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**2024 Undergraduate
Research Conference**

NKOSINI NGWENYA (Ed)



2024 Undergraduate Research Conference

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2024 Undergraduate Research Conference

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Introduction

The Academic Development Centre and the UJ Library presented the fourth annual Undergraduate Research Conference on 1 October 2024. The broad purpose of the conference was to showcase undergraduate research at UJ and to develop undergraduate students in preparation for possible postgraduate studies. All the faculties and the colleges were represented in what was a cross-disciplinary conference.


Students wrote short articles about their research projects, which were presented in this first edition of the UJ Undergraduate Research Conference monograph.



Chapter 1

Access and Barriers to Education in Africa

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Africa is known for many things; one of the things it is famously known for is the fact that it has the youngest population in the world. However, access to education for many of these young people is still an issue. This article addresses the topic of access and barriers to quality education in Africa.

With 54 recognised countries in Africa, quality education for young people can play a crucial role in the growth of the continent's economy (Hanushek & Woessmann, 2010). This is because an economy is heavily dependent on the type of workers present and the type and quality of skills they possess. The ability to read and write one's name is not sufficient in today's competitive market. Therefore, it is important that African people have the necessary knowledge and skills to be productive in a globally competitive economy. As the world makes progress in technology and AI, it becomes increasingly important that Africa is not left behind. Technology is no longer seen as a luxury but as a way of life, and Africa has not been the quickest continent in integrating technology in its processes, the citizens' way of life, and ensuring ease of access to technology (Kgomoeswana, 2021). To mitigate this, we need to integrate technology into the education system. This will ensure that many people are skilled and informed about technology from a young age.

It is also important to integrate entrepreneurship into a curriculum. Entrepreneurship plays an important role in the creation of sustainable jobs and reduction of youth

unemployment, which, in South Africa, currently stands at 59.7% for people aged between 15 and 24 years and 40.7% for people aged between 25 and 34 years (Stats SA, 2024). Learning more about entrepreneurship will ensure that the youth learn more about being self-sufficient and less dependent on the government.

Although there could be improvements in the current curriculum, it would not be beneficial to implement any improvements; however, according to data from the UNESCO Institute of Statistics, “almost 60% of youth between the ages of approximately 15 and 17 are not in school” in Africa (UNESCO, 2024). This raises the following question: what are the barriers that exist that make access to education impossible for many on the continent? First, an enormous gender gap exists between girls and boys who are of school-going age, with the exclusion rate for girls being 4% higher than that for boys. This is largely due to economic constraints. In countries such as Ghana and Cote d’Ivoire, education does not come cheap. Before a child is sent to school, parents need to consider the costs involved, such as clothing, books, and food, with average educational expenses costing \$87 per child in Ghana and \$151 per child in Cote d’Ivoire (UNESCO, 2023), whereas most civilians live off \$1 per day (Ombati, V & Ombati, M, 2012). Regrettably, a preference is often given to the male child to attend school, as some cultural views and societal expectations are that the male child should be the breadwinner and financial provider and the one to carry the family’s name.

Wars and famines play crucial roles in limiting access to education and the quality of education. Countries such as South Sudan and the Democratic Republic of the Congo are prime examples of African countries that are currently facing wars. The unfortunate reality of war is that the youth are mostly affected, either as bystanders, who are caught up in the crossfire, or are recruited to fight in wars they know nothing about, and in some cases, young girls are recruited into forced marriages with “soldiers” (Abdi, 1998; Boyden & Ryder, 1996). It therefore becomes an enormous risk for any parent living in such affected countries to send their children to school and risk the possibility of losing them forever. These wars affect not only the ability

of children to go to school but also the capacity of schools to provide quality education, such as wars often result in bombings that affect infrastructure and the ability of educators to be physically present in the classroom and give children a quality learning experience.

The increasing number of climate change issues affecting the whole world presents an even greater problem for the African continent's access to high-quality education. This issue presents itself in the form of famines and food insecurity. South Sudan, northern Nigeria, and northern Ethiopia are some of the countries that are severely affected by climate change on the continent (Maxwell Howe, & Fitzpatrick, 2023). According to the World Health Organization (WHO), 1 in 5 Africans faces hunger daily (WHO, 2024). A school-going child cannot be expected to go to school hungry and fully participate in the classroom. As a result, many opt to drop out of school to assist the family in earning a living.

Africa has considerable potential, especially when one considers its large number of youth. For the continent to continue progressing, education barriers need to be mitigated.

In conclusion, education is an important tool that can be used by governments worldwide to improve their economies. However, some barriers exist that make access to education impossible for some, and before one can address the change in curriculum provided, it is important to ensure that quality education is a reality to all, if not most, of the population.

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Chapter 2

How Commerce 100 can Help in Integrative Learning and Enhanced Metacognition for First-year Bachelor of Accounting Students

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Accounting is best described as a dynamic and an ever-evolving environment. The best depiction of such is through its transformative nature within the competence and expertise needed by students to qualify as chartered accountants. An example of this is how SAICA has continuously revisited and renewed its competency framework, dating from its first revamp in 2021 to the continuous updates approved in October 2023 (SAICA).

When referring to a field such as accounting, students need to have a clear understanding and astute comprehension of the interdependence of this field with other fields. Accounting is not merely a single field operating within the commercial sector; however, it is a field that works in coexistence and cooperatively with other fields. Therefore, it is from this aspect that the hypothesis that the future of accounting is very much collaborative and the actualisation of integrative learning and enhanced metacognition with learning materials forming part of the accounting curriculum (i.e., commerce) by accounting students being vital can be made.

The objective of this article is to provide insight into first-year Bachelor of Accounting students in adopting the skill of viewing and learning their modules in an integrative manner



and enhancing their metacognition through their learning. In providing a practical illustration and application of this, this academic piece explores this concept with reference to how the assistance of Commerce 100 may enable them to adopt the above-mentioned skills.

Integrative Learning

An integrative approach in regard to learning refers to a strategic mechanism in the comprehension of learning materials by accounting students, where the necessity of commencing in actions and where the integration of various types of knowledge and perspectives within an interdisciplinary degree of study are highlighted. This refers to the ability of students to learn individual modules in a composite manner. They look beyond the spec of a specific module in that specific field and take the fundamentals, linking them to related aspects where it is in conjunction with another module (Huber, Hutchings, Gale, Miller, & Breen, 2007).

Various obstacles exist within the adoption of integrative thinking skills by students during their studies. This can be substantiated by research conducted by du Toit, Marx, and Smith (2024), who conducted a quantitative and qualitative study on the barriers that learners encounter in their quest to acquire integrated thinking abilities. The results, ranking from the highest to the lowest barriers, were as follows: first, pupils lack comprehension of integrative reasoning; second, students experience difficulties with adjustment; third, language barriers exist, as the majority of pupils have to learn content and formulate responses and comprehension of content using language, which is their second language, and therefore find it difficult to process the material in an integrated inquiry; fourth, pupils find complexity uncomfortable and prefer to stick to their normal routines and learning styles and then change them for the unknown; fifth, students are only exposed to interdisciplinary studies tertiary through integrative thinking, which is foreign to them; and finally, students tend to be overwhelmed by the technical content of the syllabus.

Chapter 2

In answering the question of how can Commerce 100 aid Bachelor of Accounting Students by enhancing their integrative thinking expertise? Individuals must first have a precise understanding and clear conception of what Commerce 100 is and the conjunction it shares with accounting.

Commerce refers to integrated study, which focuses not only on the business management segment of an organisation but also on all the units making up an organisation and processes in an interlinked manner. The objective of such a study is to provide assistance to pupils on intellectual competence and gain practical expertise in the comprehension of general management through the use of historical and modern mechanisms and the integration of management tasks, that is, planning, leading, controlling, and organising (Hughes, 2024).

The objective of this module is to cultivate the students' basic theoretical academic knowledge on gathering, integrating, and disseminating information that can be used to give them a global overview of management functions and prepare them for challenges in the multicultural business environment in South Africa (Hughes, 2024).

First-year accounting students should therefore have a clear understanding of this aspect and work concurrently in the achievement of these objectives during their course of learning commerce. They will be able to adopt integrative thinking, as a module such as commerce will provide assistance with granting students the capacity to have a broad perspective of each interlinked process from various disciplines working cooperatively in the achievement of the end results of accounting. According to Haji, Mohohlo, Mutshutshu, and Sibiyi (2022), such achievement will help with the provision of general-purpose financial statements meeting qualitative and quantitative characteristics so that the users of such information can make informed economic decisions that are vital in accounting.

The conjunction between accounting and commerce can be drawn. When we talk about integrative thinking within accounting, we refer to taking the deliberate examination of

an organisation of the connections between the capital it utilises and its different operating and functional units and the collaboration of such to the success of a business (Ecim & Maroun, 2023). When referring to integrated thinking within commerce, we refer to the adoption of the core academic knowledge, intellectual abilities, and practical skills necessary in the application of functional management concepts such as information management, financial management, human resource management, marketing management, operational management and external and internal communication.

Enhanced Metacognition

A revolutionary impact that the modern economy has had is the transition from focusing solely on the intelligent quotient (IQ) to having a harmonious balance between the IQ and the emotional quotient (EQ). This can be depicted within the research conducted by Parker, Summerfeldt, Hogan, and Majeski (2004) in examining the correlation of emotional intelligence with academic success. They gave students short emotional quotient inventory forms to complete and, upon comparison of the results obtained by students and those from the EQ, concluded that academic success was strongly associated with several dimensions of emotional intelligence.

The findings above indicate that the transition from high school to university is a significant leap. This shift relies not only on advancement within the intrapersonal sphere of an individual but also on the interpersonal sphere and a balanced composition of all criteria composing an individual. Therefore, metacognition plays an important role in ensuring this harmonious balance for accounting students during study.

Metacognition, as Lai (2011) simply puts it, is the process of “thinking about thinking”. It consists of regulation and knowledge. Lai (2011) further elaborates that metacognition involves understanding oneself as a learner and the variables that could affect performance, as well as understanding various techniques and knowing when and why to apply them. Metacognition regulation entails monitoring one’s cognitive

processes, including planning, being aware of understanding and task performance, and assessing the effectiveness of monitoring techniques and procedures. The main concept that needs to be highlighted is how metacognition is an actualisation of EQ and IQ.

Metacognition is therefore vital for accounting students, as within the competence of having the necessary technical skills and business acumen is the necessity of having the correct personal skills and intellectual competence to translate information within various sectors of the economy to communicate it to stakeholders.

Commerce can provide assistance to accounting students, as it equips them with essential skills necessary to respond to the challenges that may occur in launching a business, selecting an appropriate organisational structure for the setting, resolving issues that arise as a typical business expands and becomes established in the South African business landscape, and defining the roles and responsibilities of management (Hughes, 2024). Therefore, not only will commerce be assisting accounting students in acquiring the necessary business acumen but also with their self-employment.

Commerce can play an important role in enhancing metacognition within learners, as they can use models such Total Quality Management, which, according to Daft (2020), refers to the efforts of the implementation of actions aimed at continuous improvements within processes and systems, not only with respect to an organisation as a model to ensure quality. However, the implementation of habits, actions, learning styles, and comprehension, which are of high quality and provide positive effects on interpersonal and intrapersonal expertise, should also be ensured.

Furthermore, students may even use business management functions such as planning leading, controlling, and organising to stimulate awareness within their own individual course of action and ensure that they have a clear and precise understanding of their actions and outcomes and build assertiveness within themselves from an early age.

This practical adoption of learning materials not only in an integrated manner with other disciplines but also beyond academic specs and personal specs will assist in conducive behavioural patterns by meeting competency requirements and diversifying unique candidates.

In conclusion, commerce can be a strong stimulant for improved metacognition and integrative thinking. Accounting students must adopt expertise to reconcile conflicting viewpoints, combine diverse bits of information, and adjust quickly to changing conditions as they navigate complicated market systems. Through this process, a unique capacity to synthesise information from several disciplines is vital, as it leads to a deeper comprehension of the complex interrelationships among social, environmental, and economic issues. First-year accounting students need to be well conscious of their own cognitive biases and preconceptions to make well-informed decisions, as they will operate in volatile and unpredictable environments as future chartered accountants.

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Chapter 3

A Reflection on my Journey as a First-Year Bachelor of Accounting Student at UJ

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My name is Naphtali Moshe Aphane, a first-year student studying for a Bachelor of Accounting at the University of Johannesburg (UJ). As a Commerce 100 student, I have done a lot of academic writing that requires extensive research. I have learned a lot of skills from doing research. I have learned how to perform well under pressure. I have learned to think critically about certain problems and solve them without falling short of ethics. Commerce 100 equips us, students, with the necessary knowledge on how to gather, integrate, and spread widely the information that can provide us with a global overview of the business environment in a multicultural context (Hughes, 2024). This module provides students with insight into managing certain crises in the business from a manager's perspective. This is done by reading case studies and solving a problem from a manager's perspective. This work will elaborate more on how those points were achieved.

The task we are given is to assess our knowledge to test if we remember what we have been lectured on. Our lecture tests our knowledge to check if we understand the content. We are then required to apply everything that we learned throughout, through the means of finding any business case study to link it to the theory that we have studied. We then must synthesise all the knowledge we have acquired across the different modules to evaluate a solution for a specific case study by integrating

our knowledge. At the end of the research on the specific topic, we are required to criticise that topic. We are open to giving our point of view on the facts presented. In this way, we are ensured of having been engaged with the content. In the assessments of the forum, we were required to research companies of our choice.

There is a forum that struck my interest. In that forum, we were required to find any example where a business practices any tool and technique that enables control in an organisation. In this research, I was required to research any company of my choice to determine what technique of organisational control that the company uses. I chose Swimming Pool Cover Inc., located in California in the United States, as a company of interest. That company used open-book management to control its staff. They share financial information with their employees to show them how the company is performing. In the forum, I had to explain what open-book management is. To do that, I did in-depth research on open-book management to obtain an idea for my starting point. I started by doing in-depth research on open-book management to ignite ideas. I had to link the theories from our textbook with Swimming Pool Cover, Inc. This research made it easy for me. I also discussed the pros and cons of open-book management.

I approached the forum, sat down with drafted questions, and brainstormed. I wrote everything that I thought would apply to my answer. After answering the question with my knowledge, I then went to the Google Scholars search engine and searched "Open-book management". I used Google Scholar because it provides academic sources. I downloaded three sources that were most relevant to my topic. I read all those documents. They provided me with better insight into what open-book management is all about. However, I was only able to use one document as my reference. I was able to pick what was most relevant to what I was writing about. I referenced all my sources to show my lecture where I obtained the facts I presented in my work. Processing the information that I read and filtering out what I did not need was the most interesting part for me. I realised that other information can be good at

providing me with good knowledge. That information does not contribute to my writing, but it is good for me to broaden my perspectives.

Through this perspective, I can now navigate through the trials and tribulations of the business. I have learned how to use my technical skills from a theoretical perspective to integrate them into research that will solve a problem in a business. For example, there was another forum where we were required to do research where someone was violating a business ethics dilemma. In my research, I found that several companies broke an unwritten rule. One of the companies that acted in an unethical manner was SAP, a German multinational software company. Its subsidiary in South Africa soon accepted kickbacks from Eskom and Transnet to guarantee them a contract.

In my research, it was clear that it is not illegal to receive kickbacks; however, it is not fair to do so in comparison with other companies. Therefore, it is not good to do so. It is a great way of learning ethics through case studies. Dr. Rouse CA (SA) (2024) said sometimes it is weird to say that you are going to teach your students ethics, but it is possible by way of case studies. When we are given case studies where people are engaged in unethical activities, we distinguish wrong from right (Rouse, 2024). We develop a systematic way of behaving ethically. I used to believe that ethics were only taught at home when you are young, but this module changed my whole perspective. Ethics can be taught even when individuals are older.

The other thing that I have learned with this course is to continuously learn. The information is continuously updated. We need to consciously update and refresh our knowledge. I started to have a deep understanding of how to filter important information from massive information. I gradually improved on that by reading many articles and writing essays and reflections. Commerce exposed us to how to research companies in theory and practice. The university also allows tutors to take us step by step and provide us with one-on-one sessions, which enhances our understanding.

This module taught us how to use integrated methods. Earlier this year, our lecturer launched the JSE challenge. The JSE challenge is a gamified challenge in which we are required to invest in listed companies in Johannesburg. It is a teamwork activity; we were allocated to groups of four individuals each. To register with JSE, we were required to pay a fee of R100. We were instructed to fundraise a minimum of R100 through any kind of entrepreneur. We were also instructed in all the phases of development, such as introducing ourselves, brainstorming, managing conflicts, and presenting our financial information in a video clip. This was a nice opportunity to use AI to upskill myself through learning software to create videos to speed up the process of being creative.

