Transforming perspectives on gender through imagined futures: A speculative design inquiry

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ABSTRACT

This paper will present a second-year Fashion Design Theory project, 'Imagining Gender Equality in 100 Years'. The project outcomes were based on the critical design approach of speculative design (SD), exploring the intersectional issues of gender relevant to a South African context. SD thrives on imagination to create scenarios that change perspectives, beliefs, and values related to social problems. The following questions were posed to the students in developing the project guidelines. Firstly, what will the change in values, beliefs, and attitudes related to issues of gender look like in the future? And how can students use design to imagine spaces in the present for discussion and debate about alternative ways of being in an imagined future? With the application of action research, the paper discusses and analyses a selection of student projects completed in 2020 and 2021. In doing this, the paper aims to reflect on the transformation of a design theory assessment by applying critical design approaches culminating in creative and conceptual outcomes for complex life problems. In addition, reflections and lessons learnt on the blended teaching and learning methods amidst Covid-19 will be imparted.

Introduction

Design practice is traditionally regarded as being diverse in the different specialist fields housed within it such as fashion, industrial design, and graphic or communication design. Each of these disciplines is associated with its unique practices and methods (Sparke, 2019). Traditional design practice in higher education (HE) is usually implemented in such a way that the various design disciplines do not interact, even though some approaches to designing may be similar. This is also demonstrated in the structure of design education, where teaching and learning activities are structured "to align with these separate areas of specialisation, with a focus on students developing expertise in their unique discipline" (Evans, Kelly, & Kerr, 2021:16).

As societies advance, so do the ways designers design and think of design. Sparke (2019) states that discipline-specific boundaries continue to evolve as the digital age and technological advances challenge designers to take on many roles and apply a multi-disciplinary approach to solving or interrogating critical social issues. Critical design encompasses any activity or conceptualisation that opposes the norms and approaches of design practice (Haylock, 2018). Critical design is a design approach that interrogates the existing state of affairs or status quo by imagining future scenarios and proposing alternative perceptions related to our beliefs, values, attitudes, and social behaviour (Dunne & Raby, 2013). Innovative technologies focus on creativity and imagination. Creativity, imagination, and innovation are key components of critical design, which supports how "design principles support practitioners in developing appropriate solutions" for people and centring their needs and experiences (Hermann, Pentek, & Otto, 2016:3928).

SD is a design approach grounded in critical design and design thinking that utilises imagination and storytelling to design speculative future scenarios. These imagined futures offer new perspectives on various problems through expressive design. This design process thrives on imagination and seeks to "create spaces for discussion and debate about alternative ways of being and to inspire and encourage people's imaginations to flow freely" (Dunne & Raby, 2013:2). Dunne and Raby (2013) postulate that design speculations can change or redefine one's relationship to reality and the various social issues faced by society.

The topic of gender and equality is a social issue with which all stakeholders and industries should be concerned. Furthermore, its inclusion as the fifth United Nations (UN) Sustainable Development Goal, commonly referred to as SDG5, highlights the importance of the empowerment of women and

girls is through achieving gender equality globally (UN, 2022). Gender inequalities are commonly based on biases and stereotypes that permeate society and cultures. Therefore, instilling gender parity across various key sectors such as education is critical (World Economic Forum, 2019). The World Economic Forum's Global Gender Gap (GGG) Report (World Economic Forum, 2020) makes the point that at the current rate of change the overall gender gap is only expected to close in 99.5 years. Therefore, contributions to lessening that gap are urgently needed.

The insights in the GGG 2020 Report present an opportunity for a design-led pedagogic intervention. Explored through a critical and SD lens, this article seeks to contextualise and analyse a second-year Fashion Design Theory project titled 'Imagining Gender Equality in 100 Years'. This article explains the key concepts of the project and analyses selected students projects. The brief for the project presented two questions: (1) What will the change in values, beliefs, and attitudes related to issues of gender look like in the future? (2) How can students use design to imagine spaces in the present for debate and discussion about alternative ways of being in an imagined future?

