Digital Fashion: Reflections on Pedagogy from Key Australian Fashion Institutions

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ABSTRACT

This paper reflects on a range of different experiences and insights from Digital Fashion Australia: a newly established group of fashion, textile and costume design educators and industry professionals. As a part of an inaugural gathering on the unceded lands of the indigenous Gadigal people of the Eora Nation at the University of Technology Sydney, group members presented the current state of teaching, learning, and research using CLO3D within various courses and programs. The aim was to share initial approaches to course design and development given the newness of the software within teaching domains. The second part of the gathering allowed participants to share perspectives from different levels within the Australian Qualifications Framework [AQF] and from industry experiences and Industry Training programs (short courses). As a result of this, the group were able to identify and discuss some of the common advantages and challenges of teaching fashion using virtual 3D tools in conjunction with traditional studio teaching methods. The need to encourage and support small to medium businesses within the fashion industry to adopt and use CLO3D (and similar visualising fashion technologies) to become more sustainable within their design and production practices was a potential opportunity. Another key finding was to recognise the potential of a collaborating group of educators to form a community of practice to build and share resources and provide timely communication between the software developers and the educational users. This paper shares key discussion points and findings and proposes collaborative teaching and learning practices for digital fashion moving forward. The outcomes from this knowledge sharing provide a baseline and context for collaborative research and pedagogy relating to the use of digital technology within the key areas of fashion, textile and costume design.

Keywords: digital fashion, CLO3D, sustainability, communities of practice, reflective practice

INTRODUCTION

The digitisation of fashion, driven by the transition to Industry 4.0 and its emphasis on integrating physical and digital realms through concepts such as "smart factories, smart networks, and smart products" (Bertola & Teunissen, 2018), was already underway before the COVID-19 pandemic. However, 2020 saw a rapid acceleration in adopting 3D fashion software. Haute-couture designers, faced with a need to develop and show collections amongst social distancing, remote work and lockdowns, turned to virtual platforms. Similarly, with COVID-19 lockdowns limiting access to traditional studio spaces in 2020, students started using 3D design platforms such as Marvelous Designer and CLO3D in increasing numbers, with the crisis providing both an 'opportunity and inevitability' (Choi, 2022, 2) for digital technologies. The introduction of digital pattern-making software like CLO3D represents a shift, enabling real-time garment visualisation, efficient digital sampling and rapid pattern manipulation. However, its integration into education settings is still in its infancy. Further, as a rapidly developing software that is simultaneously being adopted by industry, its implementation into curriculum is not following the usual development processes. This dynamism is presenting unique challenges and offering new opportunities for developing pedagogy to re-imagine traditional studio practices within fashion, textiles and costume.

The authors of this paper represent members of the new Digital Fashion Australia [DFA], a collective formed in recognition of the need for educators to upskill to keep pace with emerging technology, student demand and industry developments. As early adopters already using the CLO3D software, members identified an opportunity to explore its potential for learning and teaching and to experiment with using CLO3D within fashion and textiles. As most members had begun to implement the software either in their teaching or professional practice, the collective provided an opportunity to share and reflect on progress to date and the way forward for embedding new technologies into existing pedagogy and design and product development workflows.

This paper focuses on some of the pedagogical aspects that were identified by this group of expert practitioners in their initial efforts to map the current landscape of teaching CLO3D in Australia[1], which we share here under the four themes of: Impacts for Learning and Teaching within the Design Studio; Advantages of teaching fashion using virtual 3D tools; Challenges for teaching fashion using virtual 3D tools; and Collaborative practice as an opportunity to develop interdisciplinary research networks. The intention of this paper is to share our current findings and engage with like-minded researchers and teachers from different disciplines and locations that are implementing new or emerging technologies within traditional studio-based

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[1] The scope of this study is limited to Australian educational institutions and does not include international perspectives. However, this focused scope allows for a detailed exploration of local challenges and opportunities within the Australian context. The findings presented in this paper contribute to the development of a Community of Practice, fostering collaboration and resource sharing among Australian educators to advance the pedagogy of digital fashion.

disciplines.

