

Experiential Client Development: Digital Fabrication Opera Costume Project

Barbara Trippeer
University of North Texas, Texas, USA Fashion Design Program

Keywords: client, costume, digital

Abstract:

In this project, the topic of experiential learning in the design classroom is explored through a project scenario whereby undergraduate fashion design students from visual arts and design collaborate with opera singer trainees and student musicians to co-create a production of Mozart's Don Giovanni for use in live stage performance. Through evaluation of the example in this research, I hope to illustrate how experiential learning and cultural critique in undergraduate programs may help in preparing design students for future innovative opportunities within professional practice in an evolving creative economy, as well as a springboard for entry level fashion designers to challenge traditional forms of garment design development through careful consideration of the overlaps between art, design, professional practice, collaboration, and the application of new technologies in the form of digital fabrication.

Introduction:

This paper describes an undergraduate project, which was inspired by the *ITAA Rutherford Teaching Challenge: Incorporating Experiential Learning into the Textile and Apparel Classroom*, and was integrated into a Fashion Design Studio: Alternative Processes course during the Fall Semester of 2019.

This project involved a mix of both junior and senior fashion design students learning digital fabrication methods of apparel garment development, and challenged them to incorporate these methods of garment execution into the professional practice scenario, in the form of client work for stage performance.

As part of the client project, students were challenged to design for a specific brand (the college of music), and develop ensembles for a specific customer profile (the opera characters), considering both the original historical context from which the opera was originally written, and the various needs of the customer profiles (user contexts and lifestyle applications). Additionally, the design students were challenged to reimagine these character personas through the lens of current social issues, such as the "Me-too" and gender-identity movements.

Each design student proposed individualized concept ideas (inspiration images, raw materials,

Page 1 of 7

and rough sketches) for various customer profiles (opera character personas) from the assigned client brief (Don Giovanni opera), based on the themes presented by the Design Director/Fashion Design Studio Instructor. Acting as the principal client, the Product Manager (Opera Director) worked in conjunction with the Design Director/Fashion Design Studio Instructor to identify which of the student design concepts would be most appropriate for each persona (opera character), and for each aspect of their lifestyle (each scene of the performance) through a series of in class critiques.

Designs were selected from the student's proposals which met the criteria of most appropriate, and from there the design process continued through an enactment of the professional practice life cycle development process, namely: Concept, Sketch, Material Selection, Initial Raw Prototype (1st patterns and muslins), Iterate (fit process), Sample (translate into final fabric, generate product packages), Initial Testing (Rehearsals), Delivery (Stage Performance), and Reflect.

Each student assumed a separate, but equal role as part of the design firm responsible for executing their client projects to the individualized specifications of their assigned client persona/opera performer, many of whom had what would be considered 'special sizes' body types in apparel industry terms, such as women's plus size, petites, and men's bit and tall.

The Fashion Design Studio is a rotating topics studio elective course, which is offered every other term in the fall Fashion Design majors. Students typically enroll either during their junior or senior year.

The text used for this course was Genova & Moriwaki's (2016) *Fashion and Technology: Materials and Applications*. Chapters two through four were used towards learning digital fabrication methods, including additive and subtractive manufacturing and soft circuitry.

As a studio class, most of the work is done in the classroom in a lab format, with all support materials housed in the online classroom course shell for supplemental learning and research. On average, 20-25 students are enrolled in this class, which operates out of the fashion design studio classrooms with associated equipment. For the Fall 2019 semester in which this example ran, 22 students were enrolled in the course, seven juniors and fifteen seniors. This combination allowed each senior to maximize their skills by acting as mentors to their junior counterparts, as their skill level and experience was more advanced. Additionally, the seniors in the class were challenged to produce the more complex ensembles, and in some cases, the more proficient seniors executed more than one ensemble.

All students were challenged to incorporate their new digital fabrication skills into their project development in some way, although the most critical components of their project were good

Page 2 of 7

craftmanship and professional execution. As part of their design process, students were required to document their experience as part of an E-portfolio.