Contextualisation

Design thinking and critical design

Since the main design approach of this article is related to critical design, it is pertinent to contextualise the broader approach and way of thinking that is synonymous with critical design. Tania Allen (2019), in the introductory chapter of the book titled *Solving Critical Design Problems,* observes that design champions innovation and can therefore generate solutions to the societal and environmental problems that the world is facing (Allen, 2019).

Design thinking is a design process applied in the development of relevant solutions that impart positive change (IDEO, 2012). Design thinking is characterised by empathy, collaboration, optimism, and experimentation (IDEO, 2012). Empathy in relation to design thinking refers to the understanding and inferring of people's needs and experiences. Collaboration allows for multiple perspectives from various disciplines in developing solutions. In addition, a collaborative approach to design supports and nurtures an interdisciplinary approach to designing and solving complex social issues (IDEO, 2012). The experimental nature of design thinking cultivates "learning by doing" (IDEO, 2012:11) and employs a systematic strategy in fully exploring all aspects of the problem to realise a positive solution. Design thinking is often presented as five steps or stages: Step one is to empathise

with the user through observation. Step two is to define the problem. Step three is to ideate through an iterative process of conceptualising relevant ideas. Steps four and five are to prototype and test the ideas with the users (Gonsher, 2016).

Apart from design thinking, various design approaches offer unique and relevant ways to spark innovative thinking and creation. Critical design is one such approach. Critical design can be defined as a problem-finding process that uses design as a medium to provoke thought and ask questions in the interests of society and thereby explore how the world could be (Gonsher, 2016). This design approach is a critique of the socio-economic or environmental context of a particular problem that exists (Gonsher, 2016). SD and critical design follow the same premise, which is to explore an identified problem through design with the intention of provoking thought and changing perspectives on problems in society (Dunne & Raby, 2013).

SD

As design practitioners and educators, we are aware that design disciplines have slightly different approaches and design specialisations, but some general activities or processes are common to all disciplines. SD differs from other design approaches in outcomes in that it is always centred on a social narrative which highlights a social problem through the medium of design. SD projects are often presented as design proposals in the form of product designs, sketches, exhibitions, novels, and films (Shanokprasith, 2020). The Double Diamond model developed by The Design Council (Ball, 2019) visually communicates this general process. The model is divided into four distinctive phases, namely, discover, define, develop, and deliver. Figure 1 depicts how the model maps out the design process which passes from points where thinking and opportunities are as broad as possible (discover and define) to points where they are purposefully narrowed down (develop) to then focus on distinct objectives which are realised as design outcomes (deliver). The Double Diamond model seeks to assist in describing any design and innovation process (Colosi, 2021) and has been applied to SD projects.
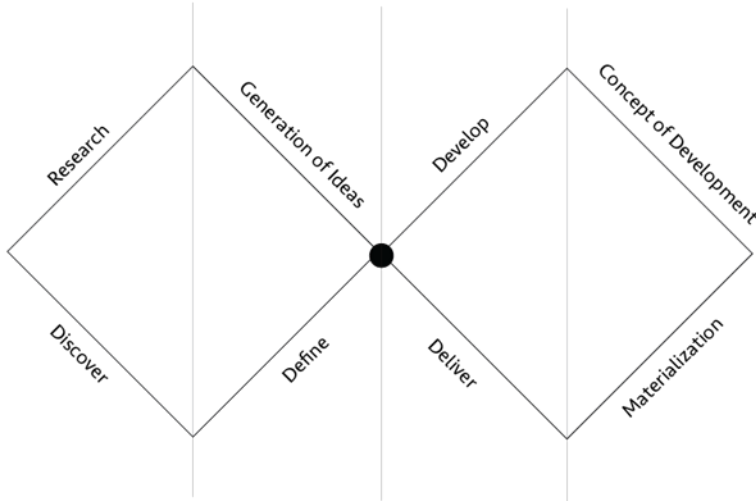
Figure 1: Design Council's Double Diamond model (Ball, 2019)