We used Word and Microsoft Excel as AI tools to prepare financial statements. I used online courses to learn most of the Microsoft Word and Excel features. Those Microsoft skills were the catalysts for finishing our project on time. I also took an online course in SkillsShare, an online website and an AI tool. The course was on videography. That course also helped me with taking videos for our project, editing and inputting most of the features. I was not perfect on my first try, but it has provided me with a great foundation on how to create effective videos. In addition, I have taken an online course on how to speak in front of the camera. This extra work that I have taken to prepare for this project might seem unnecessary, but it has saved me much time. The time when I engaged with my teammates, it was a lot easier to complete the project since I knew what to do. As I have said, I was not perfect, but I was able to move faster and focus on the core content of the project.

I did a research essay in one of my modules where we were required to research whether it is ethical to use AI in academics. The answer was not whether it was ethical or not; it was whether you used it ethically or not. However, it is not recommended. As a business-minded student, I was keen on learning AI and bringing it into solving problems that we are facing in South Africa, which are poverty, inequality, and unemployment. In most instances, I used AI tools to enhance my learning. I also took an online course at the University of

Johannesburg, named the Fourth Industrial Revolution, which provides insight into AI. The course provides a case study on how China used robots for most services, such as checking stocks that are not in good state and reporting to the manager, where someone must replace that stock.

To date, I have developed the fundamentals of managerial skills. I have developed a sense of what business is all about. I have insight into the corporate world. The study of commerce has exposed me to most corporate trials and tribulations. This module has not only equipped me with technical skills but also with soft skills, both of which are essential for the corporate world. It has taught me how to integrate my studies with the incorporation of AI since we are in the Fourth Industrial Revolution. It has not only provided me with the theoretical part of the business but also with the practical side of corporate through a mixture of case studies and projects where I do it solo and engage with my colleagues. Through that, I have learned how to deal with different types of people.

I have learned how to integrate different types of knowledge and information to solve problems. I also learned how to incorporate AI into solving problems. I have experience in how AI can catalyse my effectiveness and efficiency. I have performed better in tackling my academics in terms of fairness, transparency, and integrity. My takeaway from this module is to keep enriching my knowledge and to keep up with the updates on the market to make informed decisions. Also, I learned to know how to communicate with my colleagues (it can either be my employees or employers and customers to improve my services) to obtain as much information as possible.

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Chapter 4

Impact of AI on Undergraduate Learning

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Coming from somebody who was in matric last year and has recently been launched into a world of hard work, continuous study, and emerging technology, I must admit that AI is a fascinating technological tool that has captivated the minds of many. It can be used for just about anything, especially helping the upcoming generations of professionals – for good or for bad. This essay aims to discuss various effects that AI has had on modern practices, with a focus on how it has affected the study of undergraduates.

What AI Is

According to the European Parliament (2023), artificial intelligence, more commonly known as AI, is a complex web of coding that allows software to act almost human by performing humanistic functions such as having casual conversations (Meta, 2024), creating art (Guinness, 2023) and even editing pieces of writing for the user (Ellefson, 2024). It aims to help people focus on more important aspects of their lives by performing menial tasks for them. However, day-to-day menial tasks are different for everyone, which is why AI has been developed so that it may apply itself to many different situations.

How AI Is Used to Benefit the General Society

Many people believe that AI is not yet a requirement in their lives and that it is merely a convenience. They are mistaken,

however, because most of the software one uses is run by AI. Simple tasks such as biometric identification when accessing one's cell phone (via fingerprints and facial recognition), online advertising that leads to online shopping, and subtitles and translations of videos and various other media are just a few examples. In fact, this essay identified these different uses proposed by the European Parliament (2023) because search engines such as Google exist, which are run using AI.

How AI Is Being Used by Students

A large part of South African society is youth (Worldometer, n.d.), a majority of whom are studying to some extent (Statistics South Africa, 2024). Once one reaches a tertiary educational institution, one is taught about the importance of adapting to advancing technology to stay current and relevant. If one falls behind the uses of technology, it may be difficult to pass and even retain a stable career. Not everything is taught during lectures, however, and much information and advice about these various uses are exchanged among the students themselves.

There are several ethical ways to use AI. An example would be to reference the work that the AI produced instead of claiming it as one's own – this involves rephrasing the given text into one's own words as one would ordinarily do with academic writing (Foltynek et al., 2023). An even better alternative would be to use AI to explain a certain concept in simple terms so that the student may gain an understanding of the topic before looking into more complex academic writings. A safe and easily accessible example of such an AI tool that may be used for this purpose is WhatsApp's Meta AI (Meta, 2024). If a student opts for this alternative, they can even request that the AI tool provide academic sources for the information that the student may proceed to use. Unfortunately, very few studies have officially taught new students how to use such AI tools in this way (Foltynek et al., 2023).

Despite these productive methods of integrating AI into one's learning, many students face many problems when attempting to do so. The first is the intentionally unethical behaviour of people who are not necessarily students. Such

people may use AI to generate fictitious content, which is then posted on various websites and platforms that are easy for students to access. Alternatively, artists and researchers may use AI to generate realistic or true content, label it correctly, and then a third party removes and reposts the same information without disclaimers stating that the work is AI (Rossi, 2024). Students may believe that false information is true or that artificially generated images are real and use these items in their bodies of work. Experienced academics have more exposure to academic sources and are therefore more likely to identify when a piece of writing appears to be artificially generated, but younger students – particularly undergraduates – who are new to the idea of academic writing may lack this skill (Foltynek et al., 2023).

The second problem lies with reference. This essay previously touched on how AI is often used by students since its ability to write well has improved (Ellefson, 2024). It can produce full, cohesive articles of work based on reliable sources, and this ability is sadly unused or abused. When the ability to cite reliable sources is unused, students are afraid of referencing the work because they either do not know how to do it or they are afraid that their educational institution will penalise them for not using widely accepted academic sources (Foltynek et al., 2023). When abused, rather than forming their own pieces of writing based on personal research, some students choose to have an AI tool complete it for them, and they submit AI-generated answers. This is an act of intentional plagiarism and is therefore unethical (Diamond, 2024). Furthermore, because students in earlier years of their studies (particularly undergraduates) are usually marked more leniently, they are less likely to be caught committing such plagiarism than are students who are, for example, working towards a doctorate and are therefore more likely to participate in such activities. In contrast, recent studies have investigated the frequency of younger students using AI in this manner, and the minimal results available have shown a decreasing trend in cheating overall since the introduction of AI (Spector, 2023).

Consequences of Using AI Unethically

Using AI for unethical behaviour in an educational setting is dangerous for any student. Whether it is used to commit plagiarism through stealing intellectual property or to dampen creativity and innovation (Ofem et al., 2024), such behaviour is punishable by the institution alone, as there is no official legislation in the law of South Africa as of yet (Ka Mtuze & Morige, 2024). Furthermore, it puts future clients at risk. For example, if a medical undergraduate student uses AI tools to formulate assignments to be submitted (Reich, 2022), they learn little about the research process (Villegas, n.d.). They are most likely incapable of furthering their studies to become a certified doctor. This is because the student has not fully completed the requirements of becoming a doctor ethically and may lack sufficient knowledge needed to succeed in this field of work. As one can see, it is not only the users of the AI who may be affected but also the general public.

Some Personal Experiences with AI

As the author of this essay, I am an undergraduate in my first year and am in contact with many fellow undergraduates. For my own work, I have occasionally used Meta AI to help explain certain concepts in economics and accounting because I could engage in an exchange of questions and answers until I was satisfied with my understanding. For one of my essays earlier this year, I struggled to find a topic to discuss. I gave Meta AI a summarised version of my essay question, and it responded with several options about which I could write. Once I had told it which option I wished to use, it even gave me an idea of how to structure my essay (which I later decided against using). I found the topic easy to write about and ended up receiving a distinction for the essay. My university – University of Johannesburg – has also been forward-thinking enough to introduce an online AI course to assist students who are interested in and learning about these technologies (University of Johannesburg, 2021), and I have chosen to partake in this course.

I have also talked to multiple other undergraduate students about this topic, and they have had similar

experiences. Some of my colleagues have used it in various ways, for example, to summarise whole textbook chapters to make studying easier or to summarise and extract key points from case studies we were to be examined. Most of my colleagues make use of AI tools that assist in improving their grammar; Grammarly is the most common tool (Ellefson, 2024). I have also talked to several people who have used AI to generate full pieces of writing, which they later submitted as their own work; however, all of these have been in situations in which they may have been joking with their friends.

In conclusion, our world is developing very quickly within the realm of technology. To keep up with current events and trends, everybody must keep up with this developing technology – especially students who are entering educational institutions that allow them to enter professions later in their lives. Because it may seem challenging to use at first, tertiary educational institutions ought to educate their new undergraduates on these topics if they have any hope of creating stable, promising futures for their students.

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Chapter 5

Development of Employees Time-Tracking App

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Background

Through the creation of a mobile-based employee time-tracking application, the SMART TIME app initiative seeks to enhance time management in businesses. The research team thoroughly examined current time-tracking programmes and modified them to satisfy the requirements of a fictional business. By reducing administrative work and avoiding fraudulent clock-ins, they sought to develop an intuitive mobile application that improves payroll processing, expedites time tracking, and increases productivity.

Statement of the Problem

Despite their robustness, many time-tracking apps on the market lack the adaptability necessary to meet the demands of organisations. The suggested SMART TIME app seeks to close these gaps by providing a flexible and safe time-tracking system that lowers administrative costs and increases worker productivity and engagement.

Limitations and Scope

Designing a mobile-based employee time-tracking application that incorporates necessary functions, including work-hour monitoring, geo-fencing as alerting systems, and payroll processing, is part of the research scope. By making time management easier, eliminating fraud, and guaranteeing accurate payroll processing, the software seeks to increase productivity.

Limitations include the research focus on important elements for employee time monitoring, avoidance of more specialised services such as advanced analytics or integration with complicated corporate systems. Instead of being implemented in a real-world business setting, testing and validation are based on a hypothetical firm scenario. Customisation capabilities may be limited by technical constraints, such as the availability of resources for executing complicated operations such as real-time geo-fencing.

Theoretical Framework

1. Information Technology Compliance: This model explains how users accept and use a technology. In this context, carrying out these concepts is helpful in informing the design in such a way that it would be user friendly and useful for both parties.
2. Use of Technology: This helps in identifying some of the factors that increase employee interest in using time-tracking applications effectively, such as IT support and staff training.
3. Behavioural Management Theory: This theory addresses the behaviours of employees and their motivations in the workplace. The design of an application can be based on positive factors, such as rewarding an employee for clocking in on time, which increases productivity.
4. Time Management: This is the framework that basically discusses how one can manage time to achieve goals effectively. The application is intended to provide insights into the usage of time to understand trends and ways to improve work hours spent by employees and management.

Conceptual Framework

Traditional time-tracking methods, which rely on employees manually clocking in and out, are prone to inaccuracies due to human error or intentional manipulation, such as where one employee clocks in for another. These inaccuracies undermine accountability and can lead to payroll inefficiencies and increased labour costs. Geo-fencing technology, which creates virtual boundaries around workplaces, has the potential to automate the process of clocking employees in and out based on their physical location, significantly reducing these inaccuracies.

However, the introduction of location tracking through geo-fencing has raised concerns regarding employee trust and privacy. Employees may feel uncomfortable with the perception of being continuously monitored. Geo-fencing solutions can be designed to track only employee locations within defined work areas and during working hours.

Goals and Objectives

The objective of our study is to benefit organisations by offering an application that will help both management and staff maintain accurate accounting of time and, more importantly, achieve effective on-the-job productivity. We designed the app to gain (and provide) insights into how time can be more effectively used and, just as importantly, how the app can assist in maximising and enhancing productivity in the workplace. The app also features an important inclusivity aspect; it will serve by helping and, in part, “talking to” those employees with vision impairments. The app exists, first and foremost, to help organisations maintain a healthy workplace.

To achieve successful outcomes, as part of our research, we needed to address certain queries. We wanted to understand what kind of time-tracking app would, not only in the present but also in the foreseeable future, best serve organisations.

- What capabilities and attributes should this perfect app possess?

- Is integrating the tool with other systems, such as HR and payroll, worth the effort, or would it add only unnecessary complexities?
- Would the employees, at the forefront of the organisation, be open to using the application, or would they push back against it instead?
- If we implement a digital time-tracking system, would it be better or worse for our staff to log their work hours with a smartphone app than with a manual system?
- Last, would utilising the application bring any quantifiable advantages to the organisation?

These were just some of the few questions that we address in our study.

Significance of the Research

As we now live in a much more automated world that is powered by the 4th Industrial Revolution, we wanted to develop a solution for companies, large or small, to transition to evolving technologies in their entities to increase efficiency. We saw a gap within entities that are behind by struggling to evolve into a more digitalised environment as they are still using manual systems such as physical clock-in systems. This study focuses not only on the development of a time-tracking app but also on the development of an app that will ensure ethical behaviours within the workplace. Manual data/time tracking can easily be manipulated and accessed without proper authorisation; therefore, this study will address how this app will have appropriate controls and measures to counteract and avoid such breaches.

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Chapter 6

Use of Current Cutting-Edge Technologies in South African Physical Sciences Classrooms

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Abstract

Technology is a dynamic tool that has revolutionised numerous vocational industries, particularly education. As an undergraduate student at the University of Johannesburg with majors in physical sciences and life sciences, it is troublesome and fascinating to observe and witness the potential and problems that arise due to the adoption of different technologies for physical sciences teaching and learning in South African classrooms. Tools such as virtual reality (VR), augmented reality (AR), and AI can help students visualise complex scientific phenomena that might be difficult to grasp through traditional methods. However, the integration of these technologies presents significant challenges, especially in the context of South Africa, where there are disparities in access to resources, limited funding, and gaps in teacher training. This duality of immense potential constrained by practical challenges highlights both the promise and the complexity of effectively integrating technology into education.

The primary aim of my interest in the use of technologies in physical sciences classrooms is to study and report on the effectiveness of various innovative technological tools that

physical science teachers can use to teach abstract physical sciences concepts, enhance learners' learning experience, motivation, and promote the development of the four Cs of the Fourth Industrial Revolution – critical thinking, communication, collaboration and creativity. Despite the ongoing advocacy of the use of technology and innovative pedagogies, science teachers across the country are still using traditional, teacher-dominated approaches that are not effective in helping learners acquire full conceptual understanding and necessary skills for the 21st-century era and beyond. Even those who have access to different technologies for teaching and learning are not using them effectively because of numerous challenges, such as large class sizes, a lack of adequate knowledge and skills, and a lack of confidence. Currently, technologies such as artificial intelligence (AI), VR, and AR are being introduced as cutting-edge, innovative and effective technologies that South African physical science teachers can use to enhance learners' conceptual understanding, motivate learners towards learning science, make learning fun and interesting, and equip learners with relevant 21st-century skills.

Accordingly, the focus of this study is to explore the integration of cutting-edge technologies such as VR, AR, and AI in South African physical sciences classrooms, with a particular focus on their adoption, effective utilisation, and impact on learners' learning outcomes. A mixed-method approach was employed in this study using face-to-face interviews with semi-structured questions to assess physical science teachers' perceptions and experiences and through classroom observations of how they implement these technologies. The findings reveal a growing interest in the use of technologies such as VR, AR, and AI for the teaching and learning of physical sciences; however, there are numerous challenges that hinder the effective and optimal utilisation of such tools. Challenges such as inadequate resources and a lack of teacher training have a negative impact on the effective implementation of VR, AR, and AI for teaching and learning of physical sciences in South African classrooms. Therefore, this study concludes with recommendations for policymakers, teacher-educators, higher education institutions, and technology companies and providers to collaborate and

work together to overcome these challenges and help teachers optimally use these cutting-edge technologies in South African physical sciences classrooms.

Introduction

Incorporating advanced technologies in education has become very important, as it prepares learners in schools for this fast-changing world, which has many ICT resources (Dimitriadou, 2023). In South Africa, where physical sciences are challenging due to abstract concepts, technologies such as VR, AR, and AI provide creative solutions to overcome these conceptual challenges. While there is support for using technology in education, South African physical sciences classrooms face challenges in integrating these tools because of a lack of resources, inadequate teacher training, and the continued use of traditional teaching approaches. This research aims to assess how well VR, AR, and AI can be integrated into physical sciences classrooms in South Africa; it also aims to examine the obstacles to adoption and potential outcomes. It explores educators' encounters, obstacles to utilising technology, and how these resources can improve students' learning experiences through endorsing critical thinking, communication, collaboration, and creativity (the four Cs of the Fourth Industrial Revolution).

Literature Review

I will summarise how technology is used in education, with a particular emphasis on the emerging tools of VR, AR, and AI in the sciences. Most of the time, individuals wonder what VR and AR are and how they were introduced to the world. There is a need to shift the way teaching and learning occur because traditional methods are becoming less useful, especially in STEM fields such as physical sciences. Hands-on, interactive methods are necessary to involve students in the current digital era. This factor was also a consequence of the impact of the COVID-19 pandemic worldwide. The pandemic sped up the adoption of online and digital educational resources. Educational institutions around the world had to adjust to online learning platforms (Guzzo, 2023).