BACKGROUND

The term digital fashion has expanded significantly since its early 21st century roots in e-commerce to encompass a diverse range of technologies and practices. Baek et al. (2022) conducted a systematic review identifying six key themes in digital fashion: design, consumers, body, virtual, printing and supply. In the design domain, digital fashion has the potential to streamline the design and fitting process of physical garments, and tools like CLO3D can optimise workflows (Baek et al., 2022). Meanwhile, Nobile et al. (2021) emphasise the role of digital fashion in marketing and communication, encompassing both tangible and intangible products and processes that advance the industry and shape societal interactions. Yezhova et al. (2024) expanded this definition, describing digital fashion as "virtual creation, production and depiction of an individual's identity", particularly through CAD technologies in clothing and footwear.

The EU-funded Fashion Tech Alliance's [FT Alliance] (2020) study on future job roles in fashion-tech identifies the transformations required to support emergent roles in the industry. They broadly identify eight key themes, of which new design skills and roles incorporating 3D skills and the broader AR/VR environment, along with roles for sustainability and circularity, are most relevant to this paper. Additionally, they highlight the need for higher-level competencies using interdisciplinary approaches. Further, FT Alliance (2021) emphasises future directions, such as merging 2D pattern-making with 3D workflows and utilising digital simulations to validate designs, test style, colour, and fit choices, and provide virtual fitting experiences. To meet the demands of the evolving fashion-tech landscape, 3D design skills are increasingly essential for future fashion-tech careers. Emerging roles include 3D Modeling Specialist, 3D Visualisation Expert and 3D Pattern Designer (FT Alliance, 2020). These shifts necessitate that fashion education align with industry needs, addressing the intersection of digital skills and design methodologies. This includes balancing traditional studio practices with emerging approaches like experiential learning and action learning.

The design studio model, rooted in the "apprenticeship-driven artisan training" of the French atelier system in the 19th century and later influenced by the Bauhaus in the 20th century, remains central to fashion education today (Purasmaa, 2018, 10). Traditional fashion design education is grounded in studio-based environments where core skills—such as draping, pattern making, cutting, and sewing—are taught through a tactile, hands-on approach. These practical skills are often supported by complementary courses in textiles, drawing, and other creative disciplines. The increased usage of digital tools within fashion and textiles programs now means that as some students are taught about digital prototyping and how to use CLO3D to

augment the fashion design and sampling process, they also learn about digitalisation more broadly within the sector. Therefore, students engage with studying a range of different technologies such as 3D body scanning, Digital Product Passports, digital twins, 3D printing, AI, AR/VR, smart textiles, 3D knitting, digital wardrobes, 3D weaving and NFT's in fashion. However, in other cases, the main teaching methods are studio-based (rather than lab-based) and while CLO3D is being used to generate patterns and in some cases final virtual design outcomes, it is not being formally taught within the curriculum. In either case, the students gaining knowledge and familiarity with advanced digital platforms such as CLO3D is as important as teaching staff being enabled to maintain similar currency with emerging industry workflows and prototyping tools and methods.

METHODOLOGY

This study employs a qualitative approach, drawing on data collected during the inaugural DFA meeting and subsequent group meetings held in 2024. The insights developed throughout this paper draw from audio and video recordings and their transcripts from three separate group discussions conducted in January, July and November on Zoom and Microsoft Teams. This research adopts a collaborative, reflective practice methodology, positioning all participants as co-researchers. By leveraging the expertise of the group members, the methodology supports a dynamic, co-created understanding of the evolving role of CLO3D in fashion, textile and costume education. Members of the group represent expert teachers from universities, TAFEs (colleges of technical and further education) and institutions across Australia, who convened to discuss the integration of CLO3D into their programs (see Table 1 below). Individual expertise spanned from fashion and textile design to fashion manufacturing, costume design and production to CLO3D and film animation, underpinned by experience in learning, teaching and research within these areas. These sessions facilitated open, exploratory discussions, allowing participants to share practices, challenges, and opportunities related to teaching digital fashion technologies.