Dunne and Raby (2013) approach designing for the future by employing a cone model to illustrate variations of potential futures (Figure 2). The cones consist of four potential paradigms which represent different levels of likelihood. The first cone, 'probable', allows for the exploration of probable scenarios. This is the conceptual paradigm that most designers are likely to explore as it illustrates a scenario that is most likely to happen. Dunne and Raby (2013) highlight that design methods taught in design education are best equipped to interpret and express design concepts related to probable scenarios. The 'probable' cone relates to depicting a future that is possible based on the current situation.
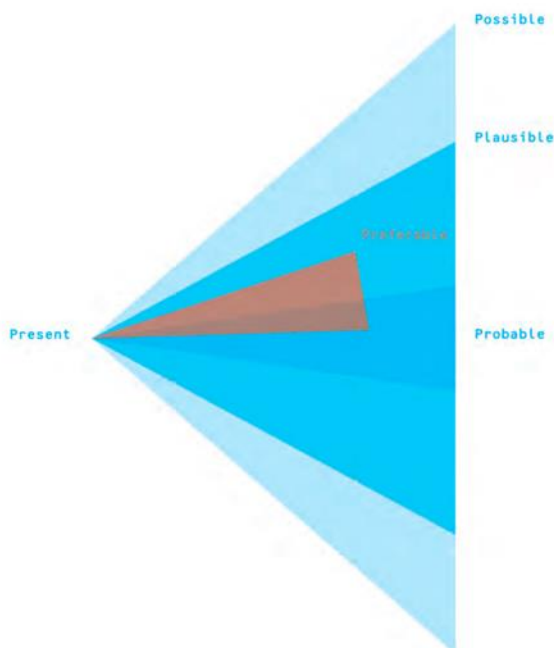

Figure 2: SD Cone model (Dunne & Raby, 2013)

The second cone, 'plausible', comprises future scenarios that explore alternative ways of doing things that best ensure sustainable practice (Dunne & Raby, 2013). The third cone, 'possible',

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represents a key objective of any conceptual design which is to make a connection between the current scenario and the suggested one. This narrative illustrates how the possible scenario that is being speculated arises from the current present-day scenario (Dunne & Raby, 2013). The final cone, 'preferable', intersects with the probable and plausible cones (Dunne & Raby, 2013). The conceptual paradigm of this cone cultivates the exploration of narratives that spark public discussion and debate about the kinds of futures that people want (Dunne & Raby, 2013). This objective can also be realised through using dystopian depictions of the future which illustrate a very bleak picture of how things could be if there is no change implemented in the present scenario. Satire and humour lend themselves to depicting a preferable scenario; even if the scenario is not scientifically possible, the aim is to spark discussion and, subsequently, a change of perception, belief, or attitude towards the social issue in question.

This article explores a selection of student projects, each of which created a speculative scenario arising from one of the four cones unpacked in this section. Applying the SD approach, the project required students to imagine either a probable, plausible, possible, or preferable future 100 years from the present, where gender inequality does not exist. As gender and inequality set the premise for exploration and investigation, contextualising this key concept is necessary.

Gender

Gender is socially constructed and significantly shapes aspects of our behaviours and beliefs in various social settings (Wilchins, 2019). Gender norms constitute actions and beliefs that are widely accepted in communities. The consequence of these norms is implicit biases and gender stereotypes which are perpetuated through society, culture, and media, which then influence governance, policy, and everyday life (Vantieghem, Vermeersch & Van Houtte, 2014). Theories in relation to the construct of gender and understanding the factors that perpetuate gender inequality ground the discussion in relation to the pedagogic interventions presented in succeeding sections of this article. Two relevant theories that aptly substantiate the discussion are the 'gender identity' theory and the 'doing gender' theory of sociology (West & Zimmerman, 1987; Stets & Burke, 2009; Perry & Pauletti, 2011). Gender identity theory is characterised by an individual's intrinsic sense of being masculine or feminine, shaped by societal expectations. 'Doing gender' is a theory that is performed actively, but often subconsciously, through everyday behaviours and interactions infused with symbolic cues.

