defsa

Design Education Forum of Southern Africa

17th DEFSA CONFERENCE

21-22 September 2023

A hybrid conference hosted by

STADIO

HIGHER EDUCATION

VULINDLELA

making new pathways

CONFERENCE PROGRAMME

Welcome!

A hearty welcome to all participants to the 2023 DEFSA Conference hosted by STADIO – Centurion Campus. This year the title of the conference is VULINDLELA, finding and making new pathways for design education and moving forward socially and environmentally within the Southern African context.

This is the first conference that is in hybrid format, which allows for physical and digital interaction, something we established at the last conference, we so dearly need. As in the past, the next two days will celebrate new and emerging research by educational practitioners within higher education design contexts in South Africa and aims to reflect on current design education practices that foreground new and relevant research to advance the development and recognition of design education within the southern African context.

The purposefully crafted conference theme aims to celebrate the broad conceptual theme of moving forward by exploring new pathways open to interpretation and guided through various subthemes. By foregrounding new relevant design education research, we seek to contribute towards discourse and research within a South African context. Furthermore, the conference aims to offer a space to explore student perspectives regarding design education practices within the classroom, curriculum, and broader learning contexts.

The five sub-themes focus on what we are DOING that is new and innovative, how we teach and our students LEARNING in this ever-changing design education landscape. We also hope to gauge how MAKING in teaching and research infuses what we do and how we think. Through CONNECTING we hope to find new pathways and by CARING we emphasize and explore our human-centered approach to humanity and designing for life.

As DEFSA, we are super excited to present this conference to you and hope that you will find your new pathways that will enrich your teaching and research!

Desiree

Welcome to our keynote speaker: Pfunzo Sidogi

Pfunzo Sidogi is an NRF-rated Associate Professor and Head of the Department of Fine and Studio Arts at the Tshwane University of Technology. He is Chairperson of the Sasol New Signatures Art Competition and serves on the council of the South African Visual Arts Historians organisation and the board of the Association of Arts Pretoria. His newest books are *Mihloti Ya Ntsako: Journeys with the Bongi Dhlomo Collection* (Pretoria: Javett Art Centre at the University of Pretoria, 2022), joint-winner of the 'Best Non-Fiction: Monograph' at the 2023 Humanities and Social Sciences Awards, and *The De-Africanization of African Art: Towards Post-African Aesthetics* (New York: Routledge, 2022), which he co-edited with Denis Ekpo.

Thank you to the following sponsors:

Programme

DAY 1: THURSDAY 21 SEPTEMBER 2023

Time	Session 1	Session 2
8:00 – 9:00	Conference registration/Tea	
9:00 – 9:30	WELCOME ADDRESS DEFSA president: Desiree Smal	
9:30 – 10:25	KEYNOTE ADDRESS Pfunzo Sidogi	
10:30 – 11:00	Tea time	
11:00 – 12:00 Session 1 LEARNING AND CARING	LEARNING Session Chair Terence Fenn	CARING Session Chair Safia Salaam
	Undergraduate design students' experiences of decision making in the framing stage of a collaborative design project Susan Giloi, Mary-Anne Potter, Hein Liebenberg, Esther Martins Annika Dehrmann	Towards Empathetic Design for Social Change: An Autoethnographic Reflection on Teaching and Learning Practices in a Communication Design Project Tsholofelo Matome Tumishang Sekhu
	Humanising online education: A practical approach to teaching theory online Alexandra Balkanska	Exploring the need for Fashion drawing skills training amongst unqualified Fashion entrepreneurs in the Emfuleni Local Municipality. Le-nika Strydom
	Who authors learning? Teaching design with intelligent technology Heather Goode, Mary-Anne Potter	The spectrum of disability representation in new media Ilhaam Khan
12:00 – 12:50	Lunch	
13:00 – 14:00 Session 2 DOING AND CONNECTING	DOING Session Chair Anneke de Klerk	CONNECTING Session Chair Kimberly Bediako
	A neo-pragmatic approach to remote (id)entity performance: Designing an operated performing object character model Mienke Fouche Janine Lewis Laetitia Orlandi	Buna Africa: The Participatory Design of an Online Aquaculture Platform Adrie Haese Christa van Zyl Nyiko C. Mabasa Qurban Rouhani
	Communication Design Industry – in search of unicorns or new pathways? Ria van Zyl Lizette Carstens	
	South-African Futurism: Students' vision of future aesthetics in Fashion Design Terese Potgieter Diandra Schreuder James Barrett Poulsen	Integrating design concepts learned in the classroom with real-life issues: A case study Tsekelo Patrick Moremoholo
Comfort gap 5min		
14:04 – 15:05 Session 3	MAKING Session Chair Tsekelo Patrick Moremoholo	LEARNING Session Chair Monica Di Ruvo

MAKING AND LEARNING	Designing Furniture for the Future: Integrating Advanced Digital Technologies into the Design Process *Pia McFindlay*		Celebrating Afrikanness: Proposing a design approach that foregrounds Afrikan cultural identity and Afronowism *Bruce Cadle*	
	Re-storying practice-led design research *Karolien Perold-Bull, Kirsten du Preez Hesté Coetzee*		Intersections of Circular Design *Cobus Bothma*	
	Publish or parent: reflective, creative work on the cost of parenting for female academics pre-, mid- and post Covid-19 *Christa van Zyl*		Textualising visual stimulus: a visual methodology to encourage innovation in fashion design education *Mieke Janse van Rensburg*	
15:10 – 15:25	**Tea time**			
	Session Chair Ria van Zyl		Session Chair Desiree Smal	
15:25 – 16:45 Session 4 Short Papers/ Post Graduate presentations	Concept Maps as a teaching strategy for Higher Certificate design students studying historical fashion.	Anel van Rooyen	CE/I-Doc project development for Community Based Participatory Research: Towards a Blended Approach	Anneke de Klerk
	Creative industry practitioners' response to the emerging concept of Graphic Heritage	Celeste Mckenzie, Yolandi Burger, Robert Harland	The need to redesign protective clothing for women: A neglected gender in the South African mining industry	Omphile Mathuloe
	Draw to explore: the development process of an online drawing studio to support design curriculum	Marili de Weerdt	Design for Social Innovation: The Role of Professional Bodies in Preparing Students for Networked Environments and Cross-Border Collaboration in Interior Design Education.	Xolisa Ndovela
	"What does this architecture mean for where I come from?" Re-centering the African student in the curricula-design studio	Nomalanga Mahlangu, Jabu Makhubu	Inclusive quality education in South Africa: Using Art and Design to investigate the primary school classroom as semiotic landscape	Meike Hall Karolien Perold-Bull
	COVID-19 curse or blessing? Opportunities for work-based learning in graphic design education in South Africa	Lindelihle Bhebhe	Hybridity is the future of design education	Thato Radebe
	The South African Learningscape	Sonali Chetty	Centering language in design-led research	Simphiwe Mlambo
17:00 – 18:00 NEW PATHWAYS conversations with DSAC, PADI, IQOQO, Apple Session Chairs Mo Jogie & Safia Salaam				
18:00 – 20:00	**Cocktail event**			

DAY 2: FRIDAY 22 SEPTEMBER 2023

Time	Session 1	Session 2
8:00 – 8:30	Arrive/Tea	
8:30 – 9:30	For all DEFSA members AGM Teams link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YWQ3MWE0YjAtYmUwNC00NTgwLWJmNzctNTVhZTYxMTFiNDI0%40thread.v2/0?context=%7b%22Tid%22%3a%22fa785acd-3tief-41bc-8a94-89841327e045%22%2c%22Oid%22%3a%22ti531acd0-0d31-4087-a21d-9fti0b4bb504ti%22%7d	
9:45 – 10:00	Monica Di Ruvo NEWS FLASH The Design Journal Linking to Cumulus	
	Comfort gap 5min	
10:05 – 11:05 Session 5 LEARNING AND DOING	LEARNING Session Chair Kimberly Bediako	DOING Session Chair Anneke De Klerk
	Decolonising Speculative Design: A South African perspective on Design and Futures Thinking Hadassah Myers	Fostering Design Students' Soft Skills Development for Workplace Success through Online Problem Based Learning Franci Cronje, Carla Enslin
	Appreciative Inquiry in Design Research Elana van der Wath Ilse Prinsloo	Speculative Futures: Questioning Nanotechnology and Sustainable Development through Industrial Design Pedagogy Oratile Rose Mokgatla Ashton Margarete Moseley
	Flipping the Script: Using Artificial Intelligence to design assessment rubrics Lizette Carstens, Maretha Geyser, Christiaan Graaff	Reflecting on lessons-learned for BIM implementation in design curricula in South Africa. Marisca Deminey, Amanda Breytenbach
	Design Lecturers' Pedagogical Approach to First Year Practical Studio Session during the rapid transition to Online Learning Ronmari Roux, Jacqueline Batchelor	The Digital Supervisor: key to access or shortcutting research? Ryna Cilliers Veronica Barnes
11:10 – 11:30	Tea	
11:30 – 12:15 Session 6 CONNECTING AND CARING	CONNECTING Session Chair Safia Salaam	CARING Session Chair Tsekelo Patrick Moremoholo
	An Exploration of Co-Creating South African City Brands to Revive the Tourism Industry Post a Global Pandemic Sally Sabre, Yolandi Burger	Higher Education: cultural agent addressing consumer demand in creative fashion economy Elizabeth Kempen
	It's a zoo in there - Reflections and case studies from collaboration and participation design with Johannesburg Zoo Edu-centre, 2011 – 2023 Christa van Zyl	A South African approach to aging in place Monica Di Ruvo, Colleen Cocotos

12:20 – 13:00	Lunch	
13:05 – 13:50 **Session 7** **DOING AND LEARNING**	**DOING** Session Chair Monica Di Ruvo	**LEARNING** Session Chair Terence Fenn
	Makers Space/Space Making: Understanding the role of a MakersLab in fostering new creative pathways. *Steffen Fischer*	Bridging the gap between Industry and the lecture hall: small-scale manufacturing machines and tools for experiential learning within the teaching environment *Martin Bolton*
	Physical Meets Digital: Advancing Industrial Design Higher Education through the Incorporation of Projection-Mapping in undergraduate Teaching and Learning *Ashton Margarete Moseley* *Pia Findlay*	Exploring Student Perspectives and Challenges in Engaging with Decolonization in a Private Higher Education Institution in South Africa *Esther Martins*
	Envisioning an effective education system for generation Alpha focused on skills development in the design higher education sector *Anel van Rooyen, Sanri Mostert*	Architectural artisanship skills development strategies implemented through architectural design studio projects focused on process *Victor Mokaba, Francine van Tonder* *Immanuel Nkambule*
Comfort gap 5min		
14:00 – 15:00 **Session 8** **MAKING AND CONNECTING**	**MAKING** Session Chair Herman Botes	**CONNECTING** Session Chair Desiree Smal
	The Integration of Critical Thinking and Digital Manufacturing in Interior Design Product Development *Chiara Croci*	Work-integrated learning (WIL) through hybrid project-based learning for enhanced student engagement and graduate success in fashion education *Heidi Svendsen, Jenna Segal* *Merie Sutherland, Francisca Arabelle Treurnicht*
	Visual Mapping and Meaning-Creation: Making Research Visual for Design-Based Thinkers *Jody Simpson, Naretha Pretorius*	Creative Correspondence *Terence Fenn*
	AI, Alexander, and Architecture *Hermie Delport*	Using 'SLOC' as a co-design inquiry tool into nomadic pedagogy *Ginn Bonsu Assibey, Alettia V. Chisin* *Bruce Snaddon*
15:05 – 15:30	**CLOSING ADDRESS** Incoming DEFSA president: Safia Salaam	
Farewell Tea		

SESSION 1: LEARNING

Undergraduate design students' experiences of decision making in the framing stage of a collaborative design project

Susan Giloi, Mary-Anne Potter, Hein Liebenberg, Esther Martins, Annika Dehrmann

Collaboration is recognised as essential in the process of solving large-scale complex problems and can therefore be observed in both the design industry and in design education. As part of design collaboration, design teams go through a process of framing the design problem, proposing potential solutions and the steps required to produce an outcome. Framing, as originally defined by Schön (1999), provides a method to identify the decisions that a design team takes on their journey to establish potential design solutions. Ideally, for a collaboration to be successful design teams need to arrive at a share frame characterized by a common understanding of the problem, solution and actions.