Table 1. Digital Fashion Australia (DFA) institutions and members

Institutions	Members
University of Technology Sydney	Dr Donna Sgro, Emily Hodges-Hundt, Melanie Gillbank, Cristian Vizcarra, Tran Dang, Shirley Tam, Dr David Pigram
RMIT University	Dr Angela Finn, Gareth Kershaw, Martina Ponzoni (Ponz Studio / D_archive Project)

Queensland University of Technology	Dr Madeline Taylor, Dr Zoe Mellick
TAFE NSW Fashion Design Studio	Tracey Eden-Willis
TAFE SA/Flinders University	Marcia Jones, Merrin Stacey
West Metropolitan TAFE (WA)	Lisa Pillar, Daniel Tinning
National Institute of Dramatic Art	Corinne Heskett (Course Leader, Costume)

This study draws on two significant examples for context and inspiration. The first: *Improving Pedagogy through action learning and scholarship of learning and teaching* (Albers, 2008), approaches relevant questions or topics through cycles of action and reflection in a similar way as Schön's model of Reflective Practice (1992) but with modifications to accommodate expert practice within the scholarship of learning and teaching. In this context, the cycles are 1. Experience, 2. Action, 3. Collaboration and 4. Reflection (Figure 1). Adopting this method provides a context and framework for discussions about major environmental, social, technological and industrial changes that have a direct impact within educational settings. This is particularly relevant for cases where curriculum change is sudden rather than the norm of more drawn-out negotiated adaptation or redesign.
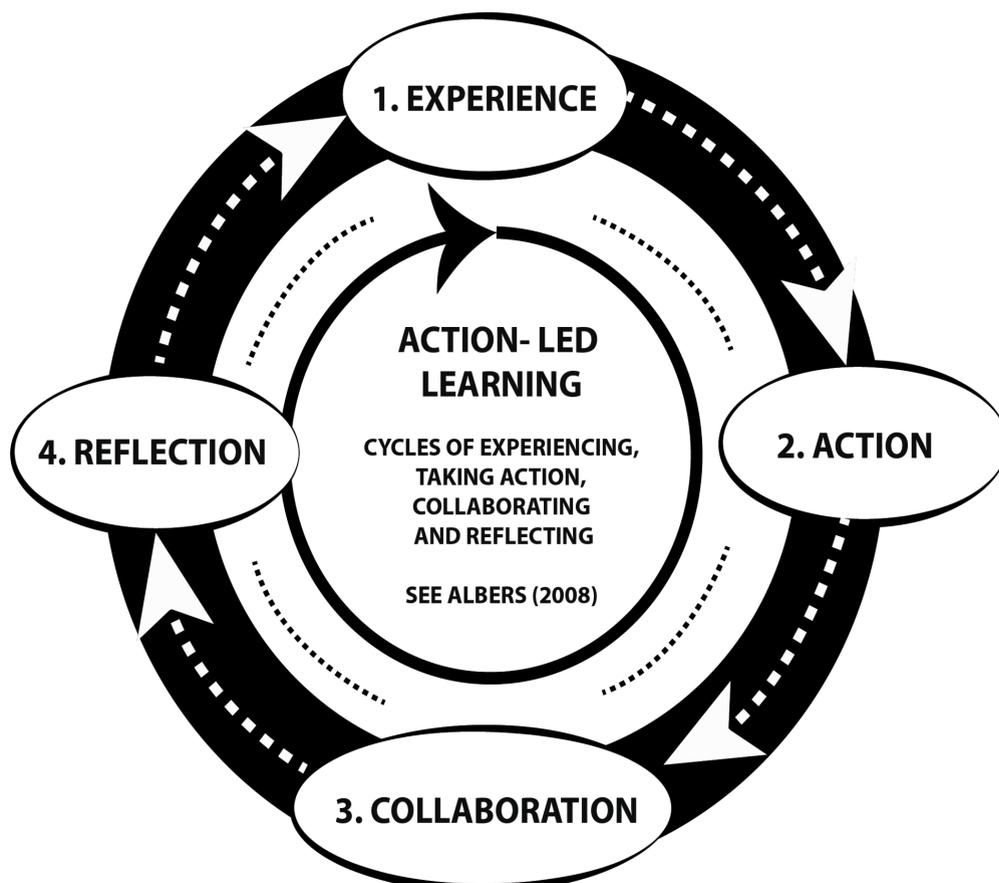
Fig. 1 Overview of Action-Led Learning Cycles after Albers (2008)

The approach is centred on three knowledge-based principles "...that suggest that the work experience of groups of individuals in similar contexts is an untapped resource for improving practice" (Albers, 2008, 76). The second paper that has inspired the need for this paper is a conference report authored by Peter McNeil entitled: *The Future of Fashion Studies* (2010). The McNeil paper makes a case for a similar approach of gathering experts to discuss common aspirations or aims for a particular field (in this case Fashion Studies). The original paper documents a point in time and shares reflections and observations from educators from different institutions and geographic locations on topics relevant to curriculum design and future research opportunities.