Gender identity has an influence on how people perceive the world around them and how they behave (Vantieghem *et al.*, 2014. From the perspective of design education, the relationship between how we perceive the world through a gendered lens has implications for the design outcomes and solutions that we conceptualise and create. It is clear that the topics of gender and gender equality warrant greater attention and urgency. The design education sector plays an important role in exposing design students to the possible dangers of designing based on historical gender socialisation, bias, or assumptions that may perpetuate problematic gender stereotypes and discrimination.

The gender pay gap refers to the economic disparities between working men and women, which statistically shows that women are paid considerably less than men (World Economic Forum, 2019). The World Economic Forum points not only to the slow pace of closing the gender gap related to equal pay, but also to the lack of opportunities for advancing women's political empowerment and attaining an education (World Economic Forum, 2019). Through the critical approach of SD, the Fashion Design Theory project reported on here allowed students to speculate and imagine a scenario 100 years from now where gender inequality does not exist. The SD approach offered students innovative and creative ways to visually depict their future scenarios, not confined by what is possible but by their limitless imaginations. In applying SD, students began to explore and cultivate their innovative ability through the combination of theory and design practice.

Cultivating innovative ability through design theory

A very apt and relatively under-researched school of thought is the cultivating of students' innovative ability and skills through art and design theory. Zhang, Wang and Wang (2019) postulate that, at the undergraduate level, most design education emphasises technique and practical components rather than theory. Currently, teaching and learning of design theory focuses on a systematic theory type of understanding of knowledge. Zhang *et al.* (2019) argue that for design educators to provoke and cultivate design students' innovative ability, the traditional (singular) approach to teaching theory needs to be changed to one where students engage in a combination of theoretical design knowledge and professional design practice.

Institutions of HE, and specifically the teaching of design education, should innovate teaching methods constantly to cultivate students' theoretical and critical thinking ability and enhance the capability of creative innovation and application (Zhang *et. al.*, 2019). Design is a discipline that

needs to evolve over time through innovation, creativity, and connection to society. The approaches of critical design and design thinking have been widely implemented in today's digital and information age in various sectors such as technology, engineering, and the sciences to produce relevant and inclusive products and services (Wang, Wu, Meng, & Luo 2021). Research has also highlighted the appropriateness of critical design in solving and addressing human social problems because, fundamentally, critical design offers practitioners the tools to conceptualise and develop appropriate solutions for people through a human-centred approach to design (Hermann *et al.*, 2016). This article explores a second-year Fashion Design Theory project where students were given an assignment to imagine gender equality in 100 years through a SD lens. Students were required to use their theory and practical design skills to produce two outcomes: a practical design, and a written essay contextualising and explaining their practical design component.

Research Methodology

Data was gathered using secondary data collection in the form of computer-mediated documents (Flick, 2018) consisting of selected students' project submissions via Blackboard, a web-based learning management software system. Collecting documents as qualitative data may include physical or computer-mediated personal documents, artefacts, popular culture and visual documents or images (Moore, 2018). The selected projects consisted of both textual and visual elements. The project assessment criteria required students to first create a visual design using computer-aided-design (CAD) software to depict their speculative scenario. Secondly, the students needed to submit a write-up explaining their visual design concept and contextualising the applicable SD cone.

The article used purposive sampling to select student projects from the assignment titled 'Imagining Gender Equality in 100 Years'. The study population was student work submitted by second-year students from 2020 and 2021 in a Fashion Design Theory module. The author employed action research to analyse the selection of student projects. Action research refers to a qualitative research method whereby educators inquire about their teaching practices, then examine and reflect on the results to improve teaching and learning activities or methods (Crothers, 2021). Through analysing selected second-year Fashion Design Theory student projects, this article reflects on SD and blended learning methods which combine theory and practice.

Ethical considerations were heeded by applying for ethical consent from the Department of Higher Degrees Committee of an institution of higher learning to discuss and reflect on selected students projects in this article. When discussing and citing students' projects, participants will be referred to as Learner A or Learner B to ensure their anonymity. Furthermore, any names or personal information have been blacked-out from the student projects.

Findings and Discussion

The findings are categorised and presented below according to the four cones of the SD approach (probable, plausible, possible, or preferable).

