DIY Dress Form: A Facilitator of Online Fashion Education

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Abstract

The nationwide lockdown in March 2020 at the onset of the COVID-19 pandemic caused adjournment of classes *sine die*, as students hastened home often compelled to leave their tools and material belongings behind. The wide-scale disruption in the academic system necessitated academic Heads of Departments to consider the challenges posed by this situation prior to envisioning new modes of curriculum transaction in online mode. While academic delivery of theory subjects was relatively easy, the effective transaction of practical subjects such as draping, pattern making and garment construction, were challenging. The Fashion Design curriculum in National Institute of Fashion Technology (NIFT) includes over 200 lab and studio practice hours in each semester. Design ideation and hands-on exploration followed by assessment of patterns and test fits are integral to the program. During the lockdown, addressing the overarching concern of teaching-learning about three-dimensional draping and contouring, necessitated radical brainstorming by the subject specialists. The feasibility of solutions hinged on addressing the limitations of home confinement and thereby, constraints of materials and equipment faced both by the educators and fashion design students. Under normal circumstances, the available infrastructure facilitates each student by allocating a professional dress form for regular studio practice and exploration. With a firm understructure covered with foam and encased with fabric, a dress form may be shaped like a torso of an adult male, female or of children. It facilitates pinning and testing the fit of *toiles* which makes it an indispensable tool for fashion design students. This case study focuses on out-of-the-box thinking involving explorations, experimentation and finally, a practical solution to making a dress form that fulfils three essential criteria of being budget friendly, home-made in accordance with tenets of sustainability, and achievable by novices.

Keywords: Fashion education, pedagogy, DIY dress form, sustainability, pandemic, draping

Introduction

Fashion design education involves rigorous practical training on various aspects of apparel design and development, along with theoretical understanding of fabric and clothing. Design ideation and conversion of a design concept to an actual garment requires practice-based skill development. Suitable infrastructure is integral to the fashion design program to support and facilitate learning opportunities for the student. This includes dress forms in the studios and labs, as well as practice-based skill development in subjects such as draping, flat pattern making and test fitting of muslin toiles.

Professional practices of draping and test fitting are common in fashion institutes and the fashion industry. Fashion designers use dress forms extensively in professional practice. Dress forms are available in standard clothing sizes and are used as 'bodies' to develop patterns. Adjustable dress forms enable garments to be fitted to specific body proportions. The type and design of the garment determines the choice of hip-length torso forms, lingerie forms, and bifurcated forms by fashion designers. Industrially manufactured dress forms are shaped with accurately proportioned physical characteristics that represent standardized body sizes. The firm yet lightweight fibreglass core has two parts- the front and the back, in separate casts shaped with proportionate measurements in standard sizes used in the apparel industry. A professional dress form is usually shaped like a three-dimensional torso of an adult male, female, and children of different ages. It is covered with a thin foam layer usually of about 1/8 to 1/4 inches which gives it a cushioned tactility and helps to securely hold the fabric in place while pinning. The dress form is encased in a thick cotton cover with highly visible seams that are positioned for sizing and fitting a garment. Additional zones such as the waist level are indicated externally with a tape. Some dress forms have arms. Shoulders are separated and attached to a spring which allows collapsibility for ease of putting on and removal of test fits. Openings at the neck, armhole/armscye and base are sealed with metal plates. Torso dress forms have wheels for easy mobility, lever for adjustable height, and cage-like bottom to facilitate hem finishes. Bifurcated dress forms colloquially referred to as leg forms, have specialized functionality. Sizes of dress forms are usually printed for easy identification. The dress form facilitates draping, pinning and test-fitting *toiles* through a series of adjustments and alterations, which may subsequently be converted to a garment prototype. This makes it an indispensable tool for fashion students.

Literature Review

Dress form manufacturing companies manufacture both commercial half and full-scale dress forms. A literature review was undertaken to trace the historical antecedents of draping and test fitting of dresses.

Mannequin as precursor to the dress form

As an essential patterning tool today, the dress form derives from the made-to-order wicker mannequin in the 18th century, followed by the wire frame mannequin in the early 19th century, used for display in store front windows. In the mid-19th century, it was used by dressmakers for fitting clothes. The fashion mannequin lent itself to the representation of specific bodies. In design studios wealthy patrons would pay to have a custom dummy made to their specific measurements. In theatre and cinema, the dress form was an embodied 'actor' combining creativity and commodification (David, 2018) with the purpose of displaying designs for a specific individual. It is the true ancestor of the first commercial 'dummies' used specifically to design and display actual, full-scale male fashions in the 19th century (ibid.). The dress form is now widely used in the fashion industry as a fit model that represents a range of bodies.