As with a typical fashion design studio course, classtime is devoted to a range of studio activities. Students learn new skills (in this case: 3D printing, laser cutting, and soft circuitry) through in class demonstrations and hands-on experience, then reinforce this newly acquired knowledge through iterative stages of design development, presentation, and documentation to ensure active learning.

However, as part of the active learning, students were also challenged to critically apply their design concepts, previous training, and newly acquired skills to the group project, which was designed to emulate the design process in industry professional practice.

This meant that students had to research their client, based on the project brief. In this scenario, the project brief required them to develop an understanding of Mozart's opera Don Giovanni, to use as a starting point from which to begin their costume development.

Acting as the Design Director, the instructor shared textual materials about the opera (such as a translated script) with the students to use as reference regarding the historical context, from which the students could begin to identify the various client personas (opera characters) and lifestyle needs (various scenes within the performance).

Using their personal research, students were then involved in a series of "branding concept" meetings as part of their early semester in class discussions, which allowed students to have a dialogue on possible interpretations for the design direction of the work with the principal client/product manager (the Opera Director) to develop a shared vision in light of contemporary social issues (such as the Me-too and gender identity movements). From this stage, a line plan was developed, to delineate which how many ensembles to execute based on the number of personas (opera characters) and their lifestyle needs (scene changes).

During the following weeks, students presented their concept ideas as part of an in-class critique. Both the Design Director (fashion design instructor) and the client Product Manager (Opera Director) gave feedback, which helped to edit down the final selected concept proposals which would go forward into sampling, using a design process which is similar to design selection and editing meetings which take place in the apparel industry. In follow-up stages the actual actors were also brought into the critique discussions, which mirrored industry processes of working with buyers.

Over the course of the next few consecutive weeks, a range of studio demos were introduced so that the students could explore new digital fabrication techniques, and select which method

would be most appropriate for their design concept as assigned to their role. At the same time, students began working on the material selection process, based on donated materials from local design houses. Through a blend of these two variables (methods of construction and material selection), the students then presented their finalized design concepts (illustrations and mock-ups) for pre-approval to the Design Director (fashion studio instructor) during an in-class critique Finalization Meeting, before proceeding with prototype development (first muslin fittings).

Teaching this class required that the instructor be knowledgeable of industry product development processes, in order to effectively communicate to the students how the processes they were utilizing during the course of the project execution echoed apparel industry professional practices. The adoption of digital fabrication as part of the skill set in exploring project execution alternatives aided the student to transfer new knowledge into the framework of standard apparel industry product development practices.

Students were challenged as individuals to learn new skills (digital fabrication) and apply them toward their own personal project explorations (critical thinking). At the same time, students were challenged to work as a team, in the co-development of the project with their target clients (opera performers). The team project ensured that students learned how to collaborate, effectively communicate, and build trust between themselves and their opera counterparts, who would then embody the characters on stage for a series of live performances.

Conclusion:

This project has thus far only run for one semester in this format, that of Fall 2019. However, successful reaction from the students (as evidenced in their E-portfolio reflections) suggests that the format of this course, embedding students in client work using industry product development process, may aid students to become more prepared for professional practice. It may aid them in the transfer of knowledge, such as applying emerging methods of fabrication towards real-world industry scenarios, as well as be more adaptive to the needs of the apparel design market.

From the visual and verbal excitement of student comments noted in their E-portfolio Reflections, as well as the creativity put forth into final materials and presentations, it was apparent that this project was well-received by the students. As such, advantages of this project include that most of the students seemed to especially enjoy learning new technologies in a professional practice format, and since they were Fashion Design majors, the idea of having their work exhibited as part of a living stage performance was very appealing.

A disadvantage, however, is some did seem to have trouble adapting to the fast-paced environment of the project and variations within the client specifications. Additionally, the less technically experienced students struggled with translating their design concepts into the

specialized body types required based on using live opera performers, as special sizes pattern grading is not traditionally part of their curriculum training.