The difference between these ICT tools is that VR is an immersive experience in which learners use devices such as headsets to explore a fully simulated environment, whereas AR is a technology that overlays digital content in the real world, often through apps on smartphones or tablets. Research has indicated that VR can be effective in science education by creating immersive learning environments that enhance learners' understanding of complex scientific concepts. AR allows digital content to be placed over the real world, assisting in comprehending spatial and abstract ideas within physical sciences, such as forces and motion.

Obstacles to incorporating technology in South African classrooms: Recent research has identified difficulties in implementing technology, including limited resources and inadequate teacher training (Letseka, 2022). Additionally, systemic problems such as unequal funding and lack of infrastructure add to the delayed adoption of these technologies. The focus on the 4Cs, which includes critical thinking, communication, collaboration, and creativity, in education corresponds with the objectives of the 4IR. The literature emphasises how crucial these skills are in preparing learners for future jobs and ensuring that they can succeed in a world dominated by technology (Mohapi, 2024). These are the skills that are acquired by all the learners, which may have started at the very wrong time, but the technological tools make learners interested while also contributing to the skills required.

Research Methodology

This research utilises a combination of qualitative and quantitative data in a mixed-method approach to provide a thorough analysis. Face-to-face interviews with semi-structured questions were conducted with physical sciences educators from different schools in Gauteng (Soweto) and KwaZulu Natal (Zululand) in South Africa to gain insight into their views and interactions with VR, AR, and AI technologies.

Additionally, classroom observations were carried out to assess real-time technology use and identify areas of improvement. However, during this research, it was noted that

most of the teachers never used these tools (AR and VR) in the classroom because of the lack of funding from the Department of Education. In Gauteng, only six teachers in Gauteng experienced VR in the classroom with their learners. One of the things that has been highlighted is that the learners have been introduced to the use of AI tools such as ChatGPT and Meta AI. The teachers indicated that these tools technological tools help the learners breakdown the questions.

Sample: The sample consisted of 20 physical sciences teachers from diverse socio-economic backgrounds, ensuring a range of perspectives.

Data Collection: Data were collected through face-to-face interviews with semi-structured questions, which focused on teachers' attitudes toward technology use, perceived benefits, and challenges. Classroom observations documented actual instances of technology use, where feasible, and recorded both teacher and student engagement.

Data Analysis: Qualitative data were analysed thematically to identify recurring themes. Quantitative data from a Likert-scale survey on teachers' familiarity with and comfort with VR, AR, and AI were statistically analysed.

Results

The findings of this research reveal potential benefits as well as obstacles for incorporating advanced technologies such as VR, AR, and AI in physical sciences classrooms in South Africa.

Educators' restricted exposure to VR and AR technologies: A notable discovery was that most teachers (14 out of 20) had not utilised VR or AR in their classrooms, mainly because of financial constraints. Only six teachers in Gauteng have access to VR, enabling them to showcase intricate physical science concepts using immersive environments. Most teachers are unable to utilise VR and AR tools for enhanced conceptual understanding because of their limited availability.

Integration of artificial intelligence technology in educational settings: Numerous educators are now incorporating AI tools such

as ChatGPT and Meta AI to assist students in dissecting questions and comprehending complicated subjects. Approximately 75% of the teachers believed that AI was beneficial for this purpose. Nevertheless, they also highlighted the potential for misuse, as students could become overly dependent on AI without actively practicing critical thinking.

Inequality in availability due to geographic location and economic position: The results revealed a disparity in digital access, as the urban schools in Gauteng had more resources than did the rural schools in KwaZulu Natal. Educators in remote locations stated that the lack of essential digital resources worsened the current disparities.

High levels of optimism are observed; however, there is a lack of action taken. Even with limited access, most teachers had a favourable outlook on the use of VR, AR, and AI, acknowledging their ability to improve student motivation and comprehension. Nevertheless, the lack of adequate resources continues to make implementation difficult.

Discussion

The results of this research show that teachers are increasingly interested in incorporating VR, AR, and AI into the physical sciences curriculum, but they face significant challenges in their successful implementation. Most teachers are restricted in their access to these tools due to insufficient funding from the Department of Education, causing notable differences in technological integration based on socio-economic status, especially the teachers in the province of KwaZulu Natal in Zululand, who have not received any training about the use of these tools since the schools do not have such tools due to inequalities in the distribution of resources. Educators who were able to use VR saw its beneficial effects on the learners' grasp of abstract ideas, but only a few learners were able to take advantage of these resources. One of the challenges is that these tools are very expensive.

Teachers' readiness to integrate easily accessible technologies such as ChatGPT into their teaching shows the

increasing use of AI tools in classrooms. Nonetheless, using AI too much may lead to worries about the lack of critical thinking, as students might start relying on answers generated by AI without truly participating in solving problems (Al Darayseh, 2023). This highlights the importance of providing training to both educators and learners on the proper utilisation of AI within educational environments. On the basis of these results, advanced technologies have the potential to revolutionise physical sciences education, but it is crucial to address funding, resource allocation, and teacher training issues to ensure fair access and optimal utilisation.

Recommendations

The Department of Education should prioritise funding for VR and AR tools, especially in underserved regions, to bridge the technology gap. Partnerships with technology providers could provide affordable options for schools lacking these resources. Comprehensive training programmes should be introduced to equip teachers with practical knowledge and skills to integrate VR, AR, and AI into their curriculum effectively. Such programmes need to concentrate on developing technical skills as well as pedagogical strategies for utilising these tools. With the growing reliance on AI tools in educational settings, establishing guidelines that encourage the responsible and efficient utilisation of AI is crucial. The guidelines should highlight the significance of critical thinking and advise against relying too much on AI to answer questions. Through partnerships with tech firms, the educational field can potentially obtain improved availability of VR, AR, and AI resources, potentially receiving reduced rates or contributions for disadvantaged schools.

Conclusion

This research emphasises the opportunities and difficulties of implementing advanced technologies in South African physical sciences classrooms. Although VR, AR, and AI can enhance learning experiences and boost student engagement, their successful implementation is hindered by disparities in resource allocation

and inadequate teacher preparation. Resolving these problems necessitates a united effort from the Department of Education, educational institutions, and technology providers to guarantee that all students can access innovative educational resources equally. When these technologies are incorporated efficiently, they can greatly improve student academic achievement, drive, and the acquisition of skills needed for success in the 21st century.

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Chapter 7

Property Development in Midrand: How it Physically Shaped the City

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Abstract

Urbanisation has many impacts on the city landscape such as urban sprawl, and this has been perpetuated by unsustainable urban design practices by property developers. Midrand is an example of such practices and has resulted in an unfunctionally shaped city. Sustainable urban design is important because it helps mitigate the issues caused by urbanisation, and it is important for property developers to implement these practices, as they yield good results. Waterfall City, a large mixed-use development, may be an example of such a city. This study aims to prove that the design of Waterfall is one of the first examples of sustainable urban design in South Africa. The methodology used in this study is qualitative, which uses both primary and secondary data as the collection method as well as observations of the city. These data have then been textually analysed, and the elements of Waterfall City have been compared with parts of Midrand, focusing on the roads and layout, amenities, and green open spaces to conclude that Waterfall City's urban design is sustainable and that property developers can promote unsustainable communities.

Introduction

Urbanisation is causing significant environmental impacts, such as climate change and urban sprawl, with over 50% of the world's



population living in urban areas, and this number is expected to rise to 66% by 2050. This has led to unsustainable development patterns, as cities struggle to meet societal demands for water, sanitation, clean air, and transport (Edenhofer et al., 2014). Puchol-Salort et al. (2021) explain that urban growth presents an opportunity to rethink urban planning and design to support sustainability, both in new development projects and in the retrofitting of existing spaces. Reed (2021) highlights property development as a global process involving private or government entities owning freehold or leasehold property. It involves modifying land use for structural improvements, often involving urban design, and involves various elements.

Sustainable urban design involves the careful integration of environmental, social, and economic issues into urban area planning and development (Lak et al., 2020). Ghosh (2017) defines sustainable urban design and planning as the process of organising diverse natural and humanmade aspects in cities and towns to produce ecologically responsive, economically successful, and socially inclusive locations for communities. Omole et al. (2024) assert that it incorporates a holistic vision that combines urban living needs natural resource protection and community well-being. Sustainable urban design promotes resource efficiency and environmental care through eco-friendly construction strategies, fostering a vibrant economy, and promoting sustainable practices such as mixed-use construction, density, and green buildings while respecting cultural heritage and high-quality public infrastructure (Omole et al., 2024; Carmona, 2009)

Waterfall City is an award-winning mixed-use development in Midrand that presents urban design elements that have changed the approach to property development. The urban design components may include buildings, roadway networks, pathways, trees, parks, gardens, green roofs, water, natural regions, and food-producing places. Ghosh (2017) explains how these features are incorporated into various land uses, including residential, commercial, retail, institutional, open spaces, transit, and mixed uses, to facilitate many activities simultaneously. These elements can be noted in

Waterfall City; however, whether the urban design of Waterfall City promotes sustainable development in Midrand is unknown. This study aims to investigate whether Waterfall City's urban design promotes sustainable property development in Midrand. Discussing what makes Waterfall City sustainable and how urban design can reflect that.

Conceptual Framework

Elements of sustainable urban design

Sustainable urban design incorporates functional, environmental, and quality issues into built settings through partnerships and participatory procedures (Carmona, 2009). In the process of creating such environments, some suggested qualities of such places as design rules include the following:

- places should be liveable, where everyone can live in relative comfort and security;
- places should have identity and control, in which people feel that they have some ownership and want to be involved (place attachment);
- places should offer access to opportunity, imagination, and excitement; and
- places should give people a sense of authenticity and meaning, but not in.

To satisfy the needs of such an urban environment, at least five physical qualities are required. López Chao et al. (2020) and Frey (1999) categorised the desired sustainable features down into constituent elements.

López Chao et al. (2020)

- Liveable streets and communities with plenty of sunlight, pure air, trees and plants, gardens and open spaces, well-scaled and planned structures, no annoying noise, cleanliness, and physical safety.
- a specified minimum density
- Integration of activities (living, working, shopping, public, spiritual, and recreational) near one another.

- Buildings and other items that people place in the environment should be placed in such a manner that they define and even surround public space rather than sitting alone in space.
- Various buildings and places with intricate layouts and interactions are required.

Frey (1999)

- Environmental and ecological conditions: Low pollution, noise, traffic, accidents, crime, accessible private outdoor space, symbiosis town and country;
- Physical properties of the city include confinement, densities that support services, mixed usage, and adaptability.
- Socio-economic conditions: a social mix to lessen inequality, a degree of local autonomy, and self-sufficiency.
- Visual-formal quality: The city and its constituent sections are imageable, with a sense of centre and location.
- Provisions of the city: Easily accessible public transit, decreased and distributed traffic volumes, a hierarchy of services and amenities, and access to open space

Importance of sustainable urban design for communities

Sustainable urban design is important because it is based on inclusive design principles that enable the accessibility and use of public places for all community members (Hub, 2021). Sustainable urban design emphasises social cohesiveness and connectedness (Mouratidis & Poortinga, 2020). The structure of urban places promotes social interaction and community participation. The incorporation of green spaces, parks, and community places promotes social cohesion by allowing inhabitants to connect, exchange experiences, and form a common identity within their neighbourhood (Gaudette et al., 2022). The design of sustainable urban settings directly affects citizens' health and well-being (Johnson et al., 2022). Public green zones, walkable communities, and easy access to recreational facilities all help improve physical

and mental health. The inclusion of nature in the urban landscape not only improves air quality but also lowers stress and increases general health.

Case Study: Waterfall City



Figure 1: Waterfall City CBD. Source: Bulbulia, 2023.

Property Developers: Attacq and Atterbury

Waterfall City was developed by Attacq and Atterbury, a South African REIT and real estate investment firm. Attacq focuses on smart, safe, and sustainable spaces (ATTACQ, 2023), while Atterbury builds mixed-use, commercial, retail, and industrial complexes (Atterbury, 2024). Attacq Waterfall Investment Company (AWIC) recently purchased 20% of the Mall of Africa from the Atterbury Group, acquiring 80% of the assets (ATTACQ, 2024).

Waterfall City

Waterfall City is located near Midrand, Gauteng. The neighbourhood is centrally placed between Johannesburg and Tshwane, with easy access to the N1 motorway from all directions. Waterfall development covers 2,200 hectares of land. It is larger than Sandton and extends from Woodmead to Kyalami and Vorna Valley, with the suburbs of Buccleuch and Sunninghill serving as

partial borders. The city is home to a diverse range of large-scale retail, commercial, and residential complexes, as well as schools and crèches, hospitals, and a world-class fibre-optic network. The residential area was designed to include up to 18 500 units. House prices range from R600,000 in one inexpensive home development to R160 million in the Waterfall equestrian estate (Mail & Guardian, 2016).

Kilian (2015) notes that architectural principles have been in place for residential development since its inception, with the goal of creating a residential estate whose design reacts to the climate and surroundings while embracing the use of raw building materials. The goal is to offer a uniquely South African design utilising natural materials that are ideal for the Highveld environment. According to Kilian (2015), the Waterfall Estate intends to raise awareness of green living both architecturally and through the manicured park that surrounds it. According to Bulbulia (2023), Waterfall City received the Best International Mixed-use Development 2022/23 award at the 2023 International Property Awards event. Waterfall City won the regional title of Best Mixed-use Development in Africa for the seventh time. Waterfall City has been honoured as the Best Mixed-use Development in South Africa for the seventh time.

Research Methodology

The methodology used in this research is qualitative. Data were collected from primary and secondary sources. Secondary data were also collected through journal articles, newspaper articles and documents. Primary data were collected from observations of Waterfall City and other areas of Midrand, which focused on three aspects: roads and layout design, the locations of amenities and open green spaces. The data analysis was a textual analysis as well as a comparison of observations noted in parts of the Midrand (Summerset, Vona Valley, Halfway Gardens, Blue Hills) and in Waterfall City CBD.

Results

The town of Midrand has long experienced property development, particularly housing development. In fact, because of the large part to the unrelenting commercial and residential development, Midrand has grown to become one of Gauteng's most important growth hubs (BusinessTech, 2021). Nevertheless, most of these residential developments have contributed to unsustainable urban design practices in the area, creating problems such as traffic, car dependence, and inaccessibility. The research findings will focus on the road and layout, amenities, and green open spaces and will be compared with the urban design of the larger Midrand area.

Roads and Layout

The former farmland area has undergone many transformations – from White farmers settling in the area since the middle of the 19th century to a stop-over stations where horses and mule teams could be changed.

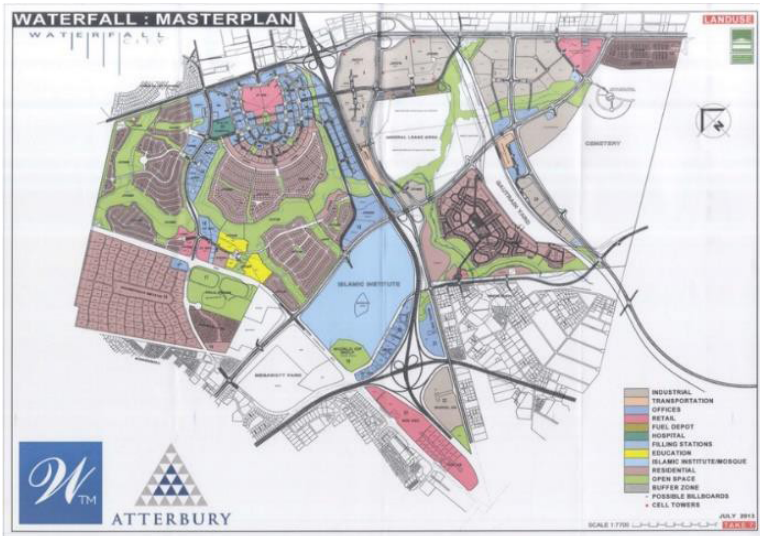


Figure 2: Waterfall City's Masterplan. Source: Murray, M., 2015.

These changes have impacted the layout and road networks of Midrand. This can be noted by incomplete roads in the area,

the narrow roads that do not accommodate the larger amounts of traffic, roads that were once connected to being separated by walls to create complexes. All these factors have shaped and impacted the road network and layout of the Midrand, and as time went on, these changes created a layout that was unsustainable, creating considerable traffic congestion during peak hours, car dependency, minimal pedestrian considerations, and a lack of access to public transport in most of Midrand. These problems are worsened by residential developments in the area through the popularisation of complexes and estates.

In contrast, the new development of Waterfall has a different, more sustainable design. In terms of road and layout design considerations, the roads are wider in the CBD, which also accommodates buses and taxis for public transport. The design considers non-motorised and cycling, with the majority of their roads having pedestrian and cycling lanes. The Waterfall City design was more coordinated and considered the longer-term effects of development as it grew, which is a sustainable way of designing an urban area.