Historical perspective of dolls and scaled down dress forms

In the seventeenth century the fashion doll known as Pandora, dressed in miniature versions of current fashion, travelled across Western countries. Viewing these dresses led to their replication on full size leading to wide dissemination of elite fashion across national borders. In 1945-46, the touring Theatre de la Mode aimed to promote French haute couture in other fashion capitals during a time of rationing and austerity. Couturier Madeleine Vionnet began her design process on a half-scale mannequin, working with the fabric characteristics along the natural contours of the body, to create the revolutionary bias-cut dress in the 1920s. This process of designing through draping on half scale dress forms has been one of the early modes of transacting fashion education (Phoenix, 2018).

Indigenous Dress Form Development Techniques

Industrially manufactured half or full-scale dress forms are widely available. But a custom dress form is an expensive proposition. Some documented techniques of developing indigenous body forms have been studied to understand the materials and processes of making (Table 1).

Table 1: Merits and demerits of existing methods and requirement of tools for making dress forms

S.No.	Type of dress forms based on method of making	Material requirements	Other requirements	Envisaged reasons for non-feasibility of item/ process for students during lockdown	Reasons
1	Duct Tape Dress form	i. 10-12 rolls of duct tape, scissors, cling wrap/plastic sheet, poly fill/ stuffing material ii. One snug fitted knit T shirt iii. Live model for cloning the body		i. A willing female person may not be available as a model ii. Duct tape may be available, but not in the quantities that the process may require.	i. Non-availability of a volunteer to model for making the duct dress form due to lockdown and social distancing ii. Fragility of the duct tape prone to tear may not facilitate repeated pinning actions iii. Closure of markets and unavailability of online deliveries
2	Moulded papier-mâchédress form	i. Plaster of Paris ii. Duct tape iii. One snug T shirt		I. End-product was hard and unsuitable for pinning	I. Not appropriate for teaching and learning draping ii. Non-availability of suitable materials iii. Advanced skill levels required
3	Dress form from commercial patterns	Printed patterns, shell fabric. polyfill, sewing thread, plastic pipe, measuring tape	Printing facility, sewing machine. Pattern availability Beginner-level patternmaking skills	i. Patterns ordered online ii. Polyfill used as filling material	i. Ordering ready patterns / printing paper patterns was not feasible due to non-availability of printing facilities ii. Patterns were full size and required sewing with sewing machine not available will all students. iii. Poly fill dress form was too soft; therefore, suitable for test fits but unsuitable for draping which requires a hard structure
4	Full scale industrial dress form	NIL	Affordability		i. Not practical ii. Not budget friendly

Duct-tape mannequin

Taping the body is a widely used method for making a customized dress form at home. A teacher and sewing-show organizer, Joyce Perhac uses ordinary duct tape as both the body-casting material and the final form. The method involves duct-taping a fitted dress worn by a live model, in multiple layers to create a snug structure following the contours of the body. The taped structure is carefully cut from the Center back and is removed from the body like a cast. This cast is later filled with foam or other stuffing material and re-taped at the Center back. The armhole, neckline and lower base openings of the dress form are then sealed by taping the cardboard (Coffin, 2008a).

Moulded papier-mâché dress form

A surgical-plaster cast or mould can be made using poured-foam form. This mould makes an accurate copy of the individual's body contours moulding to and preserving concavities. *A*rtist and art teacher, *Gail Gosser* has devised a way of making a plaster mould replacing foam with papier-*mâché* by mixing paper pulp insulation with wallpaper paste. Once dry, a body shape is cut from the plaster of Paris mould along the sides. Though plaster of Paris takes time to dry, it yields accurate results (Coffin, 2008b). However, under the prevailing conditions it was difficult to procure the required materials. It was also an expensive method.

Dress form with commercial patterns

Commercial patterns of torso block for women in specific sizes were explored.

Making this dress form did not require basic pattern making skills. This approach requires custom torso pattern based on specific body measurements to be purchased from a website selling patterns. These patterns are traced on the fabric and then cut and sewn together to make a shell and stuffed with bags of polyfill.

Research Problem

With the spread of the COVID-19 pandemic, a nationwide lockdown was announced in March 2020 initially for a fortnight, and subsequently extended several times. The ensuing uncertainty impacted the students who were stranded in their residence without basic tools, equipment and supplies required for their respective academic programs. The situational constraint caused high anxiety among the academia regarding course completion. While it was evident that online course transaction was the only way forward, this posed an unprecedented problem particularly in practice-based

subjects. Dress forms available in the studios and labs, were unavailable to the students at home. The authors were involved in teaching the subject 'Draping' in the fashion design department. The seeming impossibility of the situation regarding the pedagogy of practical subjects like draping, led the authors to articulate questions about the challenges. How can Draping be taught online? How can the subject faculty access dress forms for demonstrations? How can the students access dress forms to practice what they are taught? How can academic standards be upheld without compromising on quality and on schedule? To find a solution that is both creative and practical, documented solutions for making a dress form at home were researched and documented.