Other advantages relate to the fact that the students could apply what they learned in their previous coursework and were allowed to focus a part of the project on their future career goals as a category specialist. This was illustrated by students identifying various aspects of the persona lifestyle that they wanted to work on, whether it was the men's suiting, ladies' eveningwear, sleepwear, designer sportswear, or accessories design, which they discussed in more detail as part of the e-Portfolio Student Reflections.

However, one disadvantage of this creative freedom was that individual student portions of the project were not consistent or cohesive with other group members leading to a somewhat disjointed combined final group presentation. Therefore, clarification of what is considered a cohesive product to be submitted for final evaluation will need to be further specified without discouraging overall creativity that was indeed a special part of this experience.

Another modification that will need to be made for future semesters was that of the deadline for completion of the final sample in order to meet the production delivery schedule of the opera program. This may necessitate that the pre-development research portion of the project be done over the break before class starts, perhaps as a summer assignment, as the first two class periods alone did not allow enough time for all the students to cohesively blend their ideas for the "brand" concept finalization process.

The instructor's initial intention was for each student to quickly discuss and present their concept sketches and ideas in an informal-type setting. However, it soon became obvious that more collaboration was needed with the client in order to ensure all team members' design philosophies regarding the project creative direction were aligned. Therefore, in future semesters, at least two class periods are needed for students to have an adequate amount of time to share their project concepts.

In all, the Experiential Client Project (*Digital Fabrication Opera Costume Project*) was well-received by the students and served as an opportunity for students to conduct further exploration in garment design applications from multiple dimensions. This project also encouraged the students to think creatively about alternative formats for their design projects, as well as apply concepts from other courses besides focusing on their individual career goals.

For the future, the instructor will provide more guidance on how to present a more cohesive group collection that combines all the group members' contributions in a more integrated manner. Furthermore, in order to accommodate for the special sizes variables of the target end

user, the instructor will also allow for an extra training on pattern grading so students have the chance to effectively translate their ideas into functional ensembles for performance-based activity.

REFERENCED COURSE MATERIALS & TEXTS

Berens Baker, Laura. *Laser Cutting for Fashion and Textiles*. Fairchild Publications, 2016. ISBN-13: 978-1-78067-617-3

Bothmann, Oliver. *3D Printers: A Beginners Guide*. Fox Chapel Publications, 2015. ISBN-13: 978-1-56523-871-8

Braddock Clarke, Sarah E. and Harris, Jane. *Digital Visions for Fashion and Textiles: Made in Code*. Thames and Hudson Publications, 2012. ISBN-13: 978-0500516447, ISBN-10: 0500516448.

Cohen, Sahyre and Rodriguez, Hal. *Make It, Wear It: Electronics for Makers, Crafters, and Cosplayers*. McGraw Hill Publications, 2018. ISBN-13: 978-1260116151, ISBN-10: 12601161

Genova, Aneta and Moriwaki, Katherine. *Fashion and Technology: A Guide to Materials and Applications*. Fairchild Publications, 2016. ISBN-13: 978-1501305085, ISBN-10: 1501305085

Hartmann, Kate. *Make: Wearable Electronics: Design, prototype, and wear your own interactive garment*. Maker Media Publications, 2014. ISBN-13: 978-1449336516, ISBN-10: 144933651

Kettley, Sarah. *Designing with Smart Textiles*. Fairchild Publications, 2016. ISBN-13: 9781472569158

Pailes-Friedman, Rebeccah. *Smart Textiles for Designers: Inventing the Future of Fabrics*. Laurence King Publications, 2016. ISBN-13: 978-1780677323, ISBN-10: 9781780677323

Quinn, Bradley. *Fashion Futures*. Springer Publications, 2008. ISBN-13: 978-1- 8589-4563-7

Seymour, Sabine. *Fashionable Technology*. Merrell Publications, 2012. ISBN-13: 978-3990432259, ISBN-10: 9783990432259

Sloan Cline, Lydia. *Fusion 360 for Makers: Design your own 3D Digital Models for 3D printing and CNC Fabrication*. Maker Media Publications, 2018. ISBN-13: 978-1680453553, SBN-10: 1680453556