CONSIDERATIONS FOR LEARNING AND TEACHING
Impacts for learning and teaching within the design studio
In traditional fashion design education, assessment is often centred around physical outputs. Students are graded on their ability to produce a final garment, with assessment typically focusing on technical skills, material use and design creativity, alongside supporting materials including sketchbooks, research journals or mood boards to display the process and critical thinking, and reflection on their own work. However, students typically focus on delivering polished final products, and can sometimes undervalue the exploratory and iterative aspects of the design process. Fashion design units are typically structured to build towards a capstone project, often a graduate portfolio and fashion collection that showcases students' skills and prepares them for industry roles.

However, this traditional model presents several challenges. For example, the cost of materials, especially when students are required to create multiple prototypes, can be prohibitive for students. The reliance on physical resources often contributes to substantial material waste, a pressing concern in the context of sustainability. Additionally, translating 2D designs into 3D garments can be technically challenging, requiring significant time, practice and repeated iteration to achieve the desired results. Limited access to studio spaces and equipment can further constrain students, particularly during peak times or when institutions face resource limitations and pressures to grow their courses. These challenges were amplified during the COVID-19 pandemic, which made it necessary to move to remote learning and disrupted traditional studio-based learning models. Like haute-couture houses, fashion schools were forced to adapt, exploring alternative formats such as digital presentations and virtual exhibitions. This shift prompted the need for new ways to communicate the tactile and material qualities of fashion through digital mediums.

Industry demand for graduates skilled in CLO3D has further driven its integration into fashion design curricula. The capabilities of CLO3D for virtual sampling, enhancing

supply chain communication and fostering sustainable and efficient workflows align with current graduate requirements. This is supported by D'Itria and Vacca (2021) who argue the shift towards *digital transformation* in fashion design education, accelerated by external factors like the COVID-19 pandemic, aligns with the calls for a *transformative sustainable educational model.* CLO3D, as a cutting-edge digital tool for virtual prototyping and digital pattern-making, plays a key role in this shift. The incorporation of CLO3D also resonates with the academy-industry collaborations described by D'Itria and Vacca (2021), emphasising the importance of shared objectives between educational institutions and industry to foster a sustainable paradigm. Through CLO3D, higher education institutions not only upskill students in cutting-edge tools but also align curricula with evolving labour market expectations, ensuring graduates are equipped for future challenges.

This study demonstrates that universities and institutions have adapted CLO3D into their curricula in different ways. For some institutions, students quickly adapted to using CLO3D, while educators were simultaneously required to upskill to effectively support their learning. For instance, Queensland University of Technology (QUT) integrated CLO3D into second-year fashion design and textile units to bridge analogue and digital workflows. UTS focused on the potential for embedding sustainable practices in fashion design and collaborated with industry stakeholders to incorporate real-world briefs into CLO3D-based projects. RMIT leveraged students' familiarity with Marvelous Designer to transition into CLO3D through a student-led exploration model, while TAFE introduced dedicated CLO3D courses for educators, students and industry. As CLO3D has been developing so rapidly, the value of this group is to share information, resources and updates, all learning together, as well as learning with students and industry.

Advantages of teaching fashion using virtual 3D tools
The integration of CLO3D into fashion, textile and costume education offers multiple pedagogical advantages that enhance traditional studio teaching methods. Moving students between analogue and digital patterning processes as they progress through their studies accommodates diverse learning styles and visualisation capabilities, the same way draping contrasts with flat pattern-making in the traditional studio environment. Working across these two modes, the digital and analogue, requires students to develop a more holistic and explicit understanding of design and production workflows and processes, zooming them out from the specific garment or task at hand to develop mental models of the stages of pattern making as a design activity.