Probable

The probable cone depicts a possible future based on the current situation (Dunne & Raby, 2013). Learner A explored this cone by designing a shirt concept that makes use of artificial intelligence (AI) technology that affords the wearer autonomy over how they choose to express and explore their gender identity. Learner A referred to the shirt as the Self-Aware Gender Identity (SAGI) shirt (Figure 3). The design concept explores a probable future where technology and fashion are combined to create a shirt that has AI sensory detectors, which are activated once in contact with the wearer's skin woven into the yarns of the fabric. This contact allows for the technology to detect, interpret, and influence the human's emotional and psychological state in relation to the chosen t-shirt and the gender label that comes with it. Wearing the shirt will create a temporary psychological shift in which an individual will assume the existence of that gender label or identity. The SAGI shirt is explained in the written essay component as an emotional experience and expression that allows the wearer to determine their gender identity based on the emotional and psychological prompts when the AI technology comes into contact with the skin, causing either a positive or negative association.
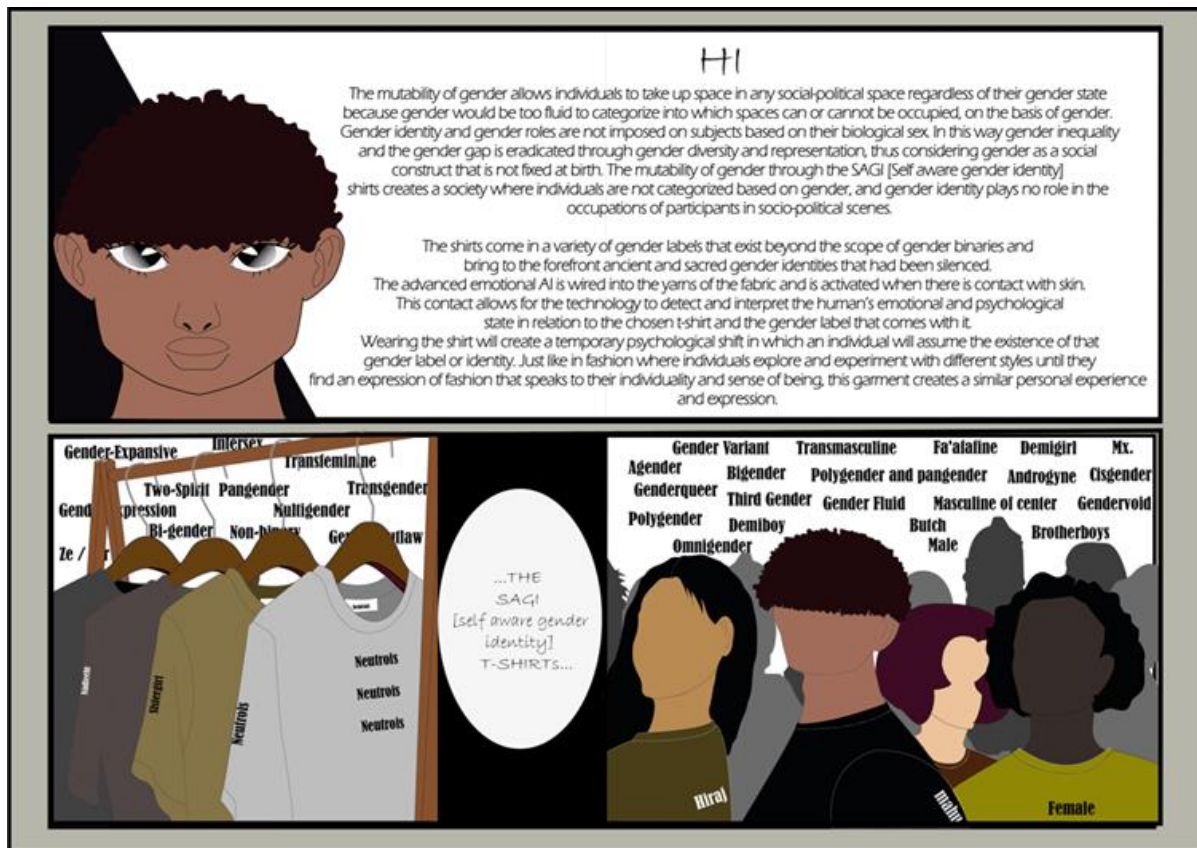
Figure 3: Learner A Self-Aware Gender Identity (SAGI) shirt