Methods

The authors drew up a list of material resources that were assuredly available with all students. Skill levels of the fourth semester students in terms understanding of paper pattern making and sewing were estimated as 'basic'. Therefore, they were not expected to make their own patterns. Initial attempts were made to develop paper patterns. Using basic stationery, half scale basic patterns were developed and taped together to construct a paper structure which, though relatively fragile, could stand upright on a table. Though the paper dress form could be temporarily used for test fits, its lightweight body and the lack of cushioning did not facilitate draping.

Further attempts to develop a mini dress form involved the use of muslin fabric using half scale patterns. The fabric shell was filled with cotton wool extracted from a pillow that gave it the look and feel of a stuffed object. However, the shapeliness of the upper torso especially the bust area appeared to be flat and did not resemble a woman's upper torso. As the process of draping requires pinning and smoothening the fabric on the dress form, it was found that the form was not strong enough to retain the desired shape when pressure was applied while pinning. Another improvisation for stuffing the shell of the dress form to increase its structural weight was to use a pet bottle filled with water as a central core structure with cotton wool padded around it. Though this technique gave relatively more stability to the structure, the draping process involved insertion of pins into the shell of the dress form which had an inherent risk of water leak if the pet bottle was perforated. Another attempt was to fill the bottles with sand instead of water as it was safe and gave weight and structure to the dress form. Carefully winding the cotton layers on top gave it the desired shape and facilitated pinning. It seemed like a good solution. The feasibility of sourcing sand/

mud by students living in high-rise buildings or apartments without plants required further exploration. Exploration of disposable knitted garments to fill the shell of the dress form showed that while the material gave a solid foundation, it distorted the shape of the torso.

Subsequently, patterns for a quarter-scale dress form were drafted and arranged on an A4 size paper layout. It was assumed that students who were unable to step out of their homes may not have access to printing facilities but would have laptops. It was envisioned that a laptop screen could be used as an improvised light box to trace actual size patterns on paper. Pre-worn trousers or denim jeans available at home, were identified for use as an outer shell of the dress form. The patterns were hand sewn using backstitch, a skill they had learnt in the previous semesters. It was assumed that making a quarter scale form would not require long hours of sewing. Discarded socks and knitted garments were cut into thin strips and used as stuffing as they were pliable and took the shape of the shell. This also allowed penetration of pins. Stoppers at the neck, armhole and bottom of the dress form were made in cardboard and covered with fabric. An optional pipe was inserted vertically in the dress form and the other end was supported by two cardboard boxes to make a stand. These techniques yielded effective results and were therefore, chosen as viable solutions for making improvised dress forms for wider application.

Implementation

Students were given a list of material requirement. This included pre-worn trousers in denim/canvas/any thick material, or alternately, 2 layers of thin material. Discarded knit garments like socks, vests, leggings, t-shirts and undergarments were also included. Tools included needle and thread for hand sewing. Cardboard pieces were sourced from old delivery boxes.

Process Flowchart

Step 1: Trace the ready A4 size patterns.

Step 2: Cut the patterns with seam allowance using thick fabric from old garments available at home.

Step 3: Sew the pattern pieces using a sewing machine if available. Alternately, use back stitch to make a shell. Assistance from the family in sewing was permitted.

Step 4: Cut small scraps of old discarded knitted garments after removing buttons and other closures as well as embroidered parts. Use this scrap as compact stuffing for the dress form. Fluffiness/ looseness must be avoided.

Step 5: Using the half-scale patterns developed (Figure 1) and circulated earlier, cut stoppers at the neckline, armhole and base of the dress form in cardboard and covered with fabric (A-Front bodice, B- Back bodice, C- Front bust cup understructure, D- Front skirt, E- Back Skirt, F- Arm hole, neckline and bottom stopper)

Step 6: After completion of stuffing of the dress form, attach stoppers at all apertures through stitch or glue.