Amenities

Amenities are facilities such as shopping centres, schools, clinics, and libraries. The development of residential complexes encouraged the development of more amenities to accommodate the larger population that started settling in Midrand in the last 10 years. Unfortunately, these developments, although trying to achieve accessibility, have created a car-dependent city. Malls are being developed in semi-secluded areas, with little public transport to access areas such as the Blue Hills Shopping Centre and Kyalami Corner. Most of the schools in Midrand are private schools, which has caused overpopulation in public schools for those who cannot afford private schools. Schools such as the Noordwyk Secondary School are quite inaccessible, and many of the students attending that school stay more than 5 km away. Public facilities such as libraries are inaccessible in that the majority of the population does not even know where it is.

Waterfall City has made accessibility an important feature in its designs. The city placed its schools and hospitals close to the neighbourhoods. Netcare Hospital is accessible not only to Waterfall City residents but also to the rest of the Midrand population, which has Life Carstenhof Hospital as its only hospital. The Waterfall City layout has almost five more shopping centres outside of Mall of Africa, which makes shopping easier for those who do not want to go to the mall to buy essential items and give them choices. These shopping centres are closer to the residential areas, and they are supported not only by the residential areas in Waterfall City but also by its surroundings, as shown in the Masterplan.

Green Open Space

The way that Midrand has developed and continues to develop land uses such as green open space is an overthought, and this can be noted by the lack of green open spaces or the availability of open spaces in undesirable locations. Most green open spaces are vulnerable areas, and these areas are hardly protected and are used as “short-cut” to access facilities of different parts of the city; for example, this wetland area next to Curro Sagewood is used to access the Noordwyk Secondary School on the other side of the wetland.

Waterfall City has 150ha of its 2200ha of land dedicated to green open space. The intentional incorporation of landscape into its design is evident and promotes eco-friendly practices. The design of the Waterfall City has created a welcoming and calming environment through the incorporation of a landscape and its green thinking designs, which make it a more desirable place to reside.

Conclusion and Remarks

Urbanisation has led to rapid growth in cities, causing urban sprawl and environmental impacts. Sustainable urban design is crucial for mitigating these issues. Property developers play a significant role in shaping cities, and their choices can either promote sustainable development or perpetuate it.

Waterfall City, a mixed development in Midrand, has elements of sustainable design that ease urban growth. Its road layouts accommodate traffic, non-motorised transportation, and access to amenities while incorporating green open spaces. These aspects demonstrate that Waterfall City's design is sustainable and that developers can create sustainable communities.

However, the major differences between Waterfall City and Midrand cannot be ignored. Waterfall City had the advantage of being developed on a large empty lot with little existing surrounding infrastructure to consider, whereas Midrand has been developing and changing in pieces over a long period of time. Compared with how property development in Midrand was done, in silos, Waterfall City is a collaboration of different stakeholders, which helps the design of the area to be more sustainable. This approach to property development is something that should be promoted more for the creation of sustainable communities. Although Waterfall City is not a sustainable city because of reasons such as its lack of integration of the low-income community, its urban design can be considered an example of a sustainable urban area. Property developers should collaborate and work with different stakeholders when dealing with areas such as Midrand, which are not plank canvas to ensure a more sustainable and coordinated environment.

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Chapter 8

Self-Care Practices of Third-year Student Nurses at a University in Johannesburg

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Abstract

Nursing students encounter stressors associated with nursing education, including demanding academic workloads, clinical rotations, emotional exposure to patient care, anxiety about grades and assignments, and financial problems for others. The article investigated third-year student nurses' self-care practices at the University of Johannesburg, South Africa. This study employed a quantitative research design with a cross-sectional approach. The respondents were selected using convenience sampling. A demographic questionnaire and the self-care activities screening scale (SASS-14) were combined as the data collection tool. Descriptive statistics were used for data analysis. The study revealed that a considerable majority of student nurses sleep less than 7–8 hours daily, consume insufficient nutritious food and water, rarely engage in physical activities, and need more time for self-connection and health examination. According to these findings, nursing students must prioritise self-care.

Keywords: *Self-care, practices, University, student nurses*



Introduction

Nursing is a physically, mentally, and emotionally demanding field that addresses many patient situations. Nurses and nursing students see everything, from a woman giving birth to informing a cancer patient that their condition is in remission to end-stage heart failure and severe injuries (Tachias, 2018:5). Nursing students often find themselves caught in a whirlwind of demanding academic workloads, clinical rotations, emotional exposure to patient care, anxiety about grades and assignments, and financial problems for others (Slemon, Jenkins & Bailey, 2021:1). However, amidst this demanding lifestyle, their well-being often takes a backseat (Younas, 2017:1). The combination of intense coursework, clinical rotations, emotional exposure to patient care, anxiety about grades and assignments and financial problems can lead to emotional and psychological distress, fatigue and decreased focus, resulting in student nurses not prioritising self-care. Self-care is crucial in nursing practice and is fundamental to the well-being of human beings, patients, and nurses. However, nurses and student nurses tend to focus more on the self-care of their patients and regularly pay little or no consideration to their self-care (Younas,2017:137). Caring for others' health is as important as caring for oneself. Inability to do that can result in one being unable to provide care and compassion for others to a maximum capacity (Nkabinde-Thamae, 2021:9-10). Although nursing students may be informed about the significance of implementing self-care, research indicates that there is little to no self-care practice (Younas, 2017:144). Furthermore, despite the significance of self-care in the lives of student nurses, no curriculum in South Africa makes provision for self-care practice integration, which is potentially due to historical factors where the centre of nursing was on patient care rather than on nurses' self-care, thus highlighting the need for further investigation to inform evidence-based interventions. This research aimed to investigate the factors that influence self-care practices among nursing students, describe currently identified self-care practices and ways in

which they can be best implemented by student nurses, and provide recommendations to enhance and maintain self-care.

Research Design and Methods

A quantitative research design with a cross-sectional approach was employed in this study.

Setting

The study was conducted at a university in Johannesburg. Johannesburg is the largest city in South Africa and is located in Gauteng Province. The university is a public tertiary institution offering over 200 undergraduate and postgraduate programmes, with a maximum of 50 first-year nursing students per year.

Study population and sampling strategy

The population for this study included all student nurses studying to become professional nurses at a university in Johannesburg, South Africa. The study's target population included only third-year student nurses registered at the university, owing to their familiarity with the programme's demand and exposure to clinicals rather than 1st- and 2nd-year nursing students. This study utilised an accessible population within a reasonable reach of the researcher willing to consent to participate.

The sample for this study was 30, which was derived from the target population of 3rd-year student nurses, which was assumed to be 39. An electronic poster including the researcher's details, the title of the study, who can participate, and important information about the study was created to recruit the study participants.

Data collection

In this study, the researcher collected data using questionnaires to collect information from participants about a study variable. These questionnaires were administered face-to-face by the

researcher at a venue organised by the researcher, which was accessible to the respondents. The questionnaire consists of two sections: Section A, which consists of demographic questions, and the self-care activities screening scale (SASS-14), which is Section B. The researcher developed a demographic questionnaire. Permission was sought and granted to use the second questionnaire. The demographic questionnaire comprises five questions, including age, gender, year of study, field of study, and residency. This self-care activities screening scale (SASS-14) consists of 14 questions and four fundamental dimensions, including health consciousness, nutrition and physical activity, sleep, and intrapersonal and interpersonal coping skills, measured on Likert scales.

This instrument's face validity was established by its source, which was determined by the measure of internal consistency, where the same variable was measured throughout. However, face validity was not established, as there was no pilot study. The construct validity of this instrument was established when self-care indicators among professional nurses were assessed (Muhlare et al, 2021:17). Potential bias pertaining to interviewer-administered questionnaires could be social desirability, and this bias was, to the best of the researcher's ability, mitigated by ensuring patient comfort and anonymity.

Data analysis

The study used descriptive statistical analysis of the respondents' demographic data and data collected from Section B of the questionnaire. The statistical mean, median, and mode of the data collected were calculated. The collected data were entered into an Excel spreadsheet and analysed. The data were summarised, and continuous variables such as age were reported as the mean and median. Frequencies and percentages were calculated based on the number of valid responses for categorical data.

Ethical considerations

The study received ethical approval from the Department of Nursing Science Committee (DRC), the Research Ethics Committee with 02A, and the Head of Department at the University, ensuring adherence to ethical guidelines.

Results

Only 28 third-year nursing students eventually participated in the survey, and the response rate was 72% for the entire target population.

Demographics

The respondents' demographic data are displayed in Table 1. All respondents were female (100%) and most were off-campus residents (64%) and between the ages of 19 and 24 years (86%).

Self-care activities screening scale (SASS-14)

The study revealed that 50% of the student nurses rarely slept 7–8 hours a day, and most of them did not eat nutritious food or drink adequate water (82%). The study further revealed that most student nurses rarely engage in physical activities (61%), with 11% reporting that they never engage in it. In addition, 71% of the student nurses needed more time to connect with themselves and others. Furthermore, most student nurses rarely examined their health (58%), whereas 3% reported that they never examined their health.

Table 1: Demographic data

Age	Frequency	Percentage
19-24	24	86%
25-30	4	14%
Gender		
Female	28	100%
Male	0	0%

Age	Frequency	Percentage
Residency		
Off-campus	18	64%
On-campus	10	36%
Year of Study		
3 rd year	28	100%
Field of study		
Nursing	28	100%

Table 2: SASS-14

Self-care	Correlation with age
Health Consciousness	0.348,
Healthy Diet	r = 0.305
Hydration	r = 0.135

Discussion of Findings

The study's findings revealed the various self-care practices that the respondents engaged in, which were classified into four dimensions: health consciousness, physical activity, diet or nutrition, sleep, and intra- and interpersonal coping skills. These dimensions encompassed a broad spectrum of self-care activities that respondents reportedly engage in to care for their physical, emotional, and mental well-being.

Health consciousness

The findings suggest that 86% of student nurses are always and very frequently alert to changes in their health, but only 39% always take a step toward examining their health. This could indicate a need for increasing recognition of the importance of managing health in the lives of student nurses.

Nutrition, hydration and physical activities

According to the statistics, most student nurses participate in physical activities infrequently (32%) or never (11%), with 29% doing so occasionally. Furthermore, most student nurses (54%) reported seldom consuming three portions of fruit and two servings of vegetables daily, whereas 18% reported never doing so. The more health-conscious the student nurses are, the more likely they are to follow a good diet and drink adequate water. However, the data suggest a good trend in student nurses' hydration, with 50% reporting consuming eight glasses of water daily. Students often overlook physical exercise and nutrition for a variety of reasons, including academic pressures, time restrictions, restricted budgets, and a lack of awareness, among others.

Sleep

The study's findings suggest a positive trend in respondents' perceived quality of rest. According to the results, 70% of the respondents stated that they achieved the quality of rest, whereas 30% rarely achieved it.

Intra- and interpersonal skills

According to the study's findings, a considerable majority of student nurses (50%) reported acquiring new skills, with 32% doing so on occasion, such as playing an instrument or participating in sports, cooking, practicing a new language, etc. This research indicates that student nurses may be interested in pursuing personal interests or hobbies in addition to their academic-related duties. Furthermore, a significant majority of student nurses usually find opportunities to connect with themselves and occasionally participate in community projects.

Limitations

The study had a limited sample size, and only females participated, which may limit the generalizability of the findings and misrepresent sex. The self-care experiences of male and

female student nurses may differ because male student nurses may face more pressure than female student nurses do, such as pressure to adhere to traditional masculine norms. Future research should use inclusive sample strategies to capture the varied perspectives of male student nurses. Furthermore, the study was limited to one university and hence may not reflect nursing students in other regions.

Recommendations

Further Research: intervention studies where a specific self-care programme can be implemented to inform practice and where there is a larger sample including males to promote representativeness.

Promote Self-Care Education: offering workshops and seminars that focus on practical ways or strategies for managing stress, exercise, nutrition and hydration; improving sleep; and maintaining well-being. In practicality, this refers to integrating self-care and wellness modules where fitness classes can be offered.

Integrate Self-Care into Curriculum: includes self-care modules in the nursing curriculum that emphasise the importance of self-care practices for students. One of the studies revealed that nursing educators can incorporate holistic self-care interventions into their curriculum over five weeks with Week 1 focusing on sleep hygiene, advising students on nighttime habits, and establishing a sleep-friendly workplace. Week 2 focuses on good eating habits, offering quick meal options, and promoting nutritious snacks. In Week 3, the students can learn about exercise and hydration, as well as the importance of stretching and eating enough protein. Week 4 can cover aromatherapy, describing essential oils and their applications, and lastly, Week 5 can end with teaching positive affirmations to increase self-esteem and professional achievement. This can improve the physical activity and nutrition of the patient (Green, 2019:231).

Provide Accessible Resources: Make available mental health resources such as counselling services, support groups, and

online platforms where student nurses can access information and support.

Conclusion

This study investigated the self-care practices of nursing students. The findings emphasise the relevance of health consciousness in implementing self-care practices, as well as social support in nursing students' self-care practices as part of the curriculum. However, the drawbacks of this study, notably its gender disparity and restricted geographic scale, highlight the need for more research. To gain a better understanding of self-care habits among nursing students, future research should look at a wider, more varied population, including male students as well as students from various ethnic and socio-economic backgrounds. Future research should investigate self-care habits in various geographic situations, such as urban vs. rural areas and developed vs. developing areas. Longitudinal research should be conducted to investigate changes in self-care habits during nursing education and professional practice.

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Chapter 9

Lived Experiences of Male Nursing Students at a Higher Education Institution in Gauteng

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Abstract

Background: The nursing profession is female-dominated, leading to the reinforcement of gender stereotypes that can marginalise male nurses. This underrepresentation of male nursing students raises concerns about their experiences and the challenges they face in educational and clinical settings. The aim of this study was to explore the lived experiences of male nursing students at a higher education institution in Gauteng, South Africa, with a focus on how they navigate gender norms. A qualitative, phenomenological research design involving in-depth, unstructured interviews with male nursing students was employed. The participants were recruited from the University of Johannesburg, and thematic analysis was used to identify common experiences and challenges. The findings indicate that male nursing students encounter significant challenges related to societal stereotypes, leading to feelings of isolation and questioning of their career choices. The study highlighted the need for greater awareness and support for male nursing students to address the challenges they face.

Keywords: Male nursing students, gender norms, nursing profession, stereotypes, qualitative research, phenomenological study, South Africa, equity in nursing.



Background

The nursing profession has long been perceived as a female-dominated field, which has led to the reinforcement of gender stereotypes that marginalise male nurses. This gender bias not only affects the professional identity of male nurses but also influences their experiences in educational and clinical settings. Research indicates that male nursing students often face unique challenges, including discrimination, stereotype threat, and feelings of isolation, which can adversely impact their self-esteem and career satisfaction (Turan, Öner & Atasoy, 2021:4; Powers et al., 2018:478). As the demand for diverse nursing professionals increases, understanding the lived experiences of male nursing students becomes crucial for fostering an inclusive environment within the profession.

Despite the growing number of male nursing students, there remains a significant gap in the literature regarding their experiences and the specific challenges they encounter as they navigate gender norms in nursing. The lack of understanding of these experiences can hinder efforts to create equitable educational and professional environments, ultimately affecting retention rates and job satisfaction among male nurses (Bayer & Golbasi, 2021:140; Liu et al., 2022:9). This study seeks to address the following research question: What are the lived experiences of male nursing students at a higher education institution in Gauteng, South Africa, as they navigate gender norms in the nursing profession?

The significance of this study lies in its potential to shed light on the unique challenges faced by male nursing students and to provide evidence-based recommendations for enhancing their experiences. By exploring the lived experiences of these students, this research aims to contribute to the development of strategies that promote equity and inclusivity within nursing education and practice. (Asante, Korsah & Amoako, 2023:4).

Methodology

Design

This study employed a qualitative, exploratory, and descriptive research design and a phenomenological approach to investigate the lived experiences of male nursing students at a higher education institution in Gauteng, South Africa.

Sampling

The study involved purposive sampling to select second- and third-year nursing students enrolled at the University of Johannesburg. A total of four male nursing students were chosen for interviews in the study. To respect their privacy and confidentiality, each participant was given assurance of confidentiality and anonymity. The inclusion criteria required participants to be male students currently pursuing their nursing degrees.

Data collection

In this study, data were collected through unstructured individual interviews, with each interview lasting approximately 30 to 40 minutes. All interviews were audio-recorded with the participants' consent and subsequently transcribed for analysis.

Data analysis

Thematic analysis was employed to analyse the data, allowing for the identification of patterns and themes within the participants' narratives. First, the researcher familiarised himself with the data through repeated readings of the transcripts. Relevant segments of text were then coded, and overarching themes were developed based on the coded data. This process involved reviewing and refining the themes to ensure consistency and coherence, ultimately leading to a comprehensive understanding of the challenges and experiences faced by male nursing students.

Ethical considerations

Ethical principles were rigorously upheld throughout the study to protect participants and ensure research integrity. Prior to the research, ethical clearance was obtained from the Faculty of Health Sciences' Research Ethics Committee at the University of Johannesburg. The study adhered to the principles of respect for autonomy, beneficence, non-maleficence, and justice. Informed consent was secured from all participants, who were fully briefed on the study's purpose and their rights, including the right to withdraw without penalty.