The design was created using Adobe Illustrator and Photoshop and relevant CAD drawing techniques and practical skills. The concept of this speculative scenario met the assessment criteria in clearly articulating the concept in relation to the SD approach. The probable cone is described as a conceptual paradigm that design education practice and pedagogy traditionally explore (Dunne & Raby, 2013) as the design outcome of an imagined future that is realisable. The design concept of Learner A considers how gender is socially constructed, and their design concept exploration could be considered as a critique of society's focus regarding the binary categorisation of gender as simply 'male' and 'female'.

Plausible

The plausible cone explores future scenarios that show alternative ways of doing things that best ensure sustainable practice (Dunne & Raby, 2013). Learner B designed a scenario that depicts the creation and use of a device referred to as the Productivity Pod (PP), aimed at eliminating the gender gap 100 years from now, and maintaining gender parity (Figure 4). The Productivity Pod pays and rewards employees according to their hard work, diligence, and abilities, with no hierarchical power or gender biases. The Productivity Pod serves as a robotic ATM that interprets the user's daily

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working productivity based on the energy stored in the blood cells of the user. By scanning a person's hand with a hand scanner, the PP can determine one's productivity, mood, and overall working experience, by allocating a daily Productivity Percentage (P%). This P% is an indication of the employee's daily productivity and subsequent income. Gender plays no role in the calculation of an employee's remuneration and no other human can regulate or manipulate the calculated income, as body cells are the only determining factor of their earnings. The student's written component highlighted that the P% is also the only factor that determines one's position in the workplace.
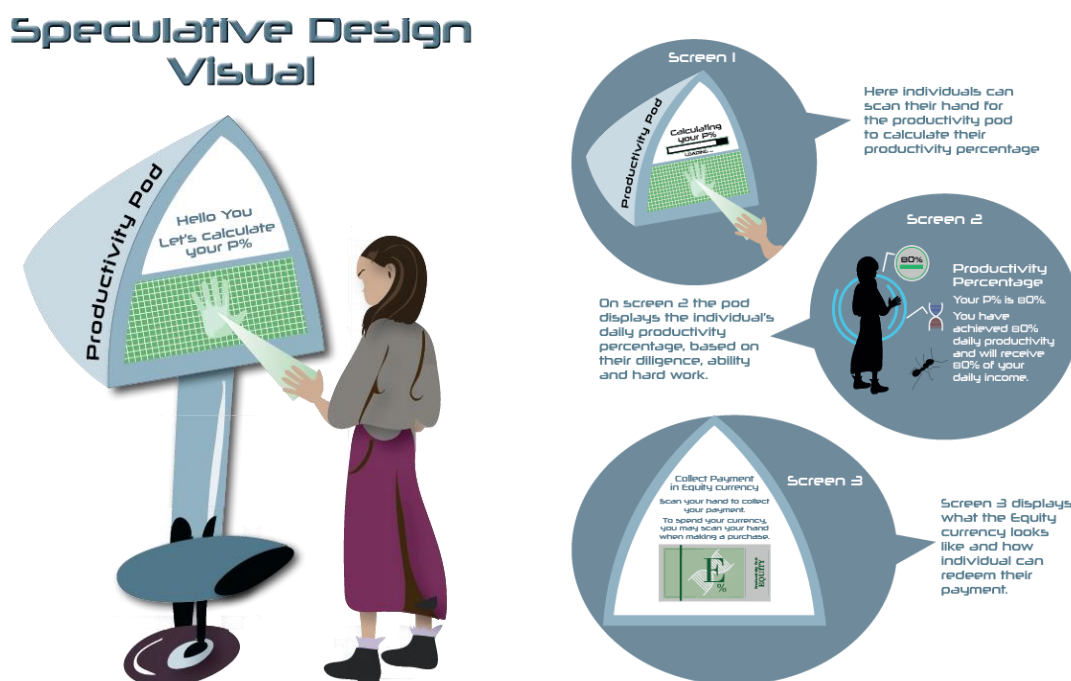
Figure 4: Learner B Speculative scenario: The Productivity Pod

