual designer digital textile printing to the rise of desktop publishing; both large-scale fashion companies and independent freelance designers can use this technology. The technology did not emerge as quickly for the textile industry because of the need to “develop suitable inks and large-format printers to accommodate woven as well as stretchable cloth” (Bowles & Isaac, 2012, p. 12). Today contemporary designers utilize digital image manipulation and digital textile printing to enhance their design aesthetic. Even small-scale designers can use home computer software, like Adobe Photoshop and Microsoft Paint, and digital textile printing services to create their own design and print short runs (Treadaway, 2007). Online digital textile printing companies, such as Spoonflower and Karma Kraft, primarily promote printing repeat designs and are marketed towards crafters and freelance textile surface designers (Polston, Parillo-Chapman, & Moore, 2014).

Digital Textile Printing in Costume Design. Digital textile printing is defined as the: (a) digital creation a surface design using a computer program and (b) digital printing of surface design file using a large format printer that prints the design directly onto the textile (Carden, 2011). However, not all costume designers have the computer-aided design (CAD) skills required for digital textile design, --- and not all costume shops or theatres have access to the hardware and equipment required for digital textile printing (Joseph & Heslop, 2014). Therefore, online digital textile printing services have capitalized on theatres’ limitations to integrate digital

textile printing. Companies, such as Hatley in the United Kingdom and Dye-namix in New York City, are promoting their printing services specifically for costume and theatrical fashion for the stage and film. Companies can also help a costume designer with limited CAD textile design skills in order for design realization.

Impact on Costume Design Practice. Universities are investing in digital textile printing centers that bring together education and industry. The Textile and Design Laboratory (TDL) at Auckland University of Technology was established in 2006 to provide access to advanced technologies and design expertise in textile technologies. Joseph and Heslop (2014) presented case studies of TDL's support of costume design for the New Zealand film industry. TDL introduced new methods for costume design where "one off and limited edition production and customization are required" (Joseph & Heslop, 2014, p.9). From historically accurate prints, precise color matching, and effective visual distressing, digital textile printing is a timely, cost effective, innovative method for costume design.

As technological software and hardware continue to become more accessible through digital textile printing services, the effects of digital textile printing in costume design practice will impact the both the process and the product. The acceptance and growth of digital textile printing is dependent on characteristics such as perceived usefulness, accessibility, ease of use, and clear gains in outputs (Dillon & Morris, 1996; Rogers, 2003). In the literature: (a) case studies reveal the clear gains that digital textile printing offers to costume design, (b) research shows digital textile printing services are providing access to the hardware, and (c) university centers are providing design expertise and training. However further studies are needed to investigate the perceived usefulness and ease of use of digital textile printing within the costume design discipline to understand its future.

References

- Anderson, B., & Anderson, C. (1984). *Costume design*. New York, NY: Rinehart and Winston.
- Bowles, M., & Isaac, C. (2012). *Digital textile design (2nd ed.)*. Ondon, UK: Lawrence King.
- Carden, S. (2016). *Digital textile printing*. New York, NY: Bloomsbury.
- Cunningham, R. (1989). *The magic garment: Principles of costume design*. New York, NY: Longman Inc.
- Dillon, A. & Morris, M. (1996). User acceptance of new information technology: theories and models. In M. Williams (ed.) *Annual Review of Information Science and Technology*, 31, 3-32. Medford NJ: Information Today.
- Joseph, F. & Heslop, P. (April 14-16, 2014). Enabling design and business innovation through new textile technologies. Shapeshifting Conference. Auckland, New Zealand.
- Rogers, E.M. (2003). *Diffusion of innovations (5th ed.)*. New York, NY: Free Press.
- Treadaway, C. (2007). Digital crafting and crafting the digital. *The Design Journal*, 10, 35-48.