To enhance trustworthiness, several strategies have been employed. Credibility was established through member checking, allowing participants to confirm the accuracy of their experiences. Dependability was ensured by maintaining a detailed audit trail of the research process. Confirmability was addressed by minimising researcher bias through reflexivity, reflecting personal influences on the research. Transferability was enhanced by providing rich, thick descriptions of participants' experiences, enabling readers to assess the applicability of findings to other contexts. Overall, ethical considerations and trustworthiness were integral to conducting the study with respect and academic integrity.

Findings

The analysis of the data collected from the interviews with male nursing students revealed several key themes related to their lived experiences as they navigated gender norms within the nursing profession, and the following themes were formulated.

Theme 1: Gender Norms and Stereotypes

All the participants initially perceived nursing as a female-dominated profession and encountered societal stereotypes questioning their place in nursing as men. They experienced comments from peers, family, and even professional nurses, reinforcing that nursing is "for females." Despite this, they are determined to challenge these gender norms, focusing on changing perceptions and advocating for the inclusion of male nurses. "I've always seen it as a gender-specific profession, which

was specific to women, not men... I got comments from people thinking I was gay” (P1).

Theme 2: Professional Challenges and Coping Mechanisms

The participants expressed discomfort in performing gender-sensitive procedures, particularly involving female patients, and felt that female nurses should handle specific tasks. To navigate these challenges, they developed coping strategies, such as always involving a female colleague in intimate procedures. Their experiences highlight the professional boundaries they must manage while learning to feel more comfortable in the role. As one of the participants shared, “I’m not used to being exposed to private parts of females... I usually go with another female student nurse to operate what we are doing” (P2).

Theme 3: Support Systems and Personal Growth

Families, mentors, and peers have been crucial in their journeys, providing motivation and guidance. Most of the participants initially lacked a deep passion for nursing but grew to appreciate the profession through practical experience and encouragement from their support networks. This personal growth is reflected in their developing professional identity and increasing comfort in the nursing role, as they see the value of caring for others. One participant noted, “And you know everybody else was very supportive. My parents have been supportive from the get-go... there is the support I get from the educators and then from the hospital. It’s definitely support there” (P4).

Theme 4: Personal Motivation and Fulfilment

Personal values, such as the desire to help and care for others, along with family influences, played a vital role in motivating participants to remain in the profession. Despite societal stereotypes, they found fulfilment in caring for and helping others. This intrinsic drive aligns with recent research emphasising the importance of personal values and fulfilment in nursing job satisfaction and retention. One participant stated, “I think my love for people because I love interacting

with people. So, yeah, I like caring for people, and I like talking to people. So, I think that's what influenced by decision" (P3).

Theme 5: Professional Identity and Role Perception

Most participants initially viewed nursing as a feminine profession and considered some procedures to be gender specific, particularly those involving female patients. This perception led to confusion about their specific roles and tasks within the profession, which impacted their learning and work performance. However, through ongoing reflection and support from their networks, they developed a better understanding of their professional roles. One participant noted, "Like certain tasks are not supposed to be performed by me. Because this is someone that is already in the profession and this is how they do it. And we are sent to the hospital setting to learn from these people" (P1).

Demographics of Participants

The following table presents the demographics of the participants, illustrating their alignment with the inclusion criteria for the study.

Participant ID	Age	Year of Study	Proficient in English	Ethnic Background
P1	20	2nd Year	Yes	Black
P2	20	2nd Year	Yes	Black
P3	25	3rd Year	Yes	Black
P4	20	2nd Year	Yes	Black

Discussion

The study identified five interrelated themes that encapsulate the lived experiences of male nursing students in Gauteng: Gender Norms and Stereotypes in Nursing, Professional Challenges and Coping Mechanisms, Support Systems and Personal Growth, Personal Motivation and Fulfillment, and Professional Identity and Role Perception.

Gender Norms and Stereotypes in Nursing

The participants frequently encountered societal stereotypes that positioned nursing as a predominantly female profession. This perception not only undermined their legitimacy but also fostered discomfort in clinical settings, particularly during gender-sensitive procedures involving female patients (Prosen, 2022:7). Such stereotypes, as noted by Turan, Öner, and Atasoy (2021:3), often lead patients to prefer female nurses for comfort, further marginalising male students and impacting their self-esteem and sense of belonging (Powers et al., 2018:478).

Professional Challenges and Coping Mechanisms

The discomfort stemming from these gender norms manifested in professional challenges, where participants felt that certain tasks were inappropriate for them. To navigate these challenges, many male nurses sought company from female colleagues during intimate procedures, a strategy that not only provided comfort but also reinforced collaborative practice (Martínez-Morato et al., 2021:8). This coping mechanism highlights the importance of support systems, which are crucial for male nursing students, as they confront the pressures of gender expectations (Mao et al., 2021:12).

Support Systems and Personal Growth

Support from mentors, peers, and family emerged as a vital component in the participants' journeys, facilitating personal growth and a deeper appreciation for the nursing profession. Many participants reported that encouragement from their networks helped them overcome initial doubts about their suitability for nursing, aligning with Lyu et al. (2022:2273), who emphasised the role of support in challenging gender stereotypes. This growth is essential for developing a strong professional identity, as participants began to see their roles in nursing as valuable and necessary.

Personal Motivation and Fulfilment

Despite the challenges posed by societal stereotypes, the participants expressed a profound commitment to patient care, driven by intrinsic motivations such as the desire to help others. This personal fulfilment played a crucial role in their resilience, enabling them to persist in the face of adversity and challenge existing norms (Kuzma & Yingling, 2023:2). The interplay between Personal motivation and support systems illustrate how a nurturing environment can empower male nursing students to redefine their professional identities.

Conclusion

This study provides valuable insights into the lived experiences of male nursing students in Gauteng, highlighting the complex interplay of gender norms, professional challenges, and support systems that shape their journeys. These findings reveal that societal stereotypes continue to position nursing as a female-dominated profession, leading to feelings of discomfort and exclusion among male students. However, the presence of robust support systems, including mentors and peers, plays a crucial role in helping these students navigate their challenges and develop a strong professional identity.

Moreover, the intrinsic motivation of male nursing students to provide compassionate care underscores their commitment to the profession, despite the barriers they face. By fostering an inclusive environment that challenges existing stereotypes and promotes gender diversity, the nursing profession can enhance the experiences and retention of male nurses. This study not only emphasises the need for equitable opportunities within nursing education but also calls for ongoing dialogue and initiatives aimed at creating a more supportive and inclusive atmosphere for all nursing professionals. Ultimately, addressing these issues is essential for enriching the nursing field and ensuring that it reflects the diverse society it serves.

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Chapter 10

Does Music Represent? A “Heavy” Defence of Representationalism

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Abstract

Does music represent the world? If the point of art in general, and music in particular, is to help us understand the world, then music must surely be *about* the world, and so it must represent it somehow. In contrast to this view, Roger Scruton defends an anti-representationalist position, arguing that, as an abstract art, music has no power to represent the world. In this paper, I develop a four-point critique of his view, using the work of Michael Morris (2012), Aaron Ridley (2004), Robert Walser (1992), Peter Kivy (1990), and Carl Dahlhaus (1989), as well as a comparison of the metal and classical genres of music to make my case.

Introduction

One of the most intriguing questions within the philosophy of music is whether music can represent the world. If the point of art in general, and music in particular, is to help us understand the world, then music must surely be *about* the world, and so it must represent it somehow. This view – representationalism – is rooted in cognitivism. As Michael Morris (2012: 556) explains, cognitivism about music as an art asserts that “...the point of music as an art is to put us in a position of being right about the world because one is attuned to the world.”

Scruton (1997, 2017) argues against this representationalist view of music and presents an argument that it is “...an abstract art, with no power to represent the world” (Scruton 1997: 273). In short, his view is that without *misrepresentation*, there can be no representation, and owing to its abstract nature, music cannot be misrepresented. As a result, he concludes that music cannot be a representationalist art.

Scruton’s view - anti-representationalism - has been vigorously opposed in the literature. In this paper, I join the attack against Scruton’s anti-representationalism by means of a four-point criticism of his argument. I draw on the work of Michael Morris (2012), Aaron Ridley (2004), Robert Walser (1992), Peter Kivy (1990) and Carl Dahlhaus (1989) and use a comparison of the metal and classical genres of music to make my case for what I call a “heavy” defence of representationalism.

Scruton’s Argument Against Representationalism in Short

In *Representation in Music* (1976 [2017]), and again in his *The Aesthetics of Music* (1997), Scruton claims that despite music being used to “...express emotion, heighten the drama, to emphasise the meaning of ceremony” (Scruton 1997: 273), representation is *not* one of its properties. To develop his position, Scruton considers the phenomenon of representation, as one might find it in the mediums of “drama, poetry, sculpting and painting,” (*ibid.*). In his analysis, music is inherently different from the other forms of art listed.

It is important to note that Scruton considers pure music when arguing for his anti-representationalist position. Pure music (or absolute music) is a concept that is widely utilised in some form throughout the philosophy of music. The term absolute music was coined in 1846 by Richard Wagner, who used the term to expose the limits of instrumental music and justify his own conception of opera (Bonds 2014). Wagner wanted music that would bring about social revolution and thus derided the idea of pure or absolute music. In contrast, the Viennese music critic Eduard Hanslick argued that only absolute music could

realise the highest potential of the art owing to its purity (*ibid.*). As Carl Dahlhaus (1989) explains, pure music entails the idea that music is a “pure” idea with no extramusical elements. In other words, pure music is music that is absent from all representations stemming from non-musical aspects (Kivy 1990). In other words, pure music is music that is not about anything. It is “autonomous, self-contained and wholly self-referential” (Bonds 2014). Importantly, as Morris (2012: 557) points out “...there is nothing in the definition of pure music which prevents pure music from being programmatic: it is just that if there is programmatic pure music, it cannot be programmatic in virtue of the presence of some additional representational device.”

Scruton focusses on developing an analysis of pure music to conclude that music cannot be represented. His argument is as follows: without *misrepresentation*, there can be no representation, and owing to its abstract nature, music cannot be misrepresented. As a result, music cannot be a representationalist art. However, how good is this argument?

Criticising Scruton: Rejecting Scruton’s Anti-representationalism

As Morris (2012) notes, the very idea of misrepresentation in music is something most of us do not ever think about, and in fact, the very idea of misrepresentation hardly ever occurs to us in any art, be it painting or poetry. Why not? As Morris (2012) rightly notes, there can be no correct or incorrect representation without the possibility of incorrect representation. However, this does not apply to artistic representation at all, since it is not clear that artistic representation is concerned with correctness or incorrectness in the same way that archaeologists’ observations of a stone tool would be.

However, denying that artistic representation is concerned with correctness does not mean that its representations cannot be inadequate, i.e., that its representations can fail (without misrepresenting). Morris (2012) provides an excellent example here – the example of technical deficiency. A composer, for example, may just not be very good at using the orchestra to, for

example, conjure up the idea of a storm. Their composition may be disappointing to us listeners in that regard. However, this is just a simple inadequacy of the composer to the task and thus cannot be understood as misrepresentation.

Another example that Morris (2012) gives us is kitsch music, where a composer creates a facile and sentimental piece of music that does not sufficiently highlight the significance of the subject. Think here of a work such as the score of a film. Most of the music created for a film is designed only to accompany a scene and fill the silence; it has little capacity to distinguish its subject but instead serves to heighten the scene that it accompanies. That is not to say that all pieces designed to accompany films are a kind of kitsch music, as composers such as Hans Zimmer, with his soundtrack for the movie *Interstellar*, have shown that these musical pieces can still hold their own when representing their subject and correctly conveying opinions on said subject.

Already, we are sceptical that Scruton's argument is any good. A second way in which Scruton's argument can be shown to be deficient is to focus on how it is dependent on the notion that music is an abstract art. The reason that Scruton views music as abstract art certainly stems from his focus on pure music. However, the concept of pure music is a highly problematic way of understanding music, especially because it attempts to differentiate music from all other art forms, believing that it is elevated above other art forms (Bonds 2014: 298). "Most scholars", Bonds writes, "... recognised that the conceptual dichotomy of absolute and programme music was unsustainable; over time, the two extremes came to be seen more and more as opposite ends of a conceptual spectrum" (Bonds 2014: 298). This conceptual spectrum is the Romantic music-aesthetic paradigm, which, until today, has dominated the main part of Western classical music culture, including most theories of musical meaning.

A third problem is raised by Aaron Ridley (2004)—the idea that context can be eradicated within the sphere of music. This is important for my case against Scruton, since, for him, context is

the component of an art that differentiates it from being abstract or representational (Scruton 1976: 279).

Ridley (2004) refers to the issue as ‘Music from Mars’ – as if it were possible to have music without a context. Ridley (2004: 2–6) counters this idea with two arguments. First, he notes that “There is nothing natural or self-evident about the claim that music is autonomous.” Therefore, the assumption upon which Scruton bases his argument is problematic. The second point that Ridley (2004: 7–8) makes against Scruton’s assumptions is a related one – that the timing of this reimagining of music was coincidental with a period in which all of the art was being rethought and romanticised. As we have seen, the idea of absolute music itself is a nineteenth-century invention, with Dahlhaus (1989) describing the rise of absolute music in the same terms that Thomas Kuhn applied to the history of science: a “paradigm shift”, as it relied on a total “reversal of esthetic premises” (Dahlhaus 1989:7). Through this, it can be understood that the prospect of pure music, which Scruton relies upon in his theory, is a highly contestable basis upon which to rest his claims.

The fourth point that can be raised against Scruton’s argument that music is unable to represent the world is to consider the artist-audience relationship in music. Owing to subcultures forming around genres of music and persons following the works of specific bands/composers, fans could reasonably be said to have at least some understanding of the artists they follow. The same can be said of the artist somewhat understanding their audience, especially with the rise of social media in today’s musical world. Audience members can gain a glimpse into the perspective of the artist and thus allow them, albeit potentially misguided, insight into an artist’s intentions; for example, knowing about Jason Becker’s battle with Amyotrophic Lateral Sclerosis (ALS) based on his public statements will allow the listener a glimpse into understanding the subject of his *Triumphant Hearts* album. The artist-audience relationship then provides context for the understanding of musical works. As Byron Almén noted, “...the listener perceives and tracks a culturally significant transvaluation of hierarchical relationships within a temporal span” (Almén 2003: 12). Recognising culturally

significant ideas is part of the listener's job and requires active involvement of the imagination of the member of the audience. As Boghossian points out, when listening to music, we do not hear mere sounds. We hear the music *in* the sounds (Boghossian 2002: 50). As a result, context is essential as a point to raise against Scruton's position.

To close this section, consider that Scruton uses five points to determine the capacity for an artwork to represent. I will only consider points two, three and four by deconstructing them, tackling the issues with the point and providing examples of music that fit his criteria and can be considered representational.

Scruton's second point calls for the ability to differentiate between the subject and the medium to be recognised before representation can occur. This can only happen if one is aware of the subject of a work of art. Owing to music being a purely sonic form of art, an association of sound with extra-musical concepts is the main way for this event to occur. Thus, one must utilise context, but we must look at context as though there are different degrees of context rather than its existence or lack of existence within a piece. The use of Latin choirs in orchestral pieces may cause one to think of churches or religion through association, whereas the use of screams in metal music can instead invoke thoughts of intense anger through knowledge of how humans typically express themselves. Thus, these minute aspects of context and association guide one's mind towards a possible subject and allow for recognition and thus representation. A different example would be the use of the Phrygian dominant scale, which, owing to its flattened and augmented second, gives it a distinct sound, and the constant use of music written with this scale in mind when depicting the Middle East leads to an association between this scale and the Middle Eastern regions. This point of Scruton's also prevents an art that mimics a subject from being a form or representation. While music may mimic many sounds, or their aspects, which are found in the world, this mimicry is only a component of musical representation. The use of mimicry narrows a listener's mind to what the subject of the song is; for example, *Le'Château Abandonné* by Gulheim Desq, utilises mimicry of the sound of cawing at the beginning to evoke

an ominous atmosphere and bring the listeners' mind closer towards its subject of an abandoned Chateau.

Scruton's third point (1976: 263) states that 'Interest in a representation requires an interest in its subject'; thus, one must know the subject of an artwork before it can represent the world to its audience. The use of pure music again inhibits Scruton's perception of music and its capacity to represent this point. To deny any knowledge of an artist and their preconceptions denies the music of its dependence on some form of context, a quality that all art shares. Scruton (1976:277) uses the example 'we cannot assume that a composer may sit down with the honest intention of creating a piece to be heard as, say, the quarrel between Mr. Pickwick and Mrs. Bardell's lawyers' to highlight that music which may represent this scenario could just as easily represent a forest fire. I disagree with Scruton's point, as through the use of association and repetitive musical motifs being used in tandem with a character or scenario, an artist can guide the audience's mind towards the subject. Another issue posed by this example is that it has an extremely high degree of specificity. If another art form were to try and represent this, the result would be closer to the depiction than the representation would be. Nuances such as the identity of individuals are hard to convey; doing so through the motifs, one could be associated with a character or individual and thus represent their presence. To deny music, the capacity to do such is similar to putting a blind person before a portrait of a mountain and expecting them to recognise that it is a mountain. The visual association between a mountain and a depiction or representation of a mountain can only occur when one has the external context of what a mountain is. An example of the use of motifs to represent a subject could be James Bond's theme song.