UTS identified some interesting observations when first introducing CLO3D for first-year students it was in the patternmaking and construction subject. However, CLO3D replaced a key project through which students reverse-engineered a pattern from a toile to then create a professional garment. In replacing this task, the students' manual

patternmaking skills in their second-year were impacted. Hence the educators decided to introduce CLO3D for the first-year as a visualisation task only in their visualisation subject, and introduce patternmaking in CLO3D in third-year, when students had developed their manual patternmaking skills. This finding echoes Kwon et al.'s (2017) suggestion that introductory program familiarisation courses are needed for digital fashion tools before students can execute more complex design tasks. A noted challenge for fashion educators was to allow space and time for critical thinking and learning - with students not just copying instructions but absorbing knowledge and being able to apply it to new scenarios. This was similar to a case at RMIT where students had excessive online and video content but seemed to be finding it difficult to retain knowledge of basic patternmaking and construction techniques.

Teaching traditional studio skills such as patternmaking using 3D tools also highlighted important gaps in existing teaching, such as those discovered at QUT regarding students not walking their patterns[2]. Further, the visualisation capabilities of the software accelerate students' comprehension of complex pattern manipulations, while the software's sophisticated material simulation capabilities enable students to develop a deeper understanding of how different fabrics, fibres and their structures influence pattern drape and garment behaviour. Significantly, CLO3D expands opportunities for exploring body diversity through personal avatars, moving beyond standard sizing constraints that have historically limited fashion education. This responds both to widespread demand, and increased social consciousness on the need for diverse body representation. An unexpected benefit has emerged in terminology acquisition, as students naturally learn industry-specific fashion terms through their interaction with labelled tools or materials within the software, particularly in relation to fabrics or pattern features.

Using CLO3D can also offer significant efficiency gains and sustainability benefits. As mentioned earlier, the reduction in physical patternmaking waste, including paper and toiling materials, aligns with broader industry sustainability goals and research (Australian Fashion Council, 2023). The software dramatically accelerates the sampling and iteration process, allowing students to explore multiple design variations in a fraction of the time required if they were to be physically constructed (Nissen and Nerup, 2020). For some institutions such as RMIT, this has prompted a reimagining of traditional assessment, with students now presenting digital toiles for some subjects, and even presenting virtual fashion collections. This suggests opportunities for an expanded definition of what a fashion 'outcome' might be for assessment purposes. The integration of cloud-based material and pattern libraries through CLO-SET[3] enables students to develop valuable digital archives of their patterns, which, unlike

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[2] Walking patterns is a process where matching stitch lines of each pattern piece are moved together to simulate stitching. This is done to check that the pieces have accurate measurements prior to cutting.
[3] CLO-SET is an online marketplace for CLO virtual fashion objects, accessories, fabrics, avatars etc. set up and managed by CLO3D. Creators can also manage workflows, and create pattern and fabric archives to share amongst teams.

cumbersome physical pattern collections, remain readily accessible, and which they can even sell through the platform. Between the collective educational institutions, CLO-SET also facilitates resource sharing. Educators at TAFESA have further used CLO-SET to collate, annotate and grade students' work. Furthermore, being online, the use by students and staff to deliver remote learning addresses the practical constraints of crowded studio spaces that many of our members shared as a challenge and students' desire for flexible, on-demand learning.

Challenges for teaching fashion using virtual 3D tools

As with any new technology or major industrial change, there are challenges for educational institutions to keep up with the fast pace of the advancements being made. Existing course and program models are similar in terms of overall timeframes, contact hours and expected learning outcomes (depending on Australian Qualifications Framework see www.aqf.edu.au). Curricula is already straining under the need to equip students with the basics for being 'ready for work'. A challenge for educators is to keep up with an expanding minimal knowledge base while avoiding skimming the surface of all areas without compromising deeper understanding or hands-on practice. One approach has been to design studio-based assessments that allow student-led decisions around the different tools and methods available. At RMIT within Year 3 Fashion Studios, students collaborate with their teachers to propose their projects with a focus on building different skills and capabilities experienced through a design project. Within a different course, Digital Techniques and the Body, students learn to use CLO3D to become aware of Digital Fashion technologies in a more structured and direct learning approach, moving to a student-led project in the second part of the course. In either case, there are some considerations that might be relevant for discussion or planning in curriculum design.