Learner B made use of Adobe Illustrator in creating their visual design. The outcome applied the plausible paradigm as it demonstrates a scenario which is proposing alternative systems of measuring success and the work ethic which are not reliant on one's external or physical appearance or socio-cultural location. As a design concept, the visual design critiques the implicit gender biases that society uses to judge and manage individuals. The speculative scenario portrays an underlying message that robotics or machines may be more capable of not being swayed by gender bias and stereotypes and so can change society's perceptions and beliefs regarding gender and work. This scenario successfully explores the approach of SD because by further engagement with the outcomes the viewer may begin to have further questions and begin to change their perspective. This reflection demonstrates a key objective of the SD approach (Gonsher, 2016).

Possible

The possible cone aims to make connections between today's world and the suggested one (Dunne & Raby, 2013). Learner C created a possible scenario based on their experience with filling in personal information on their child's day care centre application form and noticing the rigidity and very traditional format of the required information. The learner's scenario is a depiction of a day care application form 100 years from now (Figure 5). Learner C explains that the name of the day care is "Ingomso Day Care". Ingomso is a Xhosa word meaning tomorrow (Glosbe, 2019) and can also be used to refer to the future. Figure 5 presents the application form, which depicts a future scenario that is inclusive and accommodates all parents and family settings. The personal information has been blacked out to ensure the anonymity of the student. The student communicated in their essay that there was consideration in including a section in the form for a second mother, a second father, and a section for "other", as blended families do exist. The parts highlighted in orange are the new additions as depicted in Figure 5. The form allows the parent to select if their child has their mother's surname or both parents' surnames to accommodate various family dynamics other than the traditional nuclear family.

Figure 5: Learner C: Speculative scenario: Ingomso Day Care application

The visual design created by Learner C demonstrates a scenario of an identified problem based on personal experience and an experience that is informed by a South African context of single motherhood and some of the obstacles such mothers face. The visual design concept, in comparison

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to those of Learners A and B, references the visual presentation of a general application form rather than a unique visual design development. By referring to application forms as design influence for the visual component, the student has applied fundamental practical design development exploration. This met the assessment requirements of the evidence of design development, design research, and creative thinking.

Preferable

The preferable cone intersects and lies within the probable and plausible cones. This is the cone of preferable futures (Dunne & Raby, 2013). Learner D refers to their preferable design as Equalihair, a combination of the words 'equality' and 'hair' for a haircare brand that strives for equality between genders (Figure 6). Learner D explains that the hair is a metaphor for the mind and that the product serves two purposes. The first purpose is for the product to alter the mind and to make the person using it rid their mind of toxic behaviour. The second purpose is for the user to be educated about these ways of thinking through reading the packaging, which is thought-provoking. The design concept regarding altering the mind can be seen as a placebo effect where its benefits lie in the shifting of beliefs or thoughts related to gender equality when using the haircare brand. The preferable cone allows designers to use satire or humour to convey a narrative and message. The packaging reads as a satirical commentary to provoke a change in perception on the topic of gender inequality. For example, the text refers to "Toxic masculinity clarifying shampoo – recommended as an essential in the starter kit on the path to becoming a better cis-hetero male".

The visual design was created using Adobe Photoshop, consisting of the sourcing of relevant images and presented as a product communication about Equali Hair. The style in the writing of the product communication references the aspirational marketing style of writing, where the product is marketed as something that will improve or add value to the consumer's life (Hunter, 2012).