This article presents a phenomenological study of the decision-making strategies that undergraduate design students apply in framing concepts during an open-ended, short term, intense, collaborative design project. Students from multiple campuses who were studying towards degree, diploma, in the first- and second-year across a range of design disciplines participated in the project. Data was generated through interviews with a small number of students from different groups on two campuses. The data revealed that students described group decision making in terms of positive and negative emotional experiences as well as the source of stress, conflict and negotiation. The negative experiences were primarily linked to conflict caused by a lack of trust, poor communication and uneven workload. Although framing was not explicit, what students described was the struggle to generate and agree on a shared frame. Based on an analysis of student interviews, we propose that certain adjustments to collaborative projects may enhance the learning experience and the design product that students generate. These adjustments include timing the project to accommodate novice design students, explicitly incorporating and addressing the framing process, and including training in soft skills such as team building, leadership and conflict management.

Keywords: collaborative design, decision making, framing, design education, teamwork

Humanising online education: A practical approach to teaching theory online

Alexandra Balkanska

During 2020/1 due to the COVID-19 pandemic education has had to adapt to a predominantly online learning environment as part of an emergency response strategy that replaced the conventional Face-to-Face (F2F) student interaction. Fueled by the Fourth Industrial Revolution (4IR) we are now steadily moving towards a hybrid learning environment. The overall notion has been that within the crisis there are also opportunities to evolve, adapt and make new pathways. However, most local institutions currently rely on a blended method of lecture delivery, which is not as radical. The study was based on a previous paper submitted and published in 2021 titled: The role of student-staff partnership and collaborative learning in Interior Design education. The 2021 inquiry concluded with a proposal for pilot lectures that were revised and implemented during academic year 2022 in the Interior Design (ID) Department of a private design college in Johannesburg, South Africa. The 2021 study focused on finding strategies that motivate for student-staff partnership, collaborative learning, and Reciprocal Peer Tutoring (RPT) in the theory subject of Critical Studies (CS) within a predominantly online learning environment in an effort to further stimulate student engagement and participation. The Second Phase (2022) focus was on testing the above-identified strategies as well as the Project Planners developed for ID1 & 2 towards the end of 2021. Those included shorter lectures; group work and peer review; interactive tutorial sessions and online discussions; and a

variety of media files. A valuable contribution to this paper remains the study and online publication, Responding to the necessity for change: Higher education voices from the South during the COVID-19 (SU 2021). According to Stellenbosch University (SU 2021), humanising education whilst encouraging ethics of care and digital wellbeing are paramount to the transition to hybrid education. Throughout academic year 2022, revised pilot lectures were implemented during Terms 1, 2, 3 & 4. Observations, anonymous student surveys (Terms 2, 3 & 4) and separate focus groups with ID1 & 2 students were conducted. Some of the main conclusions include the use of a digital collaboration platform during class discussions; data light methods, various media; setting mini-weekly deadlines; teamwork and presentations; site visits; guest lecturers; learning from making mistakes; empathy and understanding. Moving towards a hybrid model of education, it is important for a theory subject such as CS to have both online and F2F sessions. Online sessions remain exclusively online, whilst F2F can be both in order to accommodate online students.

Keywords: hybrid learning, ethics of care, humanising pedagogy, digital wellbeing, student engagement & participation, group work, peer review and language support

Who authors learning? Teaching design with intelligent technology

Heather Goode, Mary-Anne Potter

African philosophies of Ubuntu prioritize humanizing the community of learning. Contextualizing Ubuntu within the emerging Fifth Industrial Revolution (5IR) creates a tension between algorithm and the craft of design scholarship. The effect of the 5IR, while being more human-centred, is also unpredictable in terms of how technology replaces or automates human activity. This has led students to use technology tools to shortcut or circumvent activities that result in deep or transformative learning. Within the context of design education, this threatens the aptitudes and dispositions needed for engaging with the design process with the goal of establishing critical and creative authorship. The threat of automation has destabilized learning systems and structures to the point where such authorship holds the possibility of being appropriated by artificial intelligence (AI). The challenge for educators is how do we create the curricula, material and learning activities that interpolate students to actively engage in the processes of learning.

This paper draws on post-structural paradigm as it seeks to reposition the formative debates around the perceived threat AI poses to learning, taking cognizance of the ethical concerns regarding authorship and developing the capacity for creative and cognitive authorship across the various design disciplines. Where AI, such as ChatGPT or Google's Bard, surveys the known in order to respond to queries and seems to imitate to create. However, the requirements of learning activities such as research or creation/design forges a path through the unknown, using technology as a tool rather than as a substitute for human activity. The paper will offer reflection as discourse on how to reorientate one's practice against the cardinal framework of teaching and learning in design education. It concludes that cardinal directions embedded within human-centred learning, Ubuntu philosophy and the criteria for authorship, despite the disruption of AI, still orientate towards the primary goal of student learning.

Keywords: Ubuntu, human-centred learning, design education, authorship

Towards Empathetic Design for Social Change: An Autoethnographic Reflection on Teaching and Learning Practices in a Communication Design Project

Tsholofelo Matome, Tumishang Sekhu

Ubuntu philosophy is based on the premise that Umuntu Ngumuntu Ngabantu(A person is a person because of other people). Ubuntu as a philosophy emphasizes empathy, respect, and sensitivity as core tenets. Ubuntu principles are part of the Design for Social Change teaching philosophy we use in our visual communication design course at a university of technology in South Africa. This philosophy seeks to find solutions that will not only foster aesthetically pleasing and functional creative outputs from students but will also address the root causes of social problems and empower communities to create change that is long-lasting and sustainable.

As academics, we co-created a three-month mental health awareness campaign project with students, a process which forced us to question how much Ubuntu and Design for Social Change philosophies we were really practising in our teaching. As students reflected on their experiences of learning during the COVID-19 pandemic, in the project, we listened and began to realise that we were not as socially aware and empathetic to students' COVID-19 and post - COVID-19 emotional traumas, as we initially imagined.

This paper is an auto-ethnographic examination of the impact of our socio-cultural positions on our teaching practices as visual communication design lecturers. We critically reflect on our experiences in this project and analyse our diverse backgrounds and their impact on our ability to connect with students and their experiences of learning in a COVID-19 context.

We conclude that visual communication design solutions are powerful tools for social change and promoting design activism but that academic socio-cultural contexts may stand in the way of this. We therefore conclude that design projects promoting social change should also promote intentional collaborative teaching and lecturers should consider projects that disrupt their own personal bias as this has an impact on their ability to connect with students and their experiences of learning.

Keywords: Teaching and learning, Communication design, Social change, Collaboration

Exploring the need for Fashion drawing skills training amongst unqualified Fashion entrepreneurs in the Emfuleni Local Municipality.

Le-nika Strydom

Fashion entrepreneurs contribute greatly to the local and South African economy. It is therefore, vital to equip fashion entrepreneurs with necessary knowledge and skills, to ensure the success of their entrepreneurships. Fashion entrepreneurship demands occupation specific skills. Without these skills, client satisfaction levels can decrease, influencing the success of the entrepreneurship. This article aims to describe the need existing amongst peri-urban fashion entrepreneurs without formal fashion-related training, with regard to the possession and utilisation of fashion drawing skills. A quantitative approach by means of interviewer-administered questionnaires was employed to explore this need. Non-probability sampling was used to identify 114 respondents. The study concluded that a need exists among fashion entrepreneurs with no formal fashion-related training, to acquire fashion drawing skills through training. Through the provision of the necessary skills, these entrepreneurs will be equipped and empowered, as it increases their vocational skills, and might have a positive impact on the success of their entrepreneurships. The study recommends

that future training initiatives, either by government or educational institutions, offer training to fashion entrepreneurs without formal fashion-related training with specific reference to fashion drawing skills.

The spectrum of disability representation in new media

Ilhaam Khan

More than 650 million people worldwide suffer from a disability, be it visible or invisible. As a communication designer, I began to question the design of the International Symbol of Access — in particular, how it failed to represent invisible disabilities. As my investigation deepened, I encountered the full range of disabilities represented in YouTube️ advertisements. I purposively selected three YouTube️ advertisements created for Microsoft Xbox️, Consol️ and Toyota️, and within the broader scheme of Disability Studies, investigated how disability is used as a rhetorical appeal to gain empathy and strengthen the bonds between the viewer and brand. The selected advertisements promote three very different brand identities and products, but all feature a person with a disability. The language of media is rhetorical, and when combined with Disability Studies, is useful to develop an improved understanding of how visual and verbal arguments can impact the perception of the disabled. I investigated the appeals, symbols, stigmas, and social meanings associated with disabilities and how they can lead to negative stereotyping. My findings reveal that the selected sample displays a spectrum of narratives: the use of rhetoric as an analytical framework enabled me to move beyond merely identifying negative stereotypes and to engage with a more nuanced reading of the verbal and visual arguments. Consequently, three main models of disability emerged in the rhetoric of the advertisements. Each model represents disability in a different manner, but all three speak to the allure of disability as a device in media advertising that is becoming increasingly popular amongst advertisers.

Notes..

....

....

....

....

....

....

....

....

....

....

....

A neo-pragmatic approach to remote (id)entity performance: Designing an operated performing object character model

Mienke Fouche, Janine Lewis, Laetitia Orlandi

This paper presents an OPO (operated performing object) character model that was designed in a South African context based on the work of theatre maker and artist William Kentridge. Kentridge is an internationally renowned exponent of OPOs in his installations, where he uses his training background in performance and theatre to integrate machine performativity into his works. Within the context of this paper, OPOs are defined as machine or robot performers that are independently performing (id)entities, as opposed to CPOs (contact performing objects) that perform as an extension of a trained human performer. OPOs run the risk of appearing soulless and mechanical due to the lack of physical contact with a human agent. This paper focuses on the anthropomorphisation of the most challenging form of OPOs as non-verbal abstracted OPOs.

The paper documents the design science research process underpinned by neo-pragmatism used to develop an OPO character model for naturalist machine performance. Design research is an interdisciplinary field that draws on insights and methods from various disciplines, including engineering, performance studies, technical performance, psychology, and fine arts. Neo-pragmatism is used to frame the context in which the OPO character model is designed, with an emphasis on communication in design to convey the intent of the theatre maker through OPO character modes.