There are undoubtedly many advantages to using CLO3D and both industry and education are racing headlong into working with the software and developing virtual fashion outcomes ranging from fabrics to fashion garments to avatar 'poses', or runway scenes. However, there are also some potential disadvantages to using CLO3D within a learning and teaching setting. Some issues that are arising are centred on ethics, given the wide range of digital assets available for purchase on CLO-SET it will become increasingly difficult to manage academic integrity and plagiarism will likely result. This is a widespread challenge in conjunction with managing AI use in all areas. Importantly, CLO3D is capable of generating outcomes that work well in a virtual environment but do not directly translate into real-world outcomes: there are learning curves around fit and construction that are straightforward where users have accumulated the basic knowledge of garment construction for example but not easily achieved where this underlying knowledge is absent. Group members from industry and TAFE also highlight these challenges are complex even for those with experience. This means that students will require traditional studio teaching in conjunction with digital fashion training which is difficult to accommodate within 2-3 year-long

programs.

The experiences of continuing to run courses and programs throughout the various lockdowns of 2020-21 resulted in a departure from the normal practices and procedures of developing and introducing new courses (or changes to existing courses) that generally take between 12 to 24 months to be reviewed, amended and adopted within a program of study. During this time, teachers had to take the lead to ensure they had content and assessment that was modified or re-written for online or remote delivery. The advantages have been to allow educators to introduce new tools and capabilities alongside industry (rather than following industry). However, a potential drawback is that the excitement surrounding CLO3D and the technical advancements enabling much shorter lead times for visualising sample products may turn out to be a short-term investment by the industry, with future challenges arising if the digitalisation of design and prototyping processes proves ineffective in the long run. CLO3D does have a low buy-in point compared to previous major systems (for example: Gerber or StyleCad) but the large number of people employed in fashion design realisation through design, patternmaking and sampling may be negatively impacted with this change. The originality of designs (design security) is more easily undermined with the potential access and use of digital assets using these platforms. The students who decide to specialise in CLO3D and other emerging software may contribute to emerging industry roles, while those focusing on traditional studio practices could be left behind. A major challenge for educators, and their relevant institutions, is to find the additional time and budget to ensure staff are upskilled and adequately trained to teach CLO3D and similar programs that continue to emerge.

Collaborative practice as an opportunity to develop interdisciplinary research networks

The first working group meeting of DFA demonstrated that an interdisciplinary community of practice through which we can share best practices, ideas and problems is a core part of engaging with new technology and its teaching. While the profession of fashion design co-evolves together with technological and social changes (Särmäkari & Vänskä, 2022, p. 211), teaching needs to adapt as well. Alongside membership from fashion, textile, design and costume teachers and industry, the meeting included representatives from architecture and the Advanced Fabrication Research Laboratory (AFRL) at UTS. Understanding what is core to each discipline whilst engaging with disciplinary practices that embed 3D design can assist in keeping us open to new possibilities using 3D tools. As with any major technological change, this change promises to augment current practices while proposing radical new ones.

The inaugural meeting of DFA was held at UTS on 9-11 July 2024. During this hybrid meeting, all members presented their current teaching using CLO3D, followed by a discussion session. In addition, across 3 days, visits to AFRL and the UTS Data Arena

showcased the various ways to use CLO3D or other garment simulation software in novel scenarios. The AFRL is a specialist research facility within the Faculty of Design, Architecture and Building *at* UTS. The AFRL houses state-of-the-art facilities for producing customised products, pushing the boundaries of digital fabrication and advanced manufacturing (University of Technology Sydney, 2024). Ordinarily, it has supported research and teaching within architecture and product design disciplines. However, the AFRL has worked through novel digital solutions to support the uptake of virtual garment simulation within our fashion and textile disciplines. For example, during the visit with the AFRL, members could interact with garments that UTS students created in CLO3D through Augmented Reality using the Hololens 2. The AFRL Technical Officer, Tran Dang, supported students and fashion staff by developing a pathway to convert CLO3D files into a format that could be read by the Hololens 2 device, enabling users to experience garments in AR and interact with them at full scale. Also under the tutelage of the AFRL is the Shima Seiki 3D Knitting Lab, which members visited. The digital design process was explained and demonstrated, showing how garment simulation aids the creation of 3D Wholegarment knitted samples or artefacts. Opportunities to work between CLO3D and the Shima Fiz software are also in the exploratory stages.