While many metal and classical works of music share common attributes, which may not be apparent at first, when investigated, the link between the two genres becomes evident. As shown in the works *Eruptions: Heavy Metal Appropriations of Classical Virtuosity* by Robert Walser (1992), many metal works, such as those written by the guitarist Yngwie Malmsteen, have been heavily inspired by classical music. This tends to feel off to

some people because, like all forms of art, it is an inherently biased idea about certain genres, which can lead to assumptions about the music and subject, which could cause misrepresentation. Through this mental association, these inherent ideas can either form part of the representation or misrepresentation is art. The very clash between these surprisingly related genres leads to many overt opinions on how complex the works of each genre are.

Scruton's fourth point (1976: 273) puts forth the criterion that 'A representational work of art must express thoughts about its subject, and an interest in the work should involve an understanding of those thoughts'. Lyrics are an aspect of music that can directly state an artist's opinion of an aspect of the world, but the same can be done through other musical aspects. Music is capable of doing so through the use of musical structure and theory when a piece is being constructed. The major or minor key sets the emotional tone, whereas the tempo, tone and type of sound convey different opinions and grant depth to the emotional tone that is portrayed. An example would be the contrast between what is conveyed by an electric guitar, with a distortion pedal in comparison to an acoustic guitar. The more aggressive distorted sound of the electric guitar will cause whatever is being conveyed to have a different tone than the acoustic guitar. The overdriven electric guitar may come off as a more aggressive, rough sound, whereas the stock violin may have a less aggressive, softer sound. The distorted guitar's aggressive sound can be found in numerous songs, but the example I will use is *Backbone* by Gojira, where it creates an aggressive intensity. The acoustic guitar cannot achieve a sound as aggressive as the overdriven electric guitar and instead utilises its properties to create sounds and represent aspects of the world that match its sounds. An example of this would be the classical guitar piece *Asturias* by Isaac Albeniz, which utilises the tremolo technique to create a different form of intensity from the aforementioned song *Backbone*.

In this section, I have raised four points against Scruton's anti-representationalist argument and then critically discussed three of his five points that form part of his argument. I've used examples from classical music and heavy metal to make my case that Scruton's argument does not hold.

Conclusion

I showed in this paper that Scruton's anti-representationalism is untenable by means of a four-point criticism of his argument. I used the work of Michael Morris (2012), Aaron Ridley (2004), Robert Walser (1992), Peter Kivy (1990) and Carl Dahlhaus (1989) and compared the metal and classical genres of music to make my case for my "heavy" defence of representationalism. The conceptual edifice of absolute music is, in my reading, a historical event that originated in the 19th century and is thus unsuitable as a basis for an assertion of a position on representation in music.

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Chapter 11

Masculinity, Culture and the Demise of “Man”

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Introduction

In this essay, I unpack the concept of masculinity and how it is utilised in the construction of masculine social identities. Understanding the social construction of masculinity is crucial for comprehending gender identities and their relationships with one’s personality and way of being. This paper argues that masculinity is a fluid and multifaceted concept shaped by hegemonic ideals that often restrict men’s emotional expression and behaviour. I intend to demonstrate, first, that masculinity is socially constructed and reinforced through performance. Second, I illustrate how it limits men’s potential for personal growth and authentic expression. I employ Judith Butler’s (1999) account of gender performativity to display performative aspects of masculinity and how rare genuine portrayals of masculinity can be. I highlight the ways in which gender is enacted through social interactions and behaviours. In the final section of the paper, I discuss the limitations of hegemonic masculinity and the importance of embracing diverse forms of masculinity.

Masculinity: A Social Construct

Before discussing the concept of masculinity, it is important to note the structure in which it is understood, i.e., gender. Gender is a social construct that refers to the roles, behaviours, expressions,



and identities associated with being a man, woman, or non-traditional gender. A well-versed scholar in gender identities, Judith Butler, describes gender as the repetition of the body, a set of repeated acts within a highly rigid regulatory frame that congeal over time to produce the appearance of substance, of a natural sort of being (Butler, 1999: 7). Butler describes how internal understanding of one's gender and gender roles influences their actions to behave and start portraying that gender (Ton, 2018: 3). It is influenced by cultural understandings of gender identities, societal expectations and roles, and personal factors such as a person's internal sense of being (McDermott & Hatemi, 2011: 89). The term masculinity itself stresses gender, unlike the term male, which stresses biological sex. Thus, studies of masculinities need not be confined to biological males but rather, towards persons who exhibit or are associated with being a man. Sex, on the other hand, refers to biological and physiological factors and is generally categorised as male, female, or intersex (McDermott and Hatemi, 2011:89).

While biological 'maleness' is generally recognised via explicit bodily features and XY Chromosomes, the roles, actions, body types, and identities that are considered 'masculine' differ greatly due to external conditions such as those mentioned above (Kimmel and Bridge, 2011). This variance enables common research to suggest that masculinity is a social construct. Kimmel and Bridges (2011) illustrate the multiple levels of variation in masculinity well by starting with the historical level followed by the cultural, intrapsychic and contextual levels. The historical level is where what is considered masculine evolves throughout time. To reflect on the history of masculinity, men such as Leonardo Da Vinci and William Shakespeare would dress in ruffled clothes and pantaloons. At that time, these clothes signified the structural position and class. Changing their wardrobe to expensive branded t-shirts and skinny jeans would not make them more manly but rather strange, according to their standard of how wealth and class represent themselves. These examples of how men are known to dress illustrate the context in which meaning can be made. The cultural level demonstrates that concepts of masculinity are culturally distinctive. This is

to say that not all American, Nigerian, Chinese, or Australian men are alike. The intrapsychic level describes how the concept of masculinity changes its meaning and evolves over one's life, where one's role as a man changes between, for example, the teenage hood and adulthood. Finally, masculinity differs at the contextual level, where even within the same society and generation, personal interpretations differ with respect to masculinity. 'Being a man' implies vastly different things to a white, heterosexual university student living in America and a middle-aged, homosexual, Latino man living in Mexico. Since there is not a single, unchanging definition of masculinity across various cultures, time periods, and individual men, the proper term would be masculinities in plural to emphasise the diversity of meanings, roles, and behaviours consumed in the term (Kimmel & Bridges: 2011).

Masculinity Under Hegemony

Raewyn Connell's (2005: 835) gender order theory acknowledges various masculinities that differ depending on the individual, society, culture, and time. Hegemonic masculinity (HM) is one of these masculinities. Hegemony is known as dominance over others attained by institutions, culture, and persuasion rather than violence, though force, may be used to sustain it (Connell, 2005: 832). It is a socially manufactured ideal that elevates some behaviours and characteristics of men while devaluing others. This hegemonic model frequently places greater value on characteristics such as dominance and heterosexuality.

Dominance and heteronormativity are key components responsible for upholding hegemonic masculinity because they reinforce power structures that benefit men. The common attribution of these components to men justifies traditional gender roles and reinforces patriarchal structures. By emphasising dominance, hegemonic masculinity discourages challenges to male authority while at the same time normalising heterosexuality. Heterosexuality is often presented as the "norm", reinforcing limitations and exclusions to what a man is. Like sex and gender, sexual orientation remains a distinct analytic category (McDermott

& Hatemi, 2011); however, it is used as a tool alongside HM and the ideal man. This reinforces gender binaries and excludes non-binary and queer genders individuals from the dominant masculine ideal. Normative heterosexuality serves to marginalise and exclude those who do not live up to or conform to this ideal, making it difficult to challenge or dismantle the hegemonic model. The subjugation of other marginalised identities and non-hegemonic masculine identities is a core part of HM.

HM's change over time, where newer forms of masculinity may displace older forms in a contest for hegemony. Some narratives around hegemonic masculinity highlight "positive" behaviours such as being a father, provider and protector. However, HM operates in a way that allows male dominance to continue dominating. For men to achieve social approval and authority, this frequently means conforming to the hegemonic masculine ideal. The social approval aspect is important to note, as there needs to be a society to experience HM from men and those that require it for it to be hegemonic. Some men try to ensure that they are within the structure of HM to reap the benefits, so they have to look and seem like the part. They perform and behave in a way that aligns them with hegemonic masculine ideas.

The Performative Aspect of Masculinity

The idea of gender performativity is important insofar as it helps us understand how HM is not only socialised but also reinforced, a concept introduced by Judith Butler. Butler (1999) argues that gender is not something one is but something one does. Masculinity is enacted through a series of stylised acts, such as speech patterns, body language, and clothing choices (Ton, 2018). This performative aspect underscores the social and constructed nature of masculinity. There is a pageantry to masculinity where the performative aspect and the adoption of a hegemonic masculinity itself are reliant on others and how others view one within that masculine structure.

Individuals are socialised from a young age to embody certain gender norms and expectations, which then become

internalised and reproduced through their daily actions and behaviours. Performative gender is closely related to understanding masculinity as a social construct. It emphasises that gender is not an innate quality but rather that it is something that is “performed” through the repetition of socially coded behaviours and expressions (Butler,1999: 7).

The conformity to pre-established ways of being masculine, often reinforced through socialisation and media, provides a safety net that can offer a sense of comfort and reassurance of acceptance and privilege, making it tempting for men to conform and avoid the discomfort of challenging or redefining their own identities. This sense of comfort comes from knowing what acts and behaviours are socially acceptable within various contexts. In some sense, the convenience and familiarity of these established masculine norms can be alluring, as they offer a clear path to acceptance and belonging within a male-dominated culture.

The question of who embodies hegemonic masculinity was one of the initial criticisms directed at the concept, but in other ways, it might be crucial to acknowledge ambiguity in gender dynamics as a hegemonic mechanism that supports it. Being rash, boastful, driving while intoxicated, and getting into altercations are not behaviours that elevate one to the position of a man; rather, they serve as a means of affirmation of being a man (Connell, 2005: 838). A prime example is the Soviet Union’s celebration of the coal miner Aleksandr Stakhanov, who set a world record in 1935 by hewing 102 tonnes of coal in a single day, which led to a rush to beat the mark. This distortion included the fact that well-known “shock workers” received much unrecognised assistance from their colleagues to reach this goal. As a result, hegemonic masculinities are not relevant or realistic to men’s real lives. However, these models do represent common goals, aspirations, and wants in various contexts (Connell, 2005: 838).

Intersectionality: A Proposed Alternative to Masculinity

Masculinity studies are a dynamic, interdisciplinary field of study that is primarily concerned with the social construction of what it means to “be a man.” Masculinities researchers investigate the different ways in which males as a group are privileged, as well as the costs of such benefits and how not all men have equal access to them. Masculinity studies examine the variety of identities, behaviours, and meanings associated with masculine identity without assuming universality. Scholars of masculinity frequently refer to masculinities in plural. Because masculinity varies greatly, we must employ the term “masculinities” to describe how masculinity signifies different things to different people in different cultures and historical periods (Kimmel & Bridges, 2011).

The monolithic nature of hegemonic masculinity is challenged by the concept of intersectionality. This framework acknowledges that various social factors, such as race, class, and sexuality, intersect to shape individual experiences of gender. For example, black masculinity often involves a complex terrain where hegemonic ideals collide with racial stereotypes and discrimination. Similarly, queer men may reject traditional masculine norms in favour of more inclusive and affirming identities. These examples illustrate how hegemonic masculinity fails to encompass the full spectrum of human experience, limiting our understanding of masculinity and its impact on individuals.

Being afraid to embrace even the tiniest hint of femininity keeps one from becoming fully self-sufficient, as it is important to acknowledge and celebrate all aspects of one’s identity without fear or shame to gain proper self-awareness and self-understanding. Elements that resemble femininity or non-conformity are either disregarded or rejected to sustain the structural framework of HM. Although it is not stated explicitly, it does become ingrained in behaviour to ignore or dismiss certain behaviours and feelings right away, which discards non-hegemonic qualities.

By acknowledging and celebrating all dimensions of one's identity, including traditional "feminine" traits and behaviours, individuals are empowered to live more authentic, fulfilling lives, free from the constraints of restrictive masculinity ideals. This process of accepting oneself fully is an important step towards dismantling the harmful effects of hegemonic masculinity, which can alienate and oppress those who do not neatly fit into its narrow definition of what it means to be a "real" man. Embracing intersectionality allows for a more nuanced, inclusive understanding of identity and personal growth.

Conclusion

In conclusion, masculinity is a complex and multifaceted concept that is shaped by social, cultural, and historical factors. The notion of hegemonic masculinity, which privileges certain traits and behaviours over others, can be limiting and restrictive for men while also marginalising to persons who do not fit the masculine category. By recognising that masculinity is a social construct and embracing the diversity of masculine expressions, individuals can move towards a more authentic and fulfilling sense of self, and one way in which this can be realised is through embracing intersectionality. Embracing intersectionality and rejecting the constraints of hegemonic masculinity is crucial for personal growth and for dismantling the harmful effects of rigid gender norms. Ultimately, a deeper understanding of masculinity and its performative aspects can empower men to have more authentic, emotionally expressive, and well-rounded lives.

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Chapter 12

Life and Meaning

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Introduction

The question of life's meaning has haunted humanity since we have been able to think. This question still plagues us because of the universe's unwillingness to answer our calls. There are questions that people ask themselves all the time, after receiving no convincing answers. These include questions about what their life means, whether it has a meaning at all, and the question that can be asked recursively about life to no end: *Why?* In this essay, I focus on the following common thread of all such questions: What meaning, if any, is there to life?

In this essay, I argue that although our individual lives have meaning, they cannot be understood entirely while we are alive. This is because we cannot ever know the 'whole' of our lives but can know only parts of them. I also argue that we assume that our lives have a certain kind of meaning. This assumption that our lives have meaning is not affected by the existence or non-existence of an ultimate meaning – the difference between these two kinds of meaning will be elaborated on shortly.

Many approaches to answering the question of life's meaning come from analytic philosophy – the philosophical tradition that takes analysis to be central to philosophical progress (Blackburn, 2016: 18). In contrast to such approaches, I offer a novel discussion of life's meaning by way of hermeneutics. Hermeneutics is the study of the interpretation of texts, which lies in the field of continental philosophy – the

philosophical tradition contrasted with analytic philosophy, which considers philosophical self-reflection paramount (Solomon, 1988). An important idea in hermeneutics is ‘the hermeneutic circle’, which states that a text’s meaning can be understood only through the relationship between the parts of the text and the whole text. This application of continental philosophy (particularly the hermeneutic circle) to a field largely dominated by analytic philosophy is novel. Prominent philosophers in hermeneutics have described life’s meaning. Hans-Georg Gadamer in *Truth and Method* (1960) and Martin Heidegger in *Being and Time* (1927) conceptualise human existence as self-interpretation via hermeneutics. I use hermeneutics as a basis for my argument that one’s life has meaning but deny that that meaning comes from one’s (own) interpretation of one’s life.

Meaning in life is often tied to morality – examples include religion and Thaddeus Metz’s ‘fundamentality theory’ of meaning in life (2013: 222–239). Following these examples, a complete and robust explanation of life’s meaning should include a moral system either following on from it or as the foundation upon which it is elucidated. However, the development of a useful moral framework based on this philosophy would exceed the limits of this essay but could be considered for future research.

There are two different kinds of meaning that I refer to in this essay: interpretive meaning and philosophical meaning. Interpretive meaning is the literary kind of meaning, the type of meaning we try to preserve when we paraphrase another author’s work or the meaning we refer to when we say a play has a meaning. Hermeneutics is concerned with this interpretive sense of meaning. The second kind of meaning is the kind that philosophers of meaning in life refer to. This philosophical meaning is a ‘good’ beyond money, happiness, love or other earthly desires. When philosophers of meaning in life say that one’s life is meaningful or has meaning, they are saying that there is something ‘good’ about it. This essay lies at the intersection between these two meanings, and the interpretive sense of meaning also goes beyond human desires

and understanding – although the interpretive meaning is not necessarily ‘good’. Because of these two different forms of meaning, I will indicate which kind of meaning I am referring to when it is necessary. Another critical distinction is made in philosophical meaning.

There is a difference between *the* meaning of life and meaning *in* life. *The* meaning of life refers to what meaning can be given to life overall; some philosophies single out human life as meaningful in a unique way, whereas others apply it to all life. Meaning *in* life refers to the meaning an individual life can have, which can also be applied conditionally. For reasons that will be made clear, my use of hermeneutics necessitates that I discuss meaning *in* life and not *the* meaning of life.

In the first part of my essay, I argue that one’s life can be understood as a text whose meaning can be interpreted, which allows me to use hermeneutics and specifically the hermeneutic circle. I use it to show that one cannot be alive and have access to the ‘whole’ of one’s life; therefore, one cannot understand the meaning of one’s life while living it. In the second part, I use Gadamer’s anticipation of completeness, which says that a text is assumed to have meaning when interpreting it, to show that if one attempts to find meaning in one’s life, then one assumes that their life has meaning—albeit ultimately uninterpretable by oneself.