Purposive sampling was used to identify 17 OPOs developed by Kentridge for performance or art installation. A thematic description was conducted for each sample, and the Degree of Agency Tool (DoAT) was developed and used for analysis.

A positive correlation was observed between the affective input and kinaesthetic output of Kentridge's OPOs. The affective input is the expressions the object is intended to perform, and the kinaesthetic output is the non-verbal communication the object can use to express intention for meaning-making. Against the backdrop of affect, agency, performing object performance, machine performance, emotion theory, and non-verbal communication, the OPO character model was developed. The model aims to help technicians determine authenticity in the anthropomorphisation of OPOs. It depicts four (id)entity levels, each with its own affective input and kinaesthetic output requirements.

This paper contributes to the field of design education by documenting a multi-disciplinary design process used to develop a context-specific model. Multi-disciplinary perspectives allow for a more nuanced and context-sensitive understanding of complex problems. While the OPO character model expands the current knowledge base of performing objects and contributes to the effective performance of OPOs by promoting inclusive character generation. The focus on OPOs provides the opportunity to observe current technological advances and inform theatre makers and designers at large about further and more progressive possibilities for incorporation of performative anthropomorphic characterisation.

Keywords: Operated performing objects, technician, anthropomorphisation, neo-pragmatism, William Kentridge

Notes

Communication Design Industry – in search of unicorns or new pathways?

Ria van Zyl, Lizette Carstens

An integral part of curriculum design is continuously reviewing workplace and industry needs and requirements. International design research and research of a general nature provide some guidance for curriculum developers and lecturers, but research on the local design industry is fragmented and scarce. This lack of available and rigorous research on the local design industry provides a gap for this paper that explores the nature, needs and requirements of the local design industry and the changing career pathways of designers.

This paper focuses on the broad communication, multimedia, digital and experience design fields. It starts with a literature review of the changes in this space to provide a theoretical grounding for the paper. This is followed by a thematic analysis of recruitment adverts collected in 2023 that looks at industry needs, job titles and levels, attributes, knowledge and skills, and the qualifications listed as the minimum requirement. Findings point to a fast-evolving workplace, shifts away from traditional agencies, demand for wide-ranging skill sets, more strategic alignment with business, flexibility and a focus on users. The need to understand users and the ability to conduct research are becoming critical requirements, as well as flexibility and the ability to work in teams. The analysis also highlights inconsistencies in job titles and unrealistic expectations. The contribution of this research provides a snapshot of a fast-changing industry and a baseline for future comparisons that can guide design educators.

Keywords: design industry, communication, digital and experience Design, employment requirements.

South-African Futurism: Students' vision of future aesthetics in Fashion Design

Terese Potgieter, Diandra Schreuder, James Barrett Poulsen

While considering new pathways in design, we envisioned the futuristic aesthetic of fashion in the South African context. Although fashion designers work with complex and multifaceted problems, the cornerstone of good design remains beautiful aesthetics; thus, when imagining the progression of South African design, we start with an investigation of aesthetics.

No one viewpoint can adequately describe South African aesthetics due to the country's multicultural history and makeup. The question of South African aesthetics is thus best researched from the perspective of multiple participants and how they each view their cultural aesthetic based on their heritage. In a student project, we asked what 'South African Futurism' is to gauge students' viewpoints on the future of South African fashion aesthetics from the student's heritage lens. The term futurism, used in the project, means to 'represent a dynamic vision of the future.'

Students were asked to research their heritage through a collection of visual images to present their idea of futuristic South African aesthetics. Students completed a visual analysis of their research using the following elements of fashion design, identified as the big five elements: shape, proportion, texture, design details, and colour. Students applied their research outcomes to a series of futuristic shirt designs that included a textural application.

From the design outcomes produced by the students, a case study was conducted to observe and describe the five design elements as perceived by the students. This paper will present key insights into the future of South African fashion aesthetics based on how the students reimagined design elements from their heritage to envision futuristic South-African fashion.

Keywords: South African Futurism. Fashion Design Aesthetics. Student perspectives. Heritage.

Buna Africa: The Participatory Design of an Online Aquaculture Platform

Adrie Haese, Christa van Zyl, Nyiko C. Mabasa, Qurban Rouhani

Aquaculture has become the fastest growing animal production sector globally, with production in Africa especially, steadily increasing. The move from subsistence to commercial fish farming requires emerging farmers to access technical information and support services. To address this need, the Rural Fisheries Programme, a developmental unit with the Department of Ichthyology and Fisheries Science at University A, South Africa, developed Buna Africa. Buna Africa is an online platform intended to support the development and management of the aquaculture sector by providing fish farmers with technical support and services to assist them to increase production and become more efficient and secondly, providing governments with a means to track production data in their area, and to use this data to inform policy and management decisions. Buna is currently being piloted in Zambia and Malawi. During this process, it was recognised that the design of the platform needed to allow greater access to, and understanding of the content, to enable farmers with low literacy, or limited experience with digital platforms to make optimum use of the platform. For this reason, an interinstitutional and interdisciplinary project was embarked on to address both user interface design and scientific information of the platform, with members of from Ichthyology and Fisheries Science at University A, Graphic Design at the University B and Information Design at the University C. The research is framed using the following questions: What are the current user and stakeholder perceptions of the Buna platform in terms of ease of use, accessibility and understandability, what type of online formats are required to allow easy access to the Buna platform, and lastly, how can the design of the Buna platform allow for easier access, engagement and understanding its content?

Literature reveals that designing for users with low literacy is a balancing act between designing for their needs, without alienating more technologically skilled individuals. Participatory design methodologies are as such recommended as being an effective means of creating digital solutions. Fish farmers from the Vhembe district in Limpopo were purposively sampled for the project as they had been part of the initial development of the Buna platform. Spinuzzi's (2005) participation design phases were used to collectively formulate of the Design Brief for the Buna platform with the fish farmers, to analyse the website and create prototypes and to then collect feedback on the implemented changes. Engagement with the farmers were positive, and valuable, context relevant feedback was received on how the Buna platform functions, and more importantly, how farmers envisage themselves engaging with it. Findings emphasized that access to information, and the ability to create a community of practice were the most valuable aspects of the platform.

More broadly, the paper speaks to how participatory design can be viewed as a strengths-based and proactive way to engage with, and involve local communities in the development of systems that will allow them to actively participate in the 4th Industrial Revolution.

Keywords: Participation Design, Aquaculture, 4IR, Design for Social.

Integrating design concepts learned in the classroom with real-life issues: A case study

Tsekelo Patrick Moremoholo

Community Service Learning (CSL), generally known as service learning, is a method of teaching and learning in which specific needs in the community are combined with learning objectives and goals to stimulate meaningful learning experiences. CSL provides students with opportunities to relate and channel what

they have learned in the classroom to real-life situations in the community. In recent years, there has been a growing interest in integrating CSL into higher education training programmes. This paper aims to discuss the research on CSL in art and design higher education. Even though this approach is accepted and already being employed in some South African art and design higher educational programmes, not much has been done to analyse its impact on the curriculum compared to other fields such as teacher education. As such, this method of teaching and learning has yet to be fully explored in the art and design sector. Some of the challenges for integrating CSL into the curriculum include the placement of community engagement within the academic structures and the limited time available at universities. For the current study, a project brief was developed to assess selected university students' academic and personal experiences towards integrating a community engagement project as part of the curriculum in "a leading South African design education institution". Purposive sampling was used to select 12 students at both the 4th and 5th levels and who were at their exit levels in 2021. Data was collected by means of an online questionnaire that included multiple- choice, open-ended, and Likert scale questions. Feedback from participants shows that integrating CSL in real-life situations enriched and deepened their learning experience. The findings of this study suggest that CSL has potential for exploration and can be an effective tool for personal and academic development for university students.

Keywords: Community engagement; Community Service Learning; Art and Design Education; Real-life situations.

SESSION 3: MAKING

Designing Furniture for the Future: Integrating Advanced Digital Technologies into the Design Process

Pia McFindlay

This paper aims to evaluate how teaching and learning can better quip future designers by integrating advanced digital technologies into the design process. During the continuous unfolding of the Fourth Industrial Revolution (4IR) in South Africa, it is important to consider how to advance design curricular in order to prepare design students for an ever-changing working world. Both the South African Department of Trade Industry and Competition and the South African Furniture Initiative have shown increasing interest in cultivating our local furniture industry. This shows potential for re-imagining the pedagogical approach to furniture design, a traditional avenue within Industrial Design, for a local and advancing industry.

By using practice-based research as a method of generating new knowledge, this paper reports on a second-year student furniture design project undertaken at a leading South African design education institution. The student project focused on designing within the South African context while using advanced digital technologies to lead the design process and final product outcome. While the local context was considered by using available materials or incorporating traditional patterns, this paper focuses on how digital fabrication was used to create new pathways within the design approaches taken during the project. Examples of digital technologies used include 3D printing, laser cutting and AI design generators.

By reflecting on the project outcomes, this paper aims to speculate on how new digital technologies can be effectively integrated into the design process while resulting in context appropriate designs. The paper engages with question such as: As digital technologies grow and evolve, how can they effectively be integrated into the teaching and learning of design? How can design include technological advancements such as AI generated design while mitigating the problematic disruptions they bring? What opportunities does digital fabrication contribute to the process of design and making in a traditional Industrial Design field like the development of furniture?

As the field of design evolves with the growth of 4IR, it will become ever more important to continuously questions how new digital technologies can be converted into useful tools, while keeping social structures,

context and culture at the forefront of design decisions. By examining a student design practice project, this paper proposes new pathways in teaching and learning through practice-based research.

Re-storying practice-led design research

Karolien Perold-Bull, Kirsten du Preez, Hesté Coetzee

In the recent five years, the predominant approach followed in the context of postgraduate research in the field of design at [South African higher education institution] has been practice-led. This reflects [South African higher education institution's] integrated, process-oriented philosophy of design. We regard design as an inherently relational practice that connects people, things, places, ideas, etc. through the integrated and applied use of multiple media formats. We do not focus solely on the outcome of our practice but are rather interested in using our practice to work towards a more just and sustainable future for all.

The research this paper reflects on engages with two specific practice-led research projects done in completion of the [postgraduate degree programme] at [South African higher education institution]; both of which were situated in the broad field of visual communication design. The aim was to gain insight into the kind of structures, skills, and practices that can support and facilitate practice-led design research in the future. Research participants included the two graduates completing these projects and their supervisor. The research was approached from a new materialist perspective and a narrative methodological approach was followed. From this perspective, the cases in question are not merely represented as it unfolded. The projects have been collaboratively re-storied through creative play between image and text to focus on the transformation of future possibilities. It was found that, in the context of practice-led design research, research questions were predominantly geared towards how design practice can reach specific goals all the while also affecting positive change in real-life contexts. Navigating the entangled relationships between theory and practice was a continuous struggle, as was situating the research within generalised and bureaucratic institutional structures. Finding the most effective way to ultimately present each project as a comprehensive, coherent body of knowledge was similarly challenging. Our story demonstrates that there lies value in participation, collaboration, reiteration, conversation and multimodal material and technological engagement. The subtle nuances emanating from our story indicate that postgraduate programmes engaging in design research at South African higher education institutions could benefit from simultaneously incorporating a more narrowly defined disciplinary focus and strategically situating their offering in an extended, transdisciplinary community.