Reflection on blended teaching and learning practice

All the selected projects made use of CAD software in the creation of their speculative scenario, referred to as the visual in the project brief. The project ran over the course of seven weeks. Due to Covid-19, all students were given remote access to the Adobe Creative Suite, allowing them to design using Adobe Illustrator and Photoshop for this project. The first three weeks were dedicated to introducing the key themes of gender and SD through virtual live lectures or pre-recorded lecture

videos. In the third week, students had a one-on-one virtual consultation with the lecturer on Blackboard to discuss their initial design concept and receive feedback. This exercise contributed to students being able to think creatively. Furthermore, the one-on-one virtual consultations allowed the lecturer to gauge the levels of engagement and research the students had put into their concepts. The project followed the same weekly planning in both 2020 and 2021. The students had experience with CAD techniques, so the focus was on the conceptual design development. On reflection the author is considering extending the project by two weeks to allow sufficient time for execution and a follow-up consultation before final submission.

Figure 6: Learner D Speculative Scenario: Equali Hair

The project was conceptualised and facilitated during Covid-19. The consequent shift to blended learning and finding alternative ways of teaching and interacting with the students offered the module an opportunity to develop the students' innovative abilities through the approach of SD. In addition, students engaged with the Fashion Design Theory module from a different learning approach, where the research and literature culminated in visual design concepts. Students who did not have access to devices that allowed for optimum use of the Adobe Creative Suite were encouraged to explore software or applications that were accessible to them. The visual design by Learner C is an example of this.

Conclusion

This article demonstrates that critical design methods applied to teaching and learning offer unique and innovative ways of designing solutions for social problems. The project was facilitated in a Fashion Design Theory module. The module's purpose is to teach the appropriate methods and theories for students to interpret key concepts in fashion and design as a social phenomenon. Furthermore, the module's purpose is to conduct research in key concepts such as gender through the application of design theories, methods, or approaches. The exploration of gender through the critical design approach of SD met the module's purpose and offered students a learning opportunity where practice (designing a visual scenario) and theory (the contextualising and explanation of the visual) were integrated and assessed as a whole.

The assessment criteria of the visual speculative scenario required that students consider the design concept by following a process of design development that reflects research and investigation of the problem, creative thinking, and the development of individual style. This allowed students to explore concepts that were relatable to them and the communities of which they were a part. The visual design by Learner C is an example of how their identified problem of day care centre application forms based on their experience reflected societal gender biases and stereotypes that inform systems and institutions, such as a children's day care centre application form, or the type of language used to advertise a male hair care product created by Learner D. These visuals depict and demonstrate how perceptions are modelled by gender identity and one's perception of gender. In addition, the students' visuals also demonstrate how society attributes gender to everyday behaviours and actions.

The SD approach also offered students the learning opportunity to create through multidisciplinary design practice, which is an intrinsic part of critical design methods. Students were not required to create a speculative scenario with a fashion discipline underpinning. This is reflected in the visual design concepts of Learners B, C and D. The approach of SD fosters imagination and creativity, and the theme of depicting a future 100 years from the present required students to think innovatively. Furthermore, the project created an opportunity for students to apply their conceptual and practical skills in developing their speculative scenarios. This opportunity within the project fosters life-long critical learning and application of knowledge.

The facilitation of a design theory-based project with a practical component contributes to the transformation of design education which will foster creative and innovative expression in the approach to thinking about social problems. Literature has highlighted the value in aligning critical design approaches such as design thinking towards achieving inclusive and relevant solutions to socio-economic and environmental issues. The application of critical design was demonstrated in this article through the analysis of selected student projects which conceptualised speculative future scenarios around the social issue of gender. The findings demonstrate a successful outcome of the project's assessment criteria against the selected student assessments. Research is a key component of the Design Theory module criteria, whereby students are expected to understand various topics through reading relevant literature to write on and contextualise research topics. Hence, the third assessment criterion of the visual design project expected students to be able to successfully contextualise their SD visual and ensure that there was a correlation between the write-up and the visual design.

The analysis and reflection of teaching and learning methods offered an opportunity to examine and reflect on the results to improve teaching and learning activities or methods, specifically how the combination of practice and theory allows students to apply design approaches and to be able to explain and contextualise the design concept. As design education is grounded in practical design development and also in conceptualising solutions to researched problems through theory, facilitating a project that allows students to explore both components is a beneficial way to incorporate critical design where the traditional outcomes are usually text-based in the form of an essay. The article contributes to the theme of transforming assessments for student empowerment which includes fostering critical and life-long learning.

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