Section 1: Life as a Text and the Hermeneutic Circle

Life can be interpreted in the same way that a text can. There are three ways in which life is similar to a text. First, there is the narrative aspect. A text, such as a book or play, has a narrative, and the narrative is the lifeblood on which everything else relies. When we reflect on our lives, we tend to put it in terms of a narrative; people speak about eras and character development in their lives in the same way we speak about acts and structure in a play.

The second way is the distillation of wisdom or advice from our previous life experiences. When giving a friend advice, one might say, “This situation happened to me, this is what I did, and this is what happened.” The use of our own lives to help others

fulfills the same purpose that fables or children's stories do. A fable is a story that has a clear moral message.

The final similarity between life and a text is simple: life always ends, just like a story always ends. When we interpret our lives, the knowledge that it will end always informs the interpretation (even if we do not know it does). These three similarities between life and text show that they can both be interpreted. Using these likenesses, I use hermeneutics to discuss "the fundamental question" as Albert Camus puts it (1942: 1).

The *hermeneutic circle* is an important concept in the interpretation of texts and reveals our interpretive meaning in life. The act of interpretation is an attempt to bring about understanding—in my case, interpretation of one's life to understand the philosophical meaning of their life. Therefore, interpretation and understanding are linked. The circle is a phenomenon that says that one's understanding of the whole text is refined by one's understanding of the parts, but one's understanding of the parts is refined by one's understanding of the whole. Understanding a text is thus circular. However, the circular problem of the hermeneutic circle does not pose a problem for me; the existence of the circle is sufficient to show that one cannot understand one's interpretive meaning in life while alive. There is a fact of life that suggests that a true understanding of one's life is impossible using the circle.

The fact of life being alive – and not dead – makes it impossible to interpret our lives correctly. If life is interpretable like a text, then the hermeneutic circle comes into play. The basis of the hermeneutic circle is that a correct interpretation can only be arrived at if the whole of a text is known as well as all the parts that make it up. While we are alive, we are living in the 'parts' of our lives and will only ever have access to those 'parts'. That is, the 'whole' of our lives is never accessible to us, which means we cannot engage in the hermeneutic circle. If we cannot engage in the hermeneutic circle to begin developing a correct interpretation of our lives, we can never understand the interpretive or philosophical meaning in our lives. Trying to interpret the interpretive meaning of one's life while alive would

be akin to trying to understand the whole meaning of a book while still in the middle of reading it. While the interpretation might be close to the true interpretive meaning, anything could happen between the current page and the ending; life is no different.

Death is vital to my discussion and will also be discussed in Section 2. The fact that all lives end means that the ‘text’ of one’s life will always finish and, further, will always be interpretable. The final act of dying in the hermeneutic context would be similar to the completion of writing a book. Although the book has been finished, the writer has not yet read through it from start to finish. In the final moment of one’s life, one finally has access to the ‘whole’ of one’s life but is fundamentally unable to begin interpreting the interpretive meaning, as they are no longer alive.¹ The finality of life means that it will be interpretable but also that we can never interpret our lives correctly without access to the ‘whole’.

If, after death, the ‘whole’ of our lives exists, we must then ask if it is possible for the people we leave behind after we die to interpret our lives and come to a correct interpretation of that interpretive and philosophical meaning in life. The answer begins with the hermeneutic circle; one needs access to the parts and ‘whole’ of one’s life to interpret it. Other people do not have access to all parts of one’s life and thus cannot ever obtain a correct interpretation of one’s life. Any attempt to interpret a deceased person’s life would simply be a projection on the part of the interpreter. An example of this is trying to interpret the meaning of another book by referencing to it in the current book one is reading—it would be a mediocre interpretation. Thus, it is only correct, though futile, for the individual to attempt to interpret their meaning in life. This means that meaning *in* life is the only philosophical meaning I can discuss using hermeneutics.

The uninterpretable nature of meaning in life means that there is no prescribed meaning for one to aspire to or fail to achieve. Therefore, my theory of meaning in life is as universal as the ability to interpret meaning. When meaning in life is

concerned, it should be as universal as possible. Prescriptive descriptions of meaning in life are limited in that there will always be people who do not or are unable to fit into the prescription and are therefore not universal. For

This essay focuses purely on secular forms of meaning. Being in an afterlife would mean that there is meaning to life (at least, what belief in an afterlife tells us), which means that this hermeneutic exercise would be irrelevant to life's meaning.

Example, the life of an Ethiopian child is vastly different from the life of an eighty-year-old child in Japan. My description of meaning in life is not prescriptive and accounts for these differences because of the individual nature of it—one can only attempt to interpret their own life.

Section 2: Anticipation of Completeness

Georgia Warnke analyses Gadamer's "anticipation of completeness" as a solution to a problem that his philosophical hermeneutics brings about (Warnke, 1987: 82). The specifics of the problem and how his anticipation of completeness attempts to solve it are not relevant to this essay. However, the concept itself is important, as it shows that we assume that life has an interpretive meaning.

The anticipation of completeness is an extension of the hermeneutic circle. Gadamer defines anticipation of completeness as "anticipation of the whole and its subsequent articulation in the parts" (Gadamer, 1960: 293). It follows from the hermeneutic circle by showing that when we are in the process of interpreting the meaning of a book, we assume that the meaning exists. While one is engaging the hermeneutic circle, interpreting the parts before getting to the whole, one assumes that the whole and parts form a meaning that can be interpreted.

This idea is intended to describe the interpretation of, for example, books that are already complete – the whole already exists even if the interpreter has not finished reading it. However, interpreting life (which has not yet been completed) and interpreting a book is no different. The assumption that a

book has a meaning is not necessarily predicated on the 'whole' of the book existing. The completeness of a text is anticipated before we know that it has been completed. Similarly, one assumes that one's life has an interpretive meaning when one begins interpreting it – even while one is alive.

Gadamer says that there is a way for this assumption of interpretive meaning to be misguided, "when we read a text, we always assume its completeness, and only when this assumption proves mistaken – i.e., the text is not intelligible – do we begin to suspect the text and try to discover how it can be remedied" (1960: 294). To know that the anticipation of interpretive meaning in our lives is not mistaken, we must look again at death. The 'whole' of one's life does not exist until one dies. We can only know if a book is unintelligible once we finish reading it and realise that the whole is not "articulate[d] in the parts" (1960: 293). Being alive means that we cannot know whether the 'whole' of our lives is intelligible or not. Therefore, the assumption that our lives have interpretive meaning is not mistaken.

Conclusion

In this essay, I have argued that although we assume that life has an interpretive meaning, meaning cannot be understood while we are alive. I did this by using the hermeneutic circle, showing that one never has access to the 'whole' of one's life and therefore can never understand the interpretive meaning of one's life.

I also argued, using Gadamer's anticipation of completeness, that the assumption of interpretive meaning in one's life is not misguided. I showed this by looking at how the 'whole' of our lives only exists after death, so while alive, we cannot know if the 'whole' of our life is not expressed in the 'parts'.

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Chapter 13

Migration: A Perspective on Poor Basic Service Delivery for Refugees in South Africa

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Introduction

In terms of the 1951 Refugee Convention, a refugee is defined as a person who has fled his or her country forcefully because of fear of persecution, violence or war.¹ This Convention, among other International Conventions and national legislation, provides for the rights aimed for refugees and how those rights are to be implemented and protected. Whether the South African government adequately provides for such rights and services is a question of fact. Legislation exists, but is the South African government complying with it in administering service delivery for refugees? This essay, from a South African context, first discusses how the international legal framework and national legislation are shaped to cater to and protect the rights of refugees. Second, the essay discusses the extent to which the South African government provides shelter for refugees. It will continue to discuss the provision of education to refugees. From thereon, it discusses the extent to which it provides healthcare services. Lastly, it addresses South Africa's compliance with the Sustainable Development Goals and criticism thereof.

1 1951 Refugee Convention.

International Legal Framework for Advocating for Refugee Rights.

The United Nations has taken steps to provide an outline of what a refugee is, including the rights and protection of refugees. Member states are obligated to align national legislation with these conventions.² The international legal framework available for the protection of refugee rights is the 1951 Refugee Convention, 1967 Protocol, to mention a few. Our regional legislation includes the African Charter on Human and Peoples Rights, the 1969 Organisation of the Africa Union Convention, and the 1984 Cartagena Declaration. In their application and interpretation of law South Africa, courts must consider an interpretation in line with international law.³ This is an obligation set by the Constitution of the Republic of South Africa, and it is the supreme law in South Africa; its obligations must be fulfilled.⁴ The 1951 Convention and its protocol are domesticated through the enactment of the Refugees Act, and complementary to this is the Immigration Act.

As also highlighted in Section 234 of the Constitution, “to deepen the culture of democracy established by the Constitution”, Parliament may adopt Charters of Rights consistent with the provisions of the Constitution.⁵ These charters that may be adopted are those of international law; an example is that of protection of refugee rights. Our Constitution in the Republic places an emphasis on the implementation of international law when interpreting legislation.⁶

The United Nations has put in place Sustainable Developments Goals (SDGs) to assist states in managing certain global problems by 2030. The implementation of the SDGs in a nation’s legal policy will help eradicate some problems affecting refugees. SDGs are not internationally binding but are just guidelines provided by the United Nations. With respect

2 Art 2 UN Charter United Nations Charter (full text) | United Nations accessed 20/10/2024.

3 The Constitution of the Republic of South Africa, 1996.

4 Section 2 of the Constitution.

5 See n3.

6 Section 39 of the Constitution.

to SDG 3, “good health and well-being”, most refugees may be psychologically affected by the conditions from which they fled, even in certain situations where they find themselves in their host countries. Hence, this goal is a step by the UN that helps refugee well-being be considered a priority in providing healthcare. “At the Transforming Education Summit, held in New York during the UN General Assembly in 2022, refugee students and educators came together to call for all refugee children and youth to be given access to quality education, through their inclusion in national education systems and relevant education financing mechanisms.”⁷ This shows and serves as an example of initiatives South Africa may take in trying to increase the quality and access to education for refugees in the realisation of goal 4, ‘Quality Education’. As an initiative taken by the United Nations in America, it makes a global statement that encourages other nations, especially Africans, to integrate them into national legislation for refugees. SDG 10 ‘Reduced inequalities’ aims at providing equal opportunities. “Even after fleeing violence and persecution at home, they often continue to be discriminated against or targeted for violence.”⁸ This can be seen by xenophobic attacks, and in South Africa, refugees are denied access to prenatal care, as will be shown further in this article. A deeper context of this will be highlighted below in the essay, showing how refugees are discriminated against and not seen as equals to citizens. SDG 16 ‘Peace, Justice and strong institutions’ promotes inclusivity in societies shunning away discrimination based on nationality and advocating for one society, including refugees. The South African legal framework in Section 6 of the Refugee Act advocates for the use of international legislation such as the universal Declaration of Human Rights, the OAU Convention Governing the Specific Aspects of Refugee Problems in Africa and other Conventions by the UN to protect the interests of refugees.⁹ International laws create a legal obligation for South Africa to protect refugee rights.

7 17 ways refugees are leading on sustainable development | UNHCR accessed 09/09/2024.

8 Kavuro “Housing and Integrating Refugees: South Africa’s Exclusionary Approach” 2019 *Sabinet African Journals*.

9 Refugee Act 130 of 1998.

1. Do Refugees have a right to service delivery? If so, is the South African Government successfully implementing international law and protecting refugee rights in service delivery?

Housing and Settlement

Refugees are awarded all rights in the Bill of rights unless a limitation is provided.¹⁰ This includes the right to “access adequate housing,”¹¹ a limitation to this right according to Section 26(2) of the Constitution cannot be justified constitutionally, as “the exclusionary approach would be irrational and unreasonable since it is contrary to the constitutional objective of protecting human dignity and in violation of the Refugees Act.”¹² Article 21 of the 1951 Refugee Convention promotes access to housing for refugees and the same treatment as to citizens where possible in terms of housing.¹³ As a point of departure, member states are obligated to implement the rights mentioned in the convention while also considering our constitutional stance on the application of international law. South Africa uses an exclusionary approach in regard to housing for refugees. The Housing Act, which provides programmes and housing opportunities, is limited to only citizens and permanent residents.¹⁴ Refugees are considered as non-permanent residents, meaning that they are not eligible for or entitled to any privileges provided in the Housing Act. The lack of proper refugee camps and integration strategies by the South African government despite policies set in place such as the Refugee Act leaves refugees in vulnerable situations where they end up taking matters into their own hands in looking for places to stay.¹⁵ This is evident by the refugees creating informal settlements and squatter townships of their own, causing an influx in xenophobic attacks, as they all vie for

10 Refugee Act 130 of 1998.

11 Section 26 of the Constitution.

12 Kavuro “Housing and Integrating Refugees: South Africa’s Exclusionary Approach” 2019 *Sabinet African Journals* 77.

13 1951 Refugee Convention.

14 Housing Act 107 of 1997.

15 Mpehle “Theoretical perspectives on refugee movements and service delivery in South Africa” 2014 *Sabinet African Journals* 247.

the same basic services.¹⁶ For example, in 2019, Congolese shop owners' property was burnt down by citizens, who claimed that because of his alien status, he was undeserving of having a house or shop, and they were taking away opportunities from citizens.¹⁷

For the integration and wellness of refugees in a host country, housing plays a vital role. The quality of the environments in which refugees settle and the availability of housing directly affect the ability of refugees to thrive and settle in their new environments. Research has indicated that social-legal status acts as an aggravating factor to the barriers for refugee access to adequate housing.¹⁸: "Many African states do not take a human rights approach towards refugee management within their borders and often maintain an encampment system for refugees."¹⁹ This shows how a lack of resources has affected service delivery for refugees, as many refugee settlements in African countries are mainly made for temporary use but have now turned to a permanent settlement situation for them. Without proper documentation and education, they fail to buy or obtain proper housing, which is a duty that is left for the government, but they are failing them.²⁰

Education

Education is also a major area where refugee status affects service delivery. The constitutional right to education provided in Section 29 of the Constitution²¹ does not provide a limitation only to nationals; rather, by virtue of their approved refugee status, they claim this right. One cannot over-emphasise the importance of education for refugees, which not only promotes their integration into society but also helps curb their involvement in

16 See n8.

17 Human Rights Watch "They Have Robbed Me of My Life": Xenophobic Violence Against Non-Nationals in South Africa | HRW accessed 24/09/2024.

18 Brown, Gill, Halsall"; The impact of housing on refugees: an evidence synthesis" 2022 *Routledge Taylor and Francis Group* 228.

19 Helping Africa help refugees - SAIIA accessed 06/09/2024.

20 See n19.

21 See n3.

criminal activities because of idleness or a lack of opportunities. As highlighted in the *Governing body of Juma Masjid Primary School and others v Essay N.O. and others*, indeed basic education is an important socio-economic right directed, among other things at promoting and developing a child's personality, talents to his or her fullest potential... access to school is an important component of a right to basic education guaranteed to everyone in Section 29(1)(a) of the Constitution.²² Section 27 of the Refugee Act provides that, refugees are entitled to the same legal protection, basic healthcare services and primary education as that of citizens.²³ Refugees are awarded all rights in the Bill of rights unless a limitation is provided. This argument was further highlighted by the *Centre of Child Law and others v Minister of Basic Education and others 2020 1 ALL SA 711*. case in which the court held that undocumented learners should not be denied access to education,²⁴ it went on to highlight the same argument in the *Governing body of Juma Masjid Primary School and others v Essay N.O. and others* case that the right to education is a basic right for everyone.²⁵ For this reason, it is not acceptable to deny child access to basic education because their parents are refugees and that they lack proper documentation. Considering that, in matters dealing with a child, their rights are of paramount importance.²⁶

Healthcare Access

The courts are mandated by national legislation, which is the Refugee Act, and on an international level, the conventions put forward by the United Nations, namely, the United Nations Human Rights Convention (UNHCR). A judgement was passed in the case of the *Scalabrini Centre of Cape Town and Another v The*

22 *Governing body of Juma Masjid Primar School and others v Essay N.O. and others 2011 8 BCLR 761.*

23 Refugee Act 130 of 1998.

24 *Centre of Child Law and others v Minister of Basic Education and others 2020 1 ALL SA 711.*

25 See n22.

26 Section 28 of Children's Act.

Minister of Home Affairs and Others,²⁷ where sections 22(12) and 22(13) of the Refugee Act were declared unconstitutional. Apart from the declaration of invalidity, the court highlighted important aspects of this situation, considering that refugees are a very vulnerable group who have fled into the host country because of situations that force them. It is up to the law to protect their interests and put them in a position where they must return to a place they ran away from because incompetent stringent laws are not ideal. The courts are taking measures to protect refugee rights and provide them equal access to healthcare, as shown in the case of *Section 27 v MEC of the Gauteng Department of Health and Others*, where the court overturned provincial health policies, providing that all pregnant women, lactating women and children under six are entitled to free healthcare irrespective of their nationality and documentation.²⁸ Laws are there, and courts are enforcing them, but this is not seen in practice by those who are supposed to enforce and follow them as well. In a report by the International Women's Media Foundations of interviews they had of women, despite this constitutional judgement, pregnant refugee women still find themselves in situations where they are being turned away from clinics to give birth of pre-natal care just because they are refugees or because their asylum papers expired.²⁹

Some women had to turn to home births, putting both the child and the mother at risk; others were asked to pay a bribe fee of R20000 or R30000 by the nurses at some clinics in Johannesburg just so that they could receive healthcare they are entitled to but deprived of because of their refugee status. By denying refugees access to healthcare because of their status as refugees is an inhumane act that affects their right to dignity, and as highlighted by the *Minister of Home Affairs v Watchenuka* case, the right to dignity is not applied based on nationality but

27 *Scalabrini Centre of Cape Town and Another v The Minister of Home Affairs and Others* 2024 3 SA 330 (CC).