Notes...
....
....
....
....
....
....
....
....

Publish or parent: reflective, creative work on the cost of parenting for female academics pre, mid- and post Covid-19

Christa van Zyl

Despite the change over time in academia's gender profile, educationalists Kelly Bradley and Carolyn Oldham (2020) challenge what they perceive to be the perpetuation of "gendered norms of productivity and the mythical notion of work-life balance". Bradley and Oldham (2020) argue that these concepts "endlessly complicate the conceptualisation and operationalisation of the female academic's success" and take the position that "[w]omen cannot give in to this concept of two separate worlds, which splinters the self". They propose a reflective practice that prompts female academics to "claim our entire personhood, professional and parent, if we are to seek freedom from feeling 'torn' between these spheres".

As a mother, and in response to my sense of feeling 'splintered' and 'torn' between parental, personal and institutional measures of success, I created a series of artefacts that recognises my personhood as a professional and a parent, consciously trying to repair the divide between these two spheres of my identity. This work was displayed in 2022 as part of a group exhibition at a leading tertiary institution. I created three densely designed aprons and a tablecloth imprinted with text and imagery extracted from to-do lists in notebooks — from 2019 to 2022 — as well as drawings by myself and my young daughter. The lists served as a reflective record of pre-pandemic, pandemic and post-pandemic times and proved to be both poignant and sobering. In addition to the realities of parenting from home, they encapsulated exhausting 'invisible' professional responsibilities, such as supporting first-generation university students, departmental housekeeping, community engagement, extensive teaching hours within an under-staffed department and some dogged attempts to find focused time to engage in research. The printed artefacts were displayed in conjunction with three-dimensional 'creative outputs' constructed with my daughter. Viewed as a whole, the installation evoked the struggles experienced by academic mothers worldwide when two separate identities, academic and parent, were unexpectedly forced to fill the same space during the Covid-19 pandemic.

As an extension and explication of the gallery installation, this paper explores the challenges of female academics who are also mothers and who argue for a more empathetic perspective on the impact of hybrid teaching during the Covid-19 pandemic. I reflect on my creative output and my personal experience in my roles as a dedicated mother, academic, teacher, and partner of a medical practitioner who is a frontline worker. Whereas recent international studies primarily focus on the roles and expectations of female academics during the Covid-19 pandemic, my contribution sets out to engage with this conversation specifically from a South African design lecturer's point of view within the incredibly harsh South African lockdown. It provides insights gained from my creative work concerning greater inclusivity and support within academia.

Notes..

....

....

....

....

....

....

Celebrating Afrikanness: Proposing a design approach that foregrounds Afrikan cultural identity and Afronowism

Bruce Cadle

Starting in the 1990s in South Africa, according to Sauthoff, designers in general and graphic designers in particular have sought to create an inimitable design style that is imbued with a recognisable (South) Afrikan cultural identity. This is in reaction to the entrenched hegemonic influence of Euro-American design practices. Names like Saki Mafundikwa, Karabo Poppy, Garth Walker and Sindiso Nyoni are on the influential list of designers bracketing a so-called African design aesthetic. How is this 'aesthetic' related to design that is culturally significant, according to Twigger Holroyd, and that lends authenticity to an artifact, positioning it as representative of Afrikanness?

This paper considers whether the notions of Afrikanness in design can be included in the learning and teaching processes of graphic design, while at the same time avoiding pastiche and appropriation. The intention is not to suggest that there is a 'silver bullet' solution or formulaic approach to designing that results in an Afrikan 'feel'. Rather, that the methodology employs Afronowism as an attitude to design that considers several ways of knowing Afrikanness, and consequently, embedding that in ways of doing. This is achieved by seeking to identify the 'essence' of cultural identity that embodies an Afrikan sensibility and acknowledges cultural diversity.

The methodology includes a multivalent approach that uses Rose's "Visual Methodologies", Hall's "negotiated reading", and Pauwel's arguments for visual analysis and selective sampling that recognises the importance of the author/designer's subjectivity in understanding the sample and analysing it. The findings allow for the development of criteria which can then be used as a teaching strategy for a design brief and engages in a design process that is participatory, culturally sensitive, ethically aware, and humanistic. Together with visual and cultural studies this approach to designing artifacts and visual communication creates a space of criticality and questioning for students that centres on recognition of the diverse aspects of visual culture underpinning Afrikanness. Although the proposal posits graphic design and visual communication as the vehicle of learning, it was conceived with the broader design discipline in mind and so serves all streams as a method.

Keywords: Afrikanness, Afronowism, visual methodology, graphic design, teaching strategy

Intersections of Circular Design

Cobus Bothma

The multifaceted structure of higher education often limits full integration of design and construction teaching in schools of architecture, but the potential for a greater intersection of these knowledge bases does exist. Design education in the architecture studio is typically taught through a linear process, where students are required to produce a concept design, followed by a series of design iterations and lastly, technification of the design. Similarly in practice, this process is linear, starting with a design phase followed by a construction phase. In both scenarios this process leads to a predictable design outcome. Contrastingly, a circular design process has the potential to allow for a more open-ended negotiation with material, technology, process and making.

David Pye's concept of risk in The Nature and Art of Workmanship reflects these possible outcomes, whether predictable or exploratory, by situating them on a scale between workmanship of risk and workmanship of certainty. In addition to tools, techniques and materials to evaluate the level of risk in

making, this paper suggests that design process is also an indicator of risk. Some architectural practitioners have embraced a workmanship of risk approach by following existing circular design processes or establishing their own circular processes. This paper will highlight the work of three contemporary South African practitioners who, by employing a design process that is circular and by working in a manner that is often continuous and collaborative, have clearly expressed signs of experimentation and a material consciousness in their built work.

An understanding of how practitioners, through the implementation of a circular design process, have been able to establish these moments of intersection between design and construction earlier, and continuously throughout the design and construction process, can assist educators in transferring this approach to the classroom. The value of this improved intersection will be, improved pedagogy that limits the silo effect, fore fronting building technology as a design generator, and creating better and more adaptable designers that can cope with new futures.

Keywords: circular design, design process, design education, intersections, workmanship or risk

Textualising visual stimulus: a visual methodology to encourage innovation in fashion design education

Mieke Janse van Rensburg

Fashion design and its pedagogy is fundamentally centred around visual representation. A core conceptual component of the fashion industry and design education is mood boards, concept boards or trend boards, which purpose is to communicate design direction or intent and to provide a starting point for the design process. Content for these boards relies predominantly on visual data; due to the internet and social media, students and designers have unlimited access to visual stimulus. Reflecting on personal design constraints and teaching experiences in fashion design at a leading South African design education institution, it became clear that the influx of visual data, both through the use of these boards and freely available images on social media, affects original design thinking. The overwhelming quantity of visual stimulus tends to encourage reproduction rather than fuel innovative design. This often occurs sub-consciously as students are immersed in the content, without critically distilling what is seen. Furthermore, it fosters a sense of inferiority among students, as they often cannot reproduce the same quality of design as seen online.

To address this issue, an alternative method of using these boards and/or visual stimulus is proposed. Traditionally, fashion design education requires students to develop designs directly from these boards. The proposed method requires an intermediate step, where the visual data is analysed based on design elements and principles and converted to textual descriptors that become the criteria for designing. This textualisation of images, aims to provoke design ideas, removed from the initial visual stimulus. This proposed method does not only aim to increase innovate design practice, but simultaneously develop critical engagement with visual data and enhance visual literacy. As students become more skilled in translating, interpreting, analysing and understanding visual stimulus, this method could become intrinsic to their design practice and lead to more innovation, originality and individualised/personalised designer signatures that avoid the trap of reproduction and imitation.

The accessibility of influential and inspirational images should be celebrated, especially considering the rate at which technological advancements are being developed, however how designers and students utilise these images needs consideration. By introducing a simple method within the way students use visual data, critical thinking can be developed, visual literacy improved, and innovative design encouraged.

Keywords: fashion design education, textualising visual stimulus, visual methodology, visual literacy, innovative design, mood board.

SESSION 4: POSTGRADUATE/SHORT PAPER PRESENTATIONS

Session Chair Ria van Zyl		Session Chair Desiree Smal	
Concept Maps as a teaching strategy for Higher Certificate design students studying historical fashion.	Anel van Rooyen	CE/I-Doc project development for Community Based Participatory Research: Towards a Blended Approach	Anneke de Klerk
Creative industry practitioners' response to the emerging concept of Graphic Heritage	Celeste Mckenzie, Yolandi Burger, Robert Harland	The need to redesign protective clothing for women: A neglected gender in the South African mining industry	Omphile Mathuloe
Draw to explore: the development process of an online drawing studio to support design curriculum	Marili de Weerdt	Design for Social Innovation: The Role of Professional Bodies in Preparing Students for Networked Environments and Cross-Border Collaboration in Interior Design Education.	Xolisa Ndovela
"What does this architecture mean for where I come from?" Re-centering the African student in the curricula-design studio	Nomalanga Mahlangu, Jabu Makhubu	Inclusive quality education in South Africa: Using Art and Design to investigate the primary school classroom as semiotic landscape	Meike Hall Karolien Perold-Bull
COVID-19 curse or blessing? Opportunities for work-based learning in graphic design education in South Africa	Lindelihle Bhebhe	Hybridity is the future of design education	Thato Radebe
The South African Learningscape	Sonali Chetty	Centering language in design-led research	Simphiwe Mlambo

Notes...

....

....

....

....

....

....

....

....

....

....

....

....

....

....

Decolonising Speculative Design: A South African perspective on Design and Futures Thinking

Hadassah Myers

Speculative Design is being promoted as a critical approach to Design. Speculative Design does not attempt to predict the future. Instead, it attempts to create debate and discussion about preferable futures (Dunne & Raby, 2013). Design educators and practitioners from the Global South have become increasingly critical of Speculative Design practices (Martins, 2014). This paper provides an account of a Speculative Design project set for final-year students pursuing a degree in Digital Media Design at a leading South African design education institution. The paper describes the project brief, the purpose of the assignment and the intended outcomes. Three student designs are presented and explored using a textual analysis methodology. The paper then draws on Anticipatory Systems Theory to unpack how Speculative Design education and practice can be augmented with alternative approaches the way Futures are used.

Keywords: Speculative Design, Anticipatory Design, Decolonisation

Appreciative Inquiry in Design Research

Elana van der Wath, Ilse Prinsloo

In the 2021 publication, 'The Ontology of Design Research', Miguel Angel Herrera Batista argues that the ongoing development of postgraduate programmes in design has led to a growing focus on establishing the field of inquiry as an independent and differentiated research area. For design research to contribute to disciplinary development, researchers need to focus not only on procedural rigour but also on ensuring that the philosophical foundations of selected methodological approaches align with the ontological reality of design. It is, therefore, necessary to encourage postgraduate students to investigate both familiar and novel research methodologies in the search for appropriate approaches to design research projects.

Appreciative Inquiry (AI) is a research methodology developed in the late 1980s to reveal often overlooked, positive aspects of experience. AI is grounded in the theory of social constructionism. It focuses on understanding processes and experiences, and on creating alternative opportunities and ways of viewing situations and problems. AI typically follows a four-stage approach: 1. Discovery (appreciating and determining the best of what is); 2. Dream (identifying what might be and envisioning results); 3. Design (determining what should be and co-constructing change); and 4. Destiny (developing ways to achieve the vision). AI is commonly used as a research tool in fields such as management studies, education, healthcare, and social work, to study and improve the effectiveness of interventions and programs.