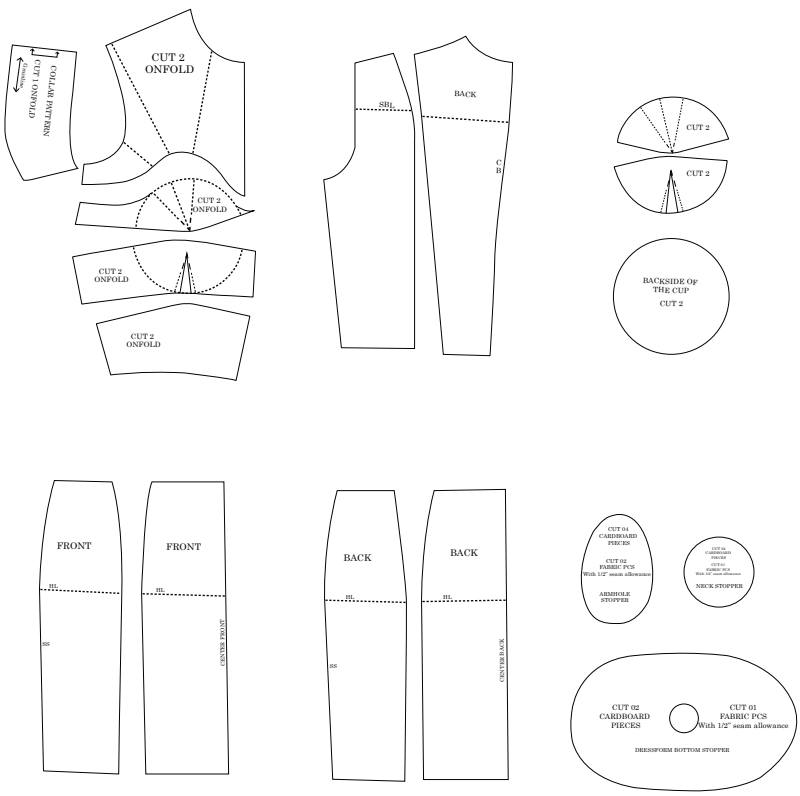

Figure 1: Pattern components of half scale dress form

Source: Ruhee Das Chowdhury

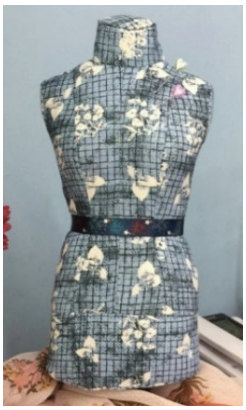

Figure 2: Quarter scale dress form

Source: Ruhee Das Chowdhury

Figure 3: Screenshot of the video documentation process
https://www.youtube.com/watch?v=HkuIHsxtWg0

Source: Ruhee Das Chowdhury

Figure 4: Half scale dress form

Source: Ayushi Suman

Discussion

After ascertaining the success of the quarter scale dress form (Figure 2), the authors disseminated the process through online demonstrations to 40 faculty members across NIFT campuses, who in turn, further disseminated it to the fashion design students. It was seen that the learners were successful in replicating the dress form within a week (Table 2). For additional reference and wider viewing, the process of making the half scale dress form was documented in a video and uploaded on a social media platform with the link *https://www.youtube.com/watch?v=HkuIHsxtWg0* (Figure 3). With increased awareness of the possibilities of DIY forms, there were continued explorations and improvisation of the quarter scale dress form that would be suitable for further developing advanced levels of contoured garments and corsets. A contoured and cupped half scale dress form was developed which further facilitated online learning during the lockdown (Figure 4). It is emphasized that the method of developing a makeshift dress form was not in competition with other documented methods researched for this case study. The documented methods available online, though informative, could not be implemented due to pandemic constraints, thereby requiring new methods to be devised.

Table 2: Parameters for assessment of the DIY dress form

Parameters	Exploration	Analysis
Material availability	No new materials need to be purchased. Discarded clothes and old cardboard boxes are repurposed	Successful
Affordability	Affordable as the process requires no monetary purchase.	Successful
Skill level	Basic B/W patterns were emailed to the students. Basic skills required tracing, basic hand sewing including back stitch and slip hem, and cardboard cutting skills.	Successful
Execution	Skills of dress form making were imparted to several batches of students across different NIFT centers. Execution was supervised for quality control.	Successful

Conclusion

The pedagogy of draping drew from the successful improvisation of the miniature one-quarter and half scale dress forms, implemented for three successive semesters. The process of developing these dress forms was based on the need for improvisation to override the constraints imposed by the pandemic. The DIY solution was considered successful for its ability to imitate lab-like equipment from within the safety of their

homes. The epithet of success applied to the development of the miniature DIY dress form stemmed from its ease of making and wide applicability by the Fashion Design students as an alternative to professional dress forms. No topics were eliminated, nor was there significant revision in the curriculum of Draping as a subject, as the students applied their learning in the safety of their homes. In addition, the assessment and evaluation of student assignments did not pose problems. The entire DIY dress form making process did not require purchase of new materials. Leading by example, the authors consider the initiative as a lesson in sustainability through reuse and repurposing available resources at home.

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