The UTS Data Arena "is a 360° data visualisation facility designed for collaborative experiences" (UTS Data Arena, 2024a). As part of the DFA program, members visited the facility and experienced several projects. Two projects, Annie's Aquarium (UTS Data Arena, 2024b) and the AFC FashTech Lab (UTS Data Arena, 2024c) demonstrated immersive applications of CLO3D. Annie's Aquarium was an innovative Honours project by UTS Fashion & Textiles 2021 alumni Annie Tran. Applying 3D design to create virtual fashion for the first time at UTS, Annie's project is an immersive underwater game featuring garments designed in CLO3D and Blender, combined with their interaction in an underwater aquarium using Unreal Engine. The UTS Data Arena was a partner for AFC FashTech Lab, launched by the Australian Fashion Council [AFC] in 2022 and followed by a second iteration in 2023. The AFC collaborated with selected technology partners in this program, including local companies Couture Cad (digital pattern making using CLO3D), Ponz Studios (digital artistry), Bandicoot Imaging (material digitalisation) and Style Atlas (circular PLM) (Australian Fashion Council, 2024). The aim was to offer a digital pathway for fashion design sampling, transforming the ordinary physical production of samples. This is the first project of its kind in Australia.

Collaboration and discussion with the AFRL and the UTS Data Arena have demonstrated that leveraging the experience afforded through working with our interdisciplinary colleagues to forge new digital pathways promises to create new types of practices. By working with practical insights from architecture and product design, workflows can be established by building upon the knowledge and skills of our colleagues using programs such as Rhinoceros 3D and SolidWorks. Similarly, by

integrating a gaming engine such as Unreal Engine with support from animation professionals, fashion, textile, and costume practices can evolve to showcase our work in new ways. It also aligns with the call for more interdisciplinary opportunities in design education (Faerm, 2011). There are many opportunities for new types of collaborative practices, which can be explored in the context of a teaching environment. For example, fashion design collaboration with game developers shows the potential to create 'alternative fashion-related experiences for digital and hybrid spaces' (Tepe & Koohnavard, 2023, p. 38) where instead of primarily focusing on digitising traditional fashion processes such as sampling or patternmaking, new types of 'digital-only' practices can emerge that are not constrained by physical limitations. Other members also acknowledge various opportunities to partner with industry and collaborators from other disciplines through projects at their respective institutions. However, the UTS examples form a case in point for this paper.

POTENTIAL LIMITATIONS OF THE STUDY

The scope of the study is limited to the charter members of DFA which does not include representation for all courses or programs that are offered in each state or territory in Australia. This limitation, including the exclusion of student perspectives and the relatively small, self-selected group of participants suggest potential avenues for further research, such as broader surveys to assess the long-term impact of CLO3D on teaching and learning practices within and beyond Australia.

CONCLUSION

While a definitive pedagogical model for integrating CLO3D into fashion education has yet to emerge, this paper shares experimentation and knowledge from multiple institutions to explore best practices. The paper also highlights emerging collaborations between universities, TAFEs and industry, as well as interdisciplinary collaborations, showcasing the potential for partnerships to enrich digital fashion education. It recounts the story of how this community of practice formed, offering insights into early strategies, shared learning experiences, and the potential for collective resource development to support the next phase of digital fashion pedagogy. The examples of past collaborations and the theory of action-led learning provide two potential ways to frame ongoing and future scholarship within and beyond the DFA collective that includes membership from industry and tech companies.

As the collective continues to grow, and potentially begin to share more data-intensive outcomes and objects that exist within virtual spaces, DFA will experiment with different ways of disseminating findings and generating active discussions with current users. As a starting point, DFA has established a LinkedIn Group, Digital Fashion Australia, with open membership. A significant opportunity of this experience has been to approach curriculum, course and assessment design as a collaboration

between different institutions and across different study levels – and to share resources with other educators and to receive industry feedback as a dynamic part of the methodology. This is a departure from traditional institutional approaches that withhold information to give a particular degree an 'edge' over competitors. The aim is to enable the capacity for teachers to customise and experiment within their teaching practice, through building upon shared resources and knowledge informed by a peer-engaged model. The opportunities for collaborative research are newly evolving and present an exciting moment for digital fashion scholarship in Australia.

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