The paper presents an MA Design (with a specialisation in Interior Design) research project as a case study to investigate the application of AI as a methodology in design research. The case study illustrates that, although AI has not been used extensively in design research, it offers opportunities to investigate under-researched topics in the design disciplines. AI is especially valuable in areas where processes and strategic thinking may be implicit and not yet formally described. In addition, the method's future-focused, collaborative approach aligns well with the speculative nature of design thinking (ideation & prototyping) and the anticipatory mindset encouraged during the design process. The paper makes recommendations for future applications of AI in design research. The paper postulates that by encouraging students at the Master's level to explore novel methodologies, design researchers, and by extension design practitioners, can gain deeper insight into design processes and build on the experiential knowledge of professionals to expand the theoretical base of the design disciplines.

Keywords: Appreciative Inquiry (AI), design research, interior design, research methods, design thinking

Flipping the Script: Using Artificial Intelligence to design assessment rubrics

Lizette Carstens, Maretha Geyser Christiaan Graaff

Generative Artificial Intelligence (AI) is a key driver of innovation across all sectors and in education has the power to optimise teaching and learning to benefit educators and students alike. However, the increasing prominence and influence of AI in domains previously exclusive to humans, such as design, raises urgent questions about the assessment of learning in design education. Recent writings in the field of design education agree that in the age of AI, educators need to revisit existing assessment practices. Conversations about AI and assessment practices appear to revolve around upholding academic integrity and defining what should be assessed when students can create design outcomes using generative AI. This study flips the script: Instead of focussing on managing students' use of AI to create design outcomes, this study asks: how can design educators use generative AI to facilitate the design of authentic assessment rubrics?

An outcomes-based approach is common in South African design education, and practical projects are used as assessment instruments. The focus of the assessments is for students to practically apply their knowledge and skills in a real-world context. As a result, design assessments lean towards assessing the design process rather than relying solely on the design outcome, therefore evaluating students' ability to articulate the reasoning behind their application of knowledge and skills. Assessments used for practical projects typically use assessment rubrics that features clear evaluation criteria and aims to provide comprehensive feedback to students. Using authentic assessment, a student-centred approach to assessment practices, curriculum designers can effectively mimic the real working environment, align to the principles and dimensions of authentic assessment, promote deeper learning and ensure that students' holistic learning experiences are considered. However, defining the assessment criteria and descriptors that are authentic, clear, well formulated, not restrictive and demands careful consideration to avoid gaps and can be a time-consuming process.

This paper explores the potential of using AI in the design of authentic assessment rubrics and presents a critical reflection on the insights gained from action research conducted by three curriculum designers working across various design qualifications at a Private Higher Education provider using ChatGPT. The study contributes to an emerging broader discussion on the innovative use of AI to support teaching and learning within the field of design education.

Design Lecturers' Pedagogical Approach to First Year Practical Studio Session during the rapid transition to Online Learning

Ronmari Roux, Jacqueline Batchelor

Design education revolves around the effectiveness of face-to-face interactions in the design studio for design pedagogy to be effective (Hammershaimb, 2018). During the COVID-19 restrictions in South Africa in 2020, design-specialised lecturers had to rapidly transition their practical-orientated contact classes to online classes. Design education lecturers had to come to terms with students distanced from themselves, the institutional studio, and their peers. Lecturers had to rethink their pedagogical choices while preserving their programmes' academic integrity. This qualitative study focused on design lecturers' approach to facilitating the sudden change from contact-orientated classes to online classes for first-year Bachelor of Design students whose exposure to design education was little to none. This descriptive case study adopted an interpretivist stance and used the Cognitive Apprenticeship Model (CAM) as a theoretical framework to guide the analysis of data derived from five education design lecturers' semi-structured interviews and a focus group interview. This study does not establish the effectiveness or success of these design lecturers' pedagogical approaches; however, it clearly describes how design

lecturers were able to conduct their studio classes in the online environment with a combination of various CAM methods.

Findings indicate that lecturers were familiar with and applied modeling, coaching, scaffolding and exploration in their studio pedagogy. However, they were not clear on the distinction between reflection and articulation, and as a result, these methods were underutilised. These findings add to the debate on whether design education is over-reliant on physical studio-related pedagogies and whether pedagogies suited for the online environment can be equally effective. Therefore, future studies could further investigate the effectiveness of these design lecturers' pedagogical approaches, their use of Information and Communication Technologies to mediate practical design sessions, and what these practices mean for future design educational practices in South Africa.

Keywords: Online pedagogy; Design studio pedagogy; Cognitive Apprenticeship model; Education Design, COVID-19.

SESSION 5: DOING

Fostering Design Students' Soft Skills Development for Workplace Success through Online Problem Based Learning

Franci Cronje, Carla Enslin

This paper builds on previous research and the insights gained from thematic analysis of reflections by students and educator panels on an online Collaborative Problem-Based Learning (CPBL) project across four campuses at a South African Private Higher Education Institution. The research found a strong connection between student and educator reflections and reveals that collaborative project-based learning (CPBL) is crucial to building students' confidence in transdisciplinary collaboration within a real-world online setting. Consequently, the researchers begin this paper with a proposed *framework for fostering confident transdisciplinary CPBL online.* The interrelated insights obtained from the longitudinal study thus form a foundation for the researchers to delve deeper into the experiences of disciplines and, in this instance, the reflections of design educators and project designers on how transdisciplinary CPBL can nurture soft skills for workplace success. Soft skills, which are transversal or non-technical and cross-disciplinary, are often unnoticed by lecturers and not evaluated in tests or projects. The paper contextualises Royo's taxonomy (2019) and soft skills mentioned in the literature that are further enhanced through CPBL. The research focusses on *communication*, *teamwork*, and a *positive attitude*.

Thematic analysis of the reflections of design lecturers and programme developers (2023) reveals an embedded confidence, but also discipline-specific lines of tension in the collaborative thinking and doing of design students. The responsibilities of educators as transdisciplinary facilitators emerge in the approach and practices of project panels and in the critical role of supporting students to articulate their professional self-efficacy and to express their professional worth confidently and effectively. Project design also plays a critical role in this regard. The research considers the nature of confidence within and beyond disciplines and reveals that, ideally, all study programmes should be sufficiently latticed to ultimately enable online transdisciplinary collaboration.

Keywords: Soft skills; Collaborative Problem-Based Learning (CPBL); transdisciplinary project.

Speculative Futures: Questioning Nanotechnology and Sustainable Development through Industrial Design Pedagogy

Oratile Rose Mokgatla, Ashton Margarete Moseley

The Fourth Industrial Revolution (4IR) is rapidly blurring the lines between the physical, digital, and biological worlds through advances in artificial intelligence (AI), robotics, and other technologies. While Industry 4.0 is transforming our future realities, it is essential not to lose sight of human needs and basic human rights. Development must balance social, economic, and environmental sustainability, which is why designers need to engage with ethical considerations and social realities. One example of a technology that has both potential benefits and ethical threats is nanotechnology. Nanobots, machine versions of bacteria or viruses, can perform pre-programmed tasks autonomously at the atomic level. While nanotechnology has the potential to address inequalities, climate change, and diseases, it also poses ethical threats to society. Higher Education programs must prepare students for these ethical conundrums, especially in a rapidly changing industry driven by technology.

Speculative Design (SD) is a way to engage students in the future implications of the relationship between science, technology, and humans. It proposes provocative future scenarios that spark debate. To prepare students for the changing industry driven by technology, an undergraduate project explored the use of AI as a tool in speculative design. Students imagined advancements in nanotechnology linked to a specific SDG and proposed provocative future scenarios through a realistic magazine-type advertisement. The project aimed to balance technological progress with social, economic, and environmental sustainability and prepare students for ethical considerations and future implications. Through SD, students critically explored and reflected on social challenges and opportunities, a shift in approach to design education that emphasises speculative and theoretical exploration and reflection compared to traditional skills-based methods.

This paper reports on the project outcomes, student reflections, and key findings. Furthermore, it emphasises the importance of balancing technological progress with social, economic, and environmental sustainability and engaging students in ethical considerations and future implications through SD. The research paper argues that the integration of SD in industrial design pedagogy has the potential to foster a critical and reflective approach to design practice that is essential for addressing the complex challenges of sustainable development in today's world.

Reflecting on lessons-learned for BIM implementation in design curricula in South Africa.

Marisca Deminey

Amanda Breytenbach

The paper reflects on the findings from a Building Information Modelling (BIM) literature review that considers national and international development of BIM implementations, focusing on the Architecture, Engineering and Construction (AEC) industries. This study acknowledges BIM as a digitalisation breakthrough which emerged in the third industrial revolution (3IR) and has evolved rapidly within the fourth industrial revolution (4IR). BIM technology instils the attribute of being a contributive team member in co-designed projects and facilitates effective project outcomes by reducing time, cost, wastage, environmental impact and energy consumption.

The paper aims to identify challenges and opportunities that could inform design education teaching and learning strategies in preparing students for a rapidly changing work environment. Most research shows a need for more training (education) and more profound deeper working knowledge in BIM within the architecture and interior design industry that impacts the implementation thereof. International findings show a need for experienced BIM professionals and personnel globally in the AEC industries. As a response to these needs, educational institutions have developed BIM courses, and researchers have proposed educational frameworks to assist in meeting the needs of the fast-paced development of BIM.

The paper explores the South African (SA) architecture and construction industries' BIM implementation and compares the research findings to international studies. The investigation extracts challenges and recommendations relevant to higher education design curriculum, and these findings will be discussed in the paper as lessons-learned. These lessons will be discussed and developed in recommendations that could assist in identifying new pathways in future-forward, industry-relevant architecture and interior design curricula. Recommendations explain that a BIM curriculum is a holistic process that should include role players in curricula development to ensure an alignment with industry expectations. Successful BIM programmes include cross-disciplinary collaborations in which students can work as team members in co-design projects.

Keywords: building information modelling (BIM), BIM implementation, BIM curriculum

The Digital Supervisor: key to access or shortcutting research?

Ryna Cilliers, Veronica Barnes

Postgraduate students in South Africa and other developing nations face substantial hurdles in completing their research, despite efforts to boost research output and garner subsidies from the Department of Higher Education and Training (DHET). Key issues include research capacity development and supervision burdens. The potential of conversational AIs, like ChatGPT, as research assistants, has been discussed, but more research needs to be focused on using ChatGPT to support novice and student researchers, especially within resource-poor Global South contexts. Large Language Models (LLMs) such as ChatGPT can support the scientific research process, assisting in generating research questions, developing methodology, creating experiments, analysing data, and writing manuscripts. Responsible use of LLMs in research is crucial, underscoring the need to balance LLM benefits and limitations, retain essential academic skills, and ensure research equity. Our study on ChatGPT's role in postgraduate education offers insights into these areas.

We use a Case study approach at a University of Technology in South Africa. The research has two main objectives: firstly, it presents a survey examining current ChatGPT usage among postgraduate students,

exploring frequency and common applications, and assessing perceived utility in research work. Secondly, it analyses a Design student's experience using ChatGPT to transform initial ideas into a research proposal, to understand its potential and constraints as a 'digital supervisor'.

Findings underscore the potential of AI tools to boost academic productivity and streamline the research process. It also outlines limitations of AI tools, such as accuracy, potential over-reliance, and creativity concerns. The study highlights the necessity of a balanced pedagogical approach, integrating AI and traditional methods, and promoting ethical AI usage. It underscores challenges in AI tool deployment, like access issues and language barriers, particularly in the South African context.

A significant finding is the potential role of AI tools like ChatGPT as digital supervisors, alleviating the burden on human supervisors and strengthening postgraduate culture in design. The study warns against viewing AI tools as complete substitutes for human supervisors and emphasises students' comprehension of AI functions and ethical implications.

The research contributes to design education by demonstrating the potential benefits and limitations of using LLMs as 'digital supervisors' to enhance access to postgraduate studies, particularly in the Global South. It emphasises the importance of incorporating LLMs into student learning and research in design responsibly, ensuring students develop requisite research skills and knowledge.

Keywords: Large Language Models; Post Graduate Research; Design Education; Digital Supervision

SESSION 6: CONNECTING

An Exploration of Co-Creating South African City Brands to Revive the Tourism Industry
Post a Global Pandemic

Sally Sabre, Yolandi Burger

City branding involves establishing unique identities for cities using branding principles. There is ongoing debate among scholars about the best strategic framework for city branding, as successful strategies vary across cities. In South Africa, city branding activities can benefit the local tourism sector, which was severely impacted by the Covid-19 pandemic, with strict lockdown measures leading to a standstill in tourism activities throughout 2020 and 2021. As restrictions eased and businesses in the sector aimed to revive tourism, innovative approaches became necessary. This paper focuses on co-creating specific South African cities post-pandemic. Two online co-creation workshops were conducted with stakeholders to explore their perceptions and ideas about city branding. The findings highlight the importance of stakeholder engagement and resident ambassadorship, which may have been overlooked in the initial design of the city brand. Involving stakeholders from various sectors helps address the challenges of (mis)representing the city, differentiating the city from other destinations, and creating new narratives for the cities that are more suitable. Engaging stakeholders also fosters a deeper connection between the city brand and its people, which in turn might inspire unity. The study emphasises the need to revisit the city brands of Johannesburg and Cape Town and highlights the value of co-creation workshops as a methodological tool for designers and design students. It also provides a foundation for future research on city branding and reviving other industries, which may be relevant in other contexts, such as post-war Ukraine.

Keywords: Co-creation; City Branding; South Africa; Tourism industry; Global pandemic

It's a zoo in there - Reflections and case studies from collaboration and participation design with Johannesburg Zoo Edu-centre, 2011 – 2023

Christa van Zyl

Over the past 12 years, students at a leading South African design education institution have developed many feasible solutions based on human-centred and participation design principles. Implementing these design solutions to foster positive change is often problematic owing to funding and handovers; consequently, many projects remain at the conceptual stage, with few making a positive difference to the external stakeholder. Nevertheless, despite these challenges, students often produce high-end and in-depth results when working with stakeholders.

This paper uses the Johannesburg Zoo undertaking as a case study to argue that participatory design, through multi-disciplinary collaborative projects, can be positioned as a model for socially responsible design education. A leading South African design education institution has worked with the Johannesburg Zoo since 2011 on diverse participation design projects. These projects have ranged from a series of paper toys for early childhood development (ECD) learning to potential funding initiatives, branding, mural designs, marketing and, most recently, redesigning the zoo's education centre. Outcomes of these projects demonstrate that well-integrated participation design projects can assist in solving problems within communities, developing impactful and innovative ways to engage young minds about the zoo and its functions.

This approach has a political dimension of user empowerment and democratisation. Participation design is a method that shares design responsibility and increases design innovation. In 2020, five days before the Covid-19 lockdown, a range of 15 paper toys was launched as the Zoo Buddies campaign. Whilst the 2020 – 2021 lockdown made the sale of these toys impossible, the printed kits are still gifted to visiting school groups by the zoo. The project created awareness of the Zoo Edu-centre that was in disrepair and launched a City Parks funding drive for the much-needed renovations.

In 2022, the Zoo Edu-centre approached the institution to assist in designing educational murals for the renovated centre interior, an augmented reality wayfinding app, information boards at enclosures and several selfie murals throughout the zoo. These designs were presented to funders for 2023 with positive results. The collaboration is planned to continue in 2023 by creating an activity book focusing on the conservation projects the zoo hosts. The goal is to introduce young children to conservation, sustainability, recycling and other vital sustainable goals.

Keywords: Education, collaboration, community engagement, human-centred design, participation design

Higher Education: cultural agent addressing consumer demand in creative fashion economy

Elizabeth Kempen

Higher Education Institutions (HEI) have an ever-increasing role to play in the creative economy of South Africa. The relationship between HEI and the creative economy manifests through the skills, training, and knowledge transferred to students thereby supporting this economy through job creation addressing Sustainable Development Goal 8 (SDG8). The local fashion industry is a creative industry of which the custom-made fashion designer is an essential part. These designers offer locally made traditional and culturally specific custom-made garments to customers in South Africa that communicate the culturally significant heritage of their wearer. This is accomplished through incorporating African fabrics into Western designs or using cultural and symbolic attire created by traditional designers knowledgeable of the features synonymous with a specific cultural dress. Although various studies have signaled the importance of custom-made fashion designers in the alleviation of poverty and job creation the significance of these businesses as cultural custodians of traditional apparel has not been considered. The purpose of this study was to explore the importance of culturally specific fashion to the South African female consumer who employs custom-made fashion designers to achieve a desired appearance and provide insight into the role HEI can play in facilitating the advancement of traditional and cultural fashion to contribute to the creative economy. An exploratory qualitative study was designed which included participants who made use of a custom-made apparel designer. Data was gathered through means of 11 mini-focus groups resulting in data saturation. Transcribed interviews were thematically analysed from which three main themes emerged from the data. The findings suggest that customers attribute the importance of custom-made culturally specific fashion: (1) to be culturally responsive to their traditions and culture, (2) as enablers of economic empowerment, and (3) indicative of their local favouritism towards locally produced custom-made fashion. Through the inputs of HEI where fashion curriculum is thought within Fashion Design and Consumer Sciences programs, training should focus on the importance of preserving cultural heritage in fashion design curriculums. HEI should further initiate and support the advancement of basic sewing and cultural fashion design skills to ensure the advancement of cultural custom-made fashion design in communities and to those who have not benefitted from fashion as a creative industry to improve livelihoods. The study contributes to the cultural importance of fashion and the role HEI can play in advancing the creative fashion economy of South Africa and addressing SDG 8.

A South African approach to aging in place

Monica Di Ruvo, Colleen Cocotos

By 2025, the number of older persons globally will surpass the number of young individuals (World Health Organization, 2022). Research consistently highlights the preference for ageing in a familiar home environment, enabling the elderly to remain in their homes and avoid institutionalization. To facilitate this, homes need to be adapted to cater to the changing physical and emotional needs of the elderly. Design professionals responsible for these adaptations are typically trained to address the functional requirements of the built environment. However, they may overlook the importance of a life-centred approach, which prioritizes the long-term well-being of the users. This research aims to emphasize the interconnections between individuals and their environment, extending beyond the boundaries of the home.

A scoping review was conducted using a method that encompassed both conceptual and empirical literature on ageing in place (Pham et al. 2014). The research question guiding this review was: "What are the

challenges faced by older adults in their home environments? How can the creation of conceptual framework sensitise students and designers to a holistic view of ageing-in-place?" The keywords employed included ageing, housing, ageing-in-place, well-being, architecture, and home modification. The review primarily focused on peer-reviewed papers published between 2012 and 2022, with select seminal works beyond this time frame. To ensure interdisciplinary insights, literature from various academic disciplines was sourced.

The research delved into six themes to broaden the life-centred design approach for design educators and professionals. These themes encompassed: 1. physical wellbeing, 2. psychological well-being, 3. social engagement, 4. spatial/built structure, 5. the broader context of the neighbourhood, and the integration of 5. home technologies and AI. By considering these themes, new pathways for design professionals can be formulated, extending beyond the conventional approach of solely addressing compliance with disability or modification standards.

The proposed life-centred approach aims to sensitize design educators and students to the needs of future ageing populations. It offers design professionals a multidisciplinary body of knowledge that accommodates a holistic view of the challenges encountered during the process of 'ageing in place.' This work provides valuable insights for design students, architects, interior designers, and researchers. Furthermore, it identifies knowledge gaps that can be explored further, with the intention of impacting a broad range of stakeholders.

SESSION 7: DOING

Makers Space/Space Making: Understanding the role of a MakersLab in fostering new creative pathways.

Steffen Fischer

The MakersLab is a new creative space within a leading South African design education institution. The space encourages creative intersections to bridge the 4IR knowledge gap with sustainable development goals, 4IR and explorative making. Over the past year, the development and integration of the lab have been integral in establishing educator/student relationships. The development of the MakersLab is seen as an 'incubator' for change whilst navigating current socio-economic and gender development gaps. Here the space aims at fostering user needs, developing new ways of thinking, and engaging with the community. The fast development of technology means that educators learn from students as much as students learn from educators. The current design curriculum is changing to accommodate the changes with new machinery, technology and modes of practice in design education. The curriculum within the interior design department is being interrogated to accommodate new technology to democratise learning with 4IR technology whilst navigating the parameters of online learning. The research uses a semi-structured questionnaire to understand the role and expectations of the MakerLab, together with educators, design students (first, second and third year interior design students) and external creative artists. The development of the MakersLab provides innovative learnings to educators on how better to be equipped with the fast-past world of technology in making space for new pathways of future spatial designers.

Keywords: 4IR, design education, innovation, incubator, democracy, human capital

Physical Meets Digital: Advancing Industrial Design Higher Education through the Incorporation of Projection-Mapping in undergraduate Teaching and Learning

Ashton Margarete Moseley, Pia Findlay

As emerging digital technologies become increasingly integrated into our everyday lives, it is important to evaluate how they can be used both as beneficial tools in the design process and how they can be effectively integrated into Higher Education Pedagogy to enhance Teaching and Learning processes.

Projection mapping, also known as spatial augmented reality, is the process of depicting digital images or videos onto 3D surfaces through digital projection. These surfaces can range from large objects such as building facades, to small-scale everyday products. The advancements of projection mapping present exciting possibilities in design processes and outcomes such as showcasing multiple product surface finishes, colours and textures on a single 3D model, generating captivating and changing spaces or installations, or creating engaging and immersive product advertising, to name a few.

As we enter the fast-changing Industry 4.0, students must be suitably and sufficiently equipped with a wide range of skills that Industry 4.0 requires. This includes the "hard skills" of practically using emerging digital technologies. Therefore, these technologies must be integrated into Undergraduate Teaching and Learning, advancing the Programme offering and equipping graduates with the skills necessary to participate in their evolving industry. Furthermore, the collaboration and interdisciplinary work that these technologies allow for, will also develop the critical "soft skills" of multi/interdisciplinary work needed in Industry 4.0.

Aligned to the subtheme of "Doing: Exploring new pathways in design education", this paper reports on a larger Action Research project, comprising a series of interdisciplinary undergraduate projects, that explores the potential overlaps of the digital and physical worlds, through projection mapping. These projects explore new means of incorporating projection mapping within student projects and how the technology can be used effectively and efficiently to enhance teaching, learning, and industrial design processes.

This paper aims to present an overview of the project's methodologies together with a selection of project outcomes and key findings through a discussion of student and lecturer reflections regarding the relevance and efficacy of incorporating projection mapping into undergraduate teaching and learning.

Keywords: Industry 4.0, Projection Mapping, Digital Technology, Industrial Design

Envisioning an effective education system for generation Alpha focused on skills development in the design higher education sector

Anel van Rooyen, Sanri Mostert

The design higher education system of today will not be applicable to the demands and requirements of tomorrow (Munir & Nudin, 2021). Furthermore, Generation Alpha introduces a new challenge to our current education systems, demanding a new approach to education. Accordingly, Karen Gross, the author of Breakaway Learners, believes that universities should begin adapting to cater to Generation Alpha, suggesting that thinking ahead is crucial in planning and contemplating the future's implications is essential (Hall, 2017). The research study sets out to prove through the review of the literature that the current design education system is outdated for the next cohort in higher design education called Generation Alpha. Additionally, the research study predicts an effective approach to educating Generation Alpha in the design higher education sector as potential students and graduates by using secondary research of literature

studies globally. This study aimed to contribute to this growing area of research by exploring the most effective education systems for Generation Alpha in the design higher education sector through analysis of Gen Alpha characteristics and anticipated future skills required in the design sector. After reviewing literature focusing on the unique characteristics of Generation Alpha and the anticipated future skills required in the design sector a future model for design higher education was proposed. Firstly, the study identified the unique characteristics of Generation Alpha, such as their strong connection with technology and their need for digital literacy. Accordingly, the findings from the literature review suggest that the design industry is becoming more technology-driven, requiring CAD and robotics skills, amongst other technologies. Consequently, the design higher education system for Generation Alpha should involve digital literacy, robotics, AI, big data analysis and other STEM-related skills to equip students with the necessary knowledge and competencies for future design careers.

Keywords: Design education, Generation Alpha, technology, future education

SESSION 7: LEARNING

Bridging the gap between Industry and the lecture hall: small-scale manufacturing machines and tools for experiential learning within the teaching environment

Martin Bolton

Students in Design Education are equipped to enter their respective creative industries. It is the intention that their skills and capabilities once they graduate are matched as closely as possible to the industries into which they will fit. During their time within the Higher Education faculty, they need to be exposed to relevant technologies and processes. By adapting manufacturing technologies for small-scale use in the classroom, students can gain hands-on experience and integrate these technologies into their learning processes.

Experiential Learning methodologies, will be unpacked alongside manufacturing technologies, which worked very effectively within the design educational environment. Students are able to gain practical experience in the manufacturing process, work collaboratively, and solve real-world design problems.

Over the past few years, several manufacturing technologies have been adapted for use in the industrial design lecture environment, including Rotational Moulding, Injection Moulding, Sand Casting, and Press Forming. Machines, tools, and processes have been experimented with, and adapted to be operated in a small-scale. Practical examples of these adaptations will be presented, including design outcomes that students have developed through their own project undertakings.

The results of students being able to replicate the manufacturing processes in the classroom environment have proven to be extremely successful, with project outcomes effectively illustrating real-world large industry manufacturing concepts, through practical demonstrations. The students understanding of appropriate industry concepts is evident in their theory research reports which are submitted alongside their project outcomes. Students document their own design process with reference to industry processes, illustrating their effective understanding of the core principles.

The value of students being able to visit industry partners during their studies is extremely high, however, simulating large scale processes on a small-scale within the lecturing environment allows for students to experiment and learn hands-on in a free and safe working space prior to heading into industry. Furthermore, these small manufacturing machinery and tools are able to effectively manufacture small products and components at a suitable quality for incorporation into real product outcomes.

Keywords: Experiential Learning, Small-scale Manufacture, Industrial Design.

Exploring Student Perspectives and Challenges in Engaging with Decolonization in a Private Higher Education Institution in South Africa

Esther Martins

Decolonization has gained significant attention within South African public higher education fueled greatly by the Rhodes Must Fall and Fees Must Fall movements of 2015 and 2016, with many institutions looking to address historical biases and promote a more inclusive curriculum.

This pilot study explores student perceptions of decolonization in an Interior Design program within a private higher education institution (PHEI) in South Africa. While much research on decolonization in higher education has focused on public institutions, little is known about its implications and potential differences in the context of private institutions. The research context is a for-profit PHEI that aims to be inclusive. The institution has incorporated decolonization as one of the key themes in its centrally designed curriculum. However, the extent to which students and lecturers engage with decolonization, and their understanding of its significance and impact within the field of Interior Design, remains unclear. This study aims to address this gap by exploring student perspectives and experiences regarding decolonization in Interior Design education.

The research design involves a mixed methods approach, combining quantitative and qualitative methods. Quantitative data is collected through the review of third-year theory courseware and a questionnaire survey issued to a sample of third year students within the interior design programme. The courseware review explores what contexts students are engaging with while the questionnaire elicits participants' understanding of decolonization and their experiences and challenges in incorporating decolonization into design projects.

The study finds that students define decolonization as political independence and freedom from colonial influence, as well as challenging colonial ideologies and injustices. However, many students do not consider decolonization relevant to their program or their capstone projects. Reasons include a lack of interest or relevance, a focus on alternative topics, and limited knowledge or understanding.

The need for continued meaningful conversations and engagement with decolonization within the classroom is vital if interior design education is truly to be decolonized resulting in teaching and learning practices that are more inclusive and equitable.

This paper leans into the conference sub-theme of Learn, investigating challenges and opportunities that arise in decolonising Interior Design Education.

Keywords: Decolonization, Interior Design education, Private Higher Education in South Africa, curriculum design

Architectural artisanship skills development strategies implemented through architectural design studio projects focused on process

Victor Mokaba, Francine van Tonder, Immanuel Nkambule

Design education is an integral part of the architectural student journey. Traditionally during the undergraduate course, emphasis is placed on the skills development of conceptual sketching, model making, storytelling and various communications of the concept and the process of design. However, these skills are often seen as separate parts and taught as such without always utilising the opportunities to integrate these various aspects and parts into one holistic process.

Architectural artisanship is a vital part of design acumen and must be seen as a skill that facilitates the design process rather than a separate entity. For the 3rd year architectural design studio at an architectural learning site in South Africa, the project briefs have been conceptualised to place an emphasis on developing the artisanship required for architectural design. This is done through a requirement of process presentation of the student proposals in order to successfully address the project briefs and the required outcomes.

The students' outputs provide the data analysed to present the findings of this paper. The findings presented indicate a noteworthy improvement in the design process of the students. The architectural process, as a response to various design generators and variables, is a nuanced journey with many feedback loops and development stages with multiple design iterations. Student utilisation of process tools such as conceptual sketching, model making, storytelling and various communications of the process resulted in a better final architectural proposal.

Presented in this paper is an outline of these processes as well as a critical appraisal of what worked more effectively or less effectively. The findings are significant as such research documented and presented becomes a benchmark for further development of undergraduate design courses for architectural learning sites. Therefore, the paper will contribute to the body of existing research, by addressing the limited academic research available on the architectural design process pedagogy.

Keywords: Architectural artisanship; Design studio; Design process; Skills development

SESSION 8: MAKING

The Integration of Critical Thinking and Digital Manufacturing in Interior Design Product Development

Chiara Croci

In recent years, digital fabrication has become an increasingly popular tool in the design field. By integrating digital manufacturing techniques into the design process, designers are able to produce more innovative and sustainable products while minimizing material waste. In this paper, we present a model of approach that incorporates digital fabrication into the prototyping of interior design products, using Origami-based techniques. Origami, the antique art of paper folding, has long been admired for its beauty and precision. One of the main benefits of Origami-based techniques is that they provide a way to create complex forms using only simple folds, transforming a bidimensional surface into a three-dimensional object. This makes them particularly useful for projecting design objects, such as room dividers, which must be both functional and visually appealing. The study involved a group of students who were given the opportunity to study digital fabrication techniques and apply them to the singularity of their product through design thinking and reverse engineering. The study aimed to identify issues of production in an industrial design master's thesis on computational Origami and digital fabrication.

By merging activities such as folding, digital fabrication, and prototyping, students were able to focus on art and design, problem-solving and critical thinking. By combining wood, paper, silicone, and 3D printing filament, the students were able to create room dividers that were both functional and visually striking. The study emphasized the importance of integrating critical thinking and digital manufacturing throughout the design process and in doing so, allowed the participants to identify potential problems and come up with innovative solutions. The students could quickly and efficiently produce prototypes using digital manufacturing techniques, allowing them to test their designs and make necessary adjustments.

The paper provides a framework for integrating critical thinking and digital manufacturing in interior design product development, from ideation to prototyping. It provides examples of how these approaches can be

used at each stage to produce more innovative and sustainable products. The study also highlights the versatility of Origami-based techniques, particularly in creating double-purpose room dividers adaptable to the space's visual needs. The folds can also be used as an integral feature of the product, providing stability and structural needs. Origami-based techniques were revealed to be a perfect way of creating a double-purpose room divider, which is also adaptable to the visual needs of the space.

Keywords: Digital Manufacturing, Critical Thinking, Computational Origami, Interior Design, 4IR

Visual Mapping and Meaning-Creation: Making Research Visual for Design-Based Thinkers

Jody Simpson, Naretha Pretorius

In exploring the significance of metropolitan open space systems in building meaningful city brands, the researcher utilised Visual Narrative Inquiry to explore the opinions, perceptions and lived experience of Durban residents and its' metropolitan open space system. As a design-based practitioner the researcher grappled with finding suitable 'meaning-making' methodologies that would answer to both the academic rigour required of a master's dissertation as well as their own needs to visually makes sense of the ideas, theories, models and metrices. This autoethnographic study is a critical reflection on the research and meaning-making process of a design-based thinker, utilising visual-mapping. Visual mapping helped the researcher to gain a deeper understanding of their problem and ultimately answer the research questions, embracing a meaning-making process that appeared to be logical, adopting and trialling various methods. Throughout the master's process the researcher utilised visual methodologies to make sense of their thinking, analysis and planning and utilised the same to share their thinking with their supervisor and mentors. Through the visual mapping process the researcher was able to make sense of and articulate the connection between the literature, methodology, research, thematic analysis, and findings and through the visual mapping process was able to further identify existing, potential, and implied connections exploring the topic at a deeper level. Through visual mapping, the researcher was able to create an integrated approach to visualising and analysing the scholarly research. The contribution of this study is to recognise the significance of, and to encourage the use of familiar tools and methods such as visual mapping for design-based thinkers, practitioners, researchers, and their supervisors in postgraduate research studies. Design-based thinkers often require visuals to explain their thought process while utilising visuals to work through their thinking. This autoethnographic study critically reflects on the research and creative meaning-making process as a design-based thinker and the methodologies explored, while reviewing the various artefacts from the dissertation. The paper concludes sharing the key insights and significance for supervising design-based thinkers, arguing that familiar tools and methods and a tactile process such as visual mapping enables a deeper and more meaningful sense-making and meaning creation process for design-based practitioners.

Keywords: visual mapping, design-based thinkers, making research visual, visual methodology, visual research methodologies, autoethnography.

AI, Alexander, and Architecture

Hermie Delport

This research reflects on the future of artificial intelligence (AI) technologies and Pattern Theory in architectural and design education and how it may inform design process, projects, assessments, and research in this space. We are increasingly bombarded by new technologies and an abundance of information. The rapid evolvement of AI has created many uncertainties. Might AI take away our jobs? Will AI kill creativity? How will we know who has produced the work? How do we as educators and

students make sense of these technologies and use it (or not) in our education and practice? Can we possibly discover through AI new tools and possibilities and ways of working that contribute positively to what we do?

This paper explores student experience, reflections, and perceptions on the use of AI in a third-year history-and-theory of architecture course. Students were required to use AI word and image generators as part of an assignment that focused on the book A Pattern Language by Christopher Alexander. The students unpacked the 253 patterns in A Pattern Language through AI word and image generators and critiqued the results in comparison to their own hands-on analysis developed through physical models and hand-drawings.

Alexander's book A Pattern Language is a seminal architectural text and has, since its publication in 1977, not only influenced architectural education, but also inspired the use of pattern methodologies in computer programming. When invited to speak at a computer software conference, Alexander envisioned a world where "computers (could) play a fundamental role in making the world—and above all the built structure of the world—alive, humane, ecologically profound, and with a deep living structure" (Alexander, 1996, para. 74). Alexander's idea and methodology of patterns and pattern languages have also been applied in many other disciplines.

This paper also introduces Pattern Theory (Leitner 2015) as an extension of Alexander's work and comments on its potential for developing new ways of working in architectural education, practice, and research that could balance human and machine intelligence and that might result in more humane, ecologically profound, and living structures, as envisioned by Alexander.

Keywords: Artificial Intelligence, Christopher Alexander, Pattern Theory, Architectural education

Work-integrated learning (WIL) through hybrid project-based learning for enhanced student engagement and graduate success in fashion education

Heidi Svendsen, Jenna Segal, Merie Sutherland, Francisca Arabelle Treurnicht

To thrive in the fast-paced fashion industry, graduates must possess critical skill sets upon entering the workforce to ensure they are fully prepared for employment. This immediate need from the fashion industry necessitates that students gain practical, experience-based inputs from the fashion curricula pitched within the fashion higher education environment.

In line with the DEFSA theme "Vulindlela: making new pathways", this paper investigates the "Learning: new approach to design education" subtheme through explorative research into work-integrated learning. The paper emphasizes the importance of equipping fashion industry graduates with critical skills and practical experience to enhance their employability. A focused approach to fashion education, where modules within a set curriculum do not account for skills and knowledge transferability, no longer successfully prepares students for entry-level career opportunities.

The authors argue that the current fashion education system must incorporate work-integrated learning to bridge the gap between academic and industry requirements. They suggest that graduate success rates and employability will improve by reintroducing work-integrated learning, which involves industry contributions and project-based curricula with reputable fashion brands. However, implementing work-integrated learning poses challenges, such as securing appropriate placements and increased student workload. A novel framework approach is proposed to overcome these challenges and enhance content relevance and student engagement. The researchers aim to explore and define a framework that effectively includes an industry-endorsed hybrid-curriculum approach incorporating project-based, problem-based, theory-based Work-Integrated Learning formats under a relevant brand umbrella. The aim is to create a sustainable pathway to increase student engagement and success in collaboration with the fashion industry.

Keywords: Work Integrated Learning, Hybrid – Curriculum Learning, Student Engagement, Fashion Education

Creative Correspondence

Terence Fenn

Design anthropologists Gatt and Ingold's concept of 'correspondence' describes a designed artefact's ability to appropriately represent a given community's perspectives. For design-researchers operating in co-design contexts, correspondence is helpful for ensuring that final outcomes are 'tuned' to the current and aspirational experiences of user-communities. However, while design-researchers working in practice-led contexts share many concepts and techniques with their design anthropology colleagues, this paper argues that for Design approaches concerned with plausible, anticipatory perspectives, correspondence is a limited concept that can hamper the role of design imagination. In response to this claim, this paper contributes the following outcomes. First, it presents a short theoretical review of the literature that compares design anthropology's critical objective with projective research. Second, the paper outlines key characteristics of correspondence, suggesting its conceptual value and limitations for projective research. This outline is followed by an introductory discussion of Bakhtin's notion of 'creative understanding. The concluding outcome of this comparison is the theorisation of 'creative correspondence', a novel design concept that integrates crucial concepts from correspondence and creative understanding to leverage the unique abilities

of design artefacts to generate and ultimately contribute a shared perspective on plausible, preferential futures. Accordingly, the third outcome of the paper is a contextualisation of the relevance of creative correspondence, taking the form of a brief discussion of a community-orientated co-design project involving the author and members of the Westbury community.

Using 'SLOC' as a co-design inquiry tool into nomadic pedagogy

Ginn Bonsu Assibey, Alettia V. Chisin , Bruce Snaddon

Design educators have been trying for the past decades to frame real world problems into the context of studio-based practices through the lens of economic design logic as the status quo. Such studio-based design pedagogy distances students from real world problems, leading to poor problem definition resulting from poor understanding and not experiencing the problem firsthand. To counter such a conservative design problem-solving approach some design educators have adopted nomadic pedagogy, which promotes curious-emphatic design approach that embraces performative enactment to generate solutions based on a well-defined problem. Though nomadic pedagogy has promising possibilities for design education aimed at exposing students to real world problems to equip them to empathize in developing contextually responsive solutions, its contours in terms of co-designing are not well defined, making inquiry into the approach difficult. The cardinal aim of this research is therefore, to attempt to use SLOC (small, local open and connected) a collaborative framework as a co-design inquiry tool into nomadic pedagogy using a case of a "Design+Ecology" project in Cape Town, South Africa. Methodologically, the study adopted narrative approaches because the researchers wanted to get data on how the participants co-experienced the nomadic pedagogy and its influence on them during the 'co-problematization' and co-solution development. The study employed case study and used documentary review to study the entire co-designing processes. Informal interview through conversations was also used to gather data from some of the participants, which included lecturers, stakeholders and students on their experiences through the lens of 'SLOC' (small, open, local and connected). SLOC was also used as the research framework and analysis tool. The results showed that in the context of small, the participants engaged in collaborative narratives and co-conceptualization for better problem co-definitions focusing on a small unit of the problem. The nomadic pedagogy positioned participants to co-engage in local, open and connected facets of SLOC, through leveraging inspirations from global design online platforms and the application of the biomimicry method, which allowed for unrestrained doing and becoming, influenced by the fluidity of learning generated by place and space, thereby producing a true relational ontology for the participants.

Institutions	Participants
Cape Peninsula University of Technology	Ginn Bonsu Assibey
Cape Peninsula University of Technology	Alettia V. Chisin
Cape Peninsula University of Technology	Bruce Snaddon
Cape Peninsula University of Technology	Ryna Cilliers
Cape Peninsula University of Technology	Veronica Barnes
Cape Peninsula University of Technology	Francine
Cape Peninsula University of Technology	Dr Monica Di Ruvo
Central University of Technology	Tsekelo Patrick Moremoholo
Durban University of Technology, University of KwaZulu-Natal	Sonali Chetty
Greenside Design Center	Alexandra Balkanska
Greenside Design Center	Steffen Fischer
IIE Vega School	Ria van Zyl
IIE Vega School	Lizette Carstens
IIE Vega School	Sally Sabre
IIE Vega School	Yolandi Burger
IIE Vega School	Lizette Carstens
IIE Vega School	Maretha Geyser
IIE Vega School	Christiaan Graaff
IIE Vega School	Dr Franci Cronje
IIE Vega School	Dr Carla Enslin
IIE Vega School	Jody Simpson
IIE Vega School	Naretha Pretorius
IIE Vega School	Celeste McKenzie
IIE Vega School	Marili de Weerdt
IIE Vega / Loughborough University	Yolandi Burger
Inscape Education Group	Susan Giloi
Inscape Education Group	Mary-Anne Potter,
Inscape Education Group	Hein Liebenberg,
Inscape Education Group	Annika Dehrmann
Inscape Education Group	Esther Martins
Inscape Education Group, The Da Vinci Institute,	Heather Goode
Inscape Education Group, University of South Africa	Mary-Anne Potter
Loughborough University	Robert G. Harland
Nelson Mandela University	Bruce Cadle
Nelson Mandela University	Mieke Janse van Rensburg
Rhodes University	N Mabasa
Rhodes University	Q Rouhani
STADIO School of fashion	Terese Potgieter
STADIO School of fashion	Diandra Schreuder
STADIO School of fashion	James Barrett Poulsen
STADIO School of fashion	Anel van Rooyen
STADIO School of fashion	Anel Van Rooyen
STADIO School of fashion	Heidi Svendsen

STADIO School of fashion	Jenna Segal,
STADIO School of fashion	Merie Sutherland
STADIO School of fashion	Francisca Arabelle Treurnicht
STADIO School of fashion	Sanri Mostert
Tshwane University of Technology	Victor Mokaba
Tshwane University of Technology	Mienke Fouche
Tshwane University of Technology	Janine Lewis
Tshwane University of Technology	Laetitia A Orlandi
Tshwane University of Technology	Tsholofelo Matome
Tshwane University of Technology	Tumishang Sekhu
Tshwane University of Technology	Omphile Mathuloe
Tshwane University of Technology	Prof Anne Mastamet-Mason
Tshwane University of Technology	Mr Aubrey Ramatla
UCT	Hermie Delport
University of Johannesburg	Ronmari Roux
University of Johannesburg	Jacqueline Batchelor
University of Johannesburg	C van Zyl,
University of Johannesburg	Pia Findlay
University of Johannesburg	Elana van der Wath
University of Johannesburg	Ilse Prinsloo
University of Johannesburg	Ilhaam Khan
University of Johannesburg	Christa van Zyl
University of Johannesburg	Oratile Rose Mokgatla
University of Johannesburg	Oratile Rose Mokgatla
University of Johannesburg	Terence Fenn
University of Johannesburg	Martin Bolton
University of Johannesburg	Marisca Deminey
University of Johannesburg	Amanda Breytenbach
University of Johannesburg	Hadassah Myers
University of Johannesburg	Ashton Margarete Moseley
University of Johannesburg	Pia McFindlay
University of Johannesburg	Chiara Croci
University of Johannesburg	Thato Radebe
University of Johannesburg	Lindelihle Bhebhe
University of Johannesburg	Dr Marlize Groenewald
University of Johannesburg	Prof. Neshane Harvey
University of Johannesburg	Nomalanga Mahlangu
University of Johannesburg	Jabu Makhubu
University of Johannesburg	Simphiwe Mlambo
University of Lincoln	Marina Hendricks
University of Pretoria	Francine van Tonder
University of Pretoria	Adrie Haese
University of Pretoria	Cobus Bothma
University of South Africa	Elizabeth Kempen
University of Stellenbosch	Karolien Perold-Bull

University of Stellenbosch	Kirsten du Preez
University of Stellenbosch	Hesté Coetzee
University of Stellenbosch	Mieke Hall
University of Stellenbosch	Karolien Perold-Bull
Vaal University of Technology	Le-nika Strydom
Vaal University of Technology	Dr H van Staden

Notes..

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

Notes