28 *Section 27 v MEC of Gauteng Department of Health and Others* (22/19304).

29 Howard G Buffett Fund for Women Journalists Pregnant immigrants say they have been turned away from Joburg clinics | GroundUp accessed 25/09/2024.

applies to all by virtue of being a human being.³⁰ There has been an argument by Mukumbang that “Given South Africa’s limited resources, it has been argued that the state has an obligation to its citizens first before catering for non-nationals.”³¹ However, this approach is problematic, as the Constitution in Section 27 provides that everyone has the right to social security,³² and this right is extended to everyone being national or not. Under the umbrella, the term “social security” involves the proper delivery of services without unfair discrimination. Refugees also deserve quality healthcare, and with a scarcity of resources, improvisations should be made for all. A comment was made by an MEC of Limpopo stating that “You are killing my health system” because a Zimbabwean national was injured and was seeking medical assistance in South Africa.³³ She was criticised for this statement.

Conclusion and Recommendations

Before the government accepts more refugees, as much as they are willing to help, it is best to consider the available resources and if the country can accommodate more refugees on top of providing for its own citizens to avoid a fight for resources between refugees and citizens, such situations leave refugees in vulnerable positions where they are seen as burdens and not humans in need of assistance, and the animosity surrounding them increases, which is evident by an influx of xenophobic attacks aimed at them by citizens. This will help the government be able to provide equally for both parties and provide better services, thus also curbing hostility and xenophobic attacks. Government officials should first accept foreigners as people. Legislation is present, but the government should improve efforts to use it more effectively.

30 *Minister of Home Affairs and Others v Watchenuka and Others 2004 1 All SA 21 (SCA) par 25.*

31 Mukumbang, Ambe and Adebisi 2020 *International Journal for Equity in Health* 2; Alfaro-Velcamp “Don’t Send Your Sick Here” 3.

32 S 27 of the Constitution.


33 BBC News Phophi Ramathuba: South African official’s hospital rant at Zimbabwean goes viral (bbc.com) accessed 24/09/2024.



Chapter 14

Is International Law “Law”?

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Introduction

In terms of international law, there is high contestation and a long-standing debate on whether international law falls under the accepted view of ‘law’.¹ One school of thought states that international law establishes standards and norms that are accepted by nations, organisations, and individuals, consequently establishing guidelines for conduct in areas such as trade, the environment, and human rights. The legally binding responsibilities established by treaties, conventions, and customary practices – which governments often abide by – illustrate the regulative power of its law.²

John Austin, one of the lead minds who did not regard international law as law, construed law as “orders of a sovereign backed by the threat of sanctions; the view that the function of law is to identify delicts (conduct characterised as illegal), which are the condition of a sanction (a coercive act against the law-breaker)”. Austin further argued that affording the title of “law” to international law is improper, furthermore claiming that the duties that it imposes are “enforced by moral sanctions: by fear on the part of nations, or by fear on the part of sovereigns, of provoking general hostility, and incurring its probable evils, in

1 Kwarteng “Is international law really law?” 2018 *Asian Research Journal of Arts & Social Sciences* 1– 9

2 See above the Kwarteng article, n2.

case they shall violate maxims generally received and respected.”³ Essentially, Austin argues that since international law does not have a centralised authority or binding legal consequences, it is not law in the traditional sense. Rather, it is upheld by the majority of the global community and imposed via moral pressure and the threat of retaliation. States abide by these regulations to prevent discord and the unfavourable effects of breaking norms that are generally acknowledged and recognised by other countries.

This paper aims to clarify whether the absence of a centralised enforcement mechanism undermines the classification of international law as true ‘law. To answer this question, this paper first defines what ‘international law’ is and what is meant by centralised enforcement and its necessity. Then, it will draw into focus the challenges caused by the absence of a dependable and authoritative worldwide enforcement organisation by contrasting the national and international contexts of law. Finally, other strategies that aim to maintain accountability and compliance within the framework of international law in the absence of a centralised enforcement mechanism, such as state responsibility and legal certainty, are explored.

What Is International Law?

International law is the self-constituting body of law that aims to unite all human societies. It is the realisation of an international society’s and all societies’ common interests through the application of law. All human societies – including the types of societies commonly referred to as “states” – can freely choose and act according to the legal relations of international law.⁴

Conceptualisation of Centralised Enforcement in the Context of Domestic Law and International Law

A centralised enforcement authority is a body or department that has the jurisdiction to impose laws throughout the entire

3 Lefkowitz “John Austin: enforcement and international law” 2020 *Philosophy and International Law* 8-19.

4 Allot “The concept of international law” 1999 *European Journal of International Law* 31-50.

legal system. This authority ensures that the jurisdiction's laws are followed consistently and that decisions made by courts are respected. A society's formal attempt to ensure adherence to its established laws, rules, and regulations is generally referred to as law enforcement. For uniformity and justice to be fostered, it is essential to have a centralised body responsible for guaranteeing the objectives encompassed by the law's enforcement. Subsequently, society, as we know it would probably collapse into chaos and instability in the absence of law enforcement.⁵

A particular regime is considered to have a legal system if it possesses the essential attributes of a modern state, especially the exclusive right to apply force inside its borders to enforce its laws.⁶ This monopoly of enforcement is exercised domestically by an interlinked connection of bureaucratic agencies that conduct the law, often with the use of force. These agencies include police, militia, prosecuting offices, and penitentiary facilities. In accordance with this view, the significance of law derives from the knowledge that it is reinforced by these institutions' authority and, when needed, enforcement ability.⁷

Domestic Context

In the domestic or local setting, the use of government officials to find and punish people who break the law is known as public enforcement of law, and it is a topic of great importance. Law enforcement agencies work to prevent violations of consumer protection, financial disclosure, and environmental and safety regulations, while prosecutors and police try to solve crimes and prosecute offenders. Agents of a society's tax collection services work to enforce the tax code.⁸

5 Consor, Paynich & Gingerich "Law enforcement in the United States" 2013 *Jones & Bartlett Learning*.

6 Hathaway & Shapiro "Outcasting: enforcement in domestic and international law" 2011 *Yale Law Journal* 252-349.

7 See above the Hathaway article, n8.

8 Polinsky & Shavell "The theory of public enforcement of law" 2007 *Handbook of Law and Economics* 403-454.

International Context

In terms of the global scale, following years of planning, the United Nations member nations and 250 non-governmental organisations convened for five weeks in Rome, Italy, in 1998, officially founding the International Criminal Court.⁹ During the summit, the drafted a treaty establishing the International Criminal Court (ICC), which would have the authority to prosecute people for “the most serious” crimes against humanity, war crimes, and genocide.¹⁰

The purpose of the ICC is to stop and prevent anyone from seriously breaching international law. Advocates of the court claim that the creation of the court marked the beginning of a new era in international justice. Unlike human rights treaties or other international legal instruments, the court can investigate and bring charges against those who are suspected of committing crimes against humanity, war crimes, and genocide. Consequently, supporters of the court assert that the “culture of impunity” that permitted violators of human rights to carry out crimes without fear of repercussions has ended.¹¹

In March 2009, the ICC issued its first arrest warrant against Omar Al-Bashir, the sitting president of Sudan, for genocide, war crimes, and crimes against humanity in Darfur. This historic arrest charge, which was based on UN Security Council Resolution 1593, highlighted an essential flaw in the international legal system: the ICC’s lack of enforcement power. Without its own police force or authority to apprehend and imprison suspects, the ICC relies on state cooperation, which often fails because of political considerations.

Al-Bashir avoided prosecution for over a decade after the ICC issued several warrants, illustrating the limitations of the court’s authority to uphold international law. The court’s inability to

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- 9 Rome Statute of the International Criminal Court.
10 Bardavid “The failure of the state-centric model of international law and the International Criminal Court.” 2002 *New York International Law Review* 9-30.
11 Appel “In the shadow of the International Criminal Court: does the ICC deter human rights violations?” 2018 *Journal of Conflict Resolution* 3-28.

conduct trials in ‘*absentia*’, as required by Article 63 of the Rome Statute, further diminishes its effectiveness in preventing future crimes.¹² This case shows a deeper issue in international law, where the lack of centralised enforcement mechanisms makes it more challenging to recognise international law as “true” law and raises concerns about its capacity to carry out justice.¹³

Counter Argument

However, in international law, this requirement of the domestic model is not met because of the lack of a global government with the authority to enact laws and impose penalties at the international level, such as an independent international armed force.¹⁴ Instead of centralised enforcement mechanisms, international law opts for state responsibility and legal certainty as measures to ensure cooperation and deter any sort of deviation from the implemented rules through the treaties and conventions states find themselves a party.

Nevertheless, using the ICC as an object of comparison, this system seems to be in favour the Western civilisations, or more specifically, focuses more on third-world countries. To date, no Western powers have been subject to the jurisdiction of the court; in fact, by 2016, the ICC was actively involved in ten cases, nearly all involving African states and indicted individuals, for which investigations and/or prosecutions were pending.¹⁵

Conclusion

In conclusion, there is still a lot of contention about whether international law counts as “true” law. This disagreement

12 RSICC (n6) art 63.

13 Hossain “Assessing the International Criminal Court’s response to genocide: a reference to the case of Al-Bashir” 2024 *International Journal of Human Rights* 648–670

14 Sandra “Is coercion necessary for law: the role of coercion in international and domestic Law.” 2015 *Washington University Jurisprudence Review* 35–58.

15 Reynolds & Xavier “The Dark Corners of the World: TWAIL and International Criminal Justice” 2016. *Journal of International Criminal Justice* 959–983.

derives mostly from the lack of a centralised enforcement mechanism that is similar to that of domestic legal systems. International law does not have the direct enforcement power that domestic law does since domestic law is derived from the state's ability to use institutions such as the police and judiciary to implement its laws. This means that essentially states may do what they please without direct repercussions or face any force to face repercussions. Nonetheless, it compensates for this lack of enforcement by ensuring that nations continue to be held accountable for breaking their international responsibilities through procedures such as state accountability and legal certainty. International law certainly plays an essential role in regulating international relations, maintaining order, and fostering collaboration among states, even though it is not law in the traditional sense. It continues to provide a framework that advances global standards, harmony, and responsibility, demonstrating its usefulness in today's highly interconnected and complex globe.

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Chapter 15

The Re-Appraisal of *De Facto* Adoption in the South African Law of Intestate Succession

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Abstract

The eve of the early 2000s signified the genesis of judicial disapproval of the under inclusiveness of the Intestate Succession Act 81 of 1987. *Flynn v Farr* 2009 1 SA 584 (C) is a notable exception. In that case, Davis J upheld the restrictive proposition that factually adopted children have no claim against the intestate estate of the factual adoptive parent (“the narrow approach”). The concept of factual adoption denotes an informal form of adoption where a child is adopted without observing the formal dictates of adoption. With the benefit of hindsight, this paper argues that investing in the narrow approach to adoption stands at odds with the right to equality, the development of new family structures and the best interests of the child. This paper illustrates how the mechanical preference for formal adoption and myopic exclusion of factual adoption prevents the contextual operation of the *de facto* doctrine and the best interests of the child in intestate succession. Furthermore, this paper argues that the narrow approach is too restrictive in the sense that it threatens the rights and emergence of constitutionally recognised family models. Additionally, this paper notes that the narrow approach may constitute unfair discrimination against factually adopted children on the grounds of birth (or analogous grounds of adoptive status). Against this background, this paper



highlights that a novel path of intestacy must be developed to enhance the protection of factually adopted children under *de facto* doctrine. The novel path of intestacy would require the intestate safeguard afforded to formally adopted children to be extended to factually adopted children on a case-to-case basis. Accordingly, this paper presents an approach for determining and protecting the existence of a qualifying *de facto* relationship in the law of intestate succession.

Introduction

Statistics SA has reported that nearly 3.7 million (19%) children do not live with their biological parents, whereas 8.9 million (45,4%) children live with only their mothers, with lone fathers accounting for only 4.2% (800 thousand) of the distribution.¹ Fewer than 6.2 million (31.5%) children live with both parents.² The precise number of factually adopted children is not readily ascertainable, but these figures reflect a sustained and patterned demographic representation of diverse childhood arrangements. To address this point, the prevailing international viewpoint is that the structural setting in South Africa has established a unique feature of parental absence in children's lives.³ Despite modern family dynamics, adoption remains a "grossly underutilised" process and continues to decline across the country,⁴ thereby leaving the sprout of informal family arrangements lurking at the expense of a stable culture of parental presence and patterned family structures. Be that as it may, intestate succession rules continue to hinge on the antiquated family model in denial of the social reality of

1 Statistics South Africa *General Household Survey 2023* (2024) 7 weighted to the United Nations Department of Economic and Social Affairs *World Population Prospects* (2024).

2 Statistics South Africa (n1) 7 weighted to the United Nations Department of Economic and Social Affairs (n1).

3 Hall and Sambu "Demography of South African Children" 2021 *South African Child Gauge* 216 217; Hall, Lake, Mokomane and Richter *South African Child Gauge* (2018) 39 attribute this phenomena to factors such as labour migration, poverty, non-marital childbearing, low marriage rates and cohabitation rates and the like.

4 Louw "Considering the continued viability of adoption as a form of substitute parental care for children" 2018 *THRHR* 26 27.

contemporary childhood. Accordingly, the rise of informal family structures compels the disentanglement of intestate competition between biological parenthood and the nature of existing relationships.

The following example illustrates the exigence of challenging the rigidity of form over redefining the current landscape in terms of substance and principle: A gives birth to B. Shortly after being discharged from the hospital, A and C (boyfriend) abandon B near a river. On her way home, D discovers the abandoned body of B on the edge of the river and rescues him. D and E (husband) raise him in all meaningful ways as their own child. Having given B a family, D and E omit formally adopting B. Fifteen years later, D and E die intestate in a car accident. The current intestate rules would disregard their socially constructed family and deprive B a claim against the intestate estate of his putative parents.⁵ Instead, his claim of intestacy would lie against parents (A and C) unknown to him.

The next section probes whether a child-centric approach favours the inheritance of factually adopted children from their putative parents. Thereafter, a brief discussion follows on whether the differentiation between factually and legally adopted children is constitutionally compatible with the edicts of the rights to equality. Finally, the compounding effect of these assessments leads to an outline of brief guidelines on how courts can determine and protect the existence of a *de facto* relationship in the law of intestate succession.

Indeterminacy, legal certainty and the position of the child

Brief synopsis of the paramountcy principle and the right to family care

S28(2) of the Constitution guarantees the best interests of the child as a standalone right with paramount importance in every

5 *Flynn v Farr* 2009 1 SA 584 (C).

matter concerning a child.⁶ The wording of the right is salient and seeks to entrench a high threshold of consideration in every matter concerning the child.⁷ However, the best interests of the child will not always thump other competing rights.⁸ It is a principle that may be used as a mechanism of legislative interpretation developed to protect and advance the interests of children.⁹ Its source of strength is in its contextual nature and inherent flexibility to adjust to the precise-life situation of the child concerned.¹⁰ As such, it renders it contrary to the best interests of the child to apply a predetermined formula in any area of law for the sake of certainty and determinacy of outcome.¹¹ Accordingly, the content of the paramountcy principle will differ depending on the individual circumstances of the case.

The paramountcy principle complements and strengthens the right to family or parental care.¹² The formulation of the right to family care envisages multiple manifestations of family lives and changing social practices for different people.¹³ It incorporates the right to be cared for by extended family¹⁴ and exemplifies the long-standing and growing practice of many South African children who do not live with both or either parent(s).¹⁵ While parental absence does not mean a lack of parental involvement; labour migration, poverty, non-marital

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- 6 The Constitutional of the Republic of South Africa, 1996.
 7 *Centre for Child Law v Director of Public Prosecutions, Johannesburg* 2022 2 SACR 629 (CC) par 44; Skelton “Too much of a good thing? Best interests of a child in South African jurisprudence” 2019 *De Jure* 557 558-559.
 8 *S v M* 2007 2 SACR 539 (CC) par 26; *De Reuck v Director of Public Prosecutions* 2003 2 SACR 445 (CC) par 55; *Sonderup v Tondelli* 2001 1 SA 1171 (CC) par 29.
 9 UNCRC General comment NO. 14, on the right of the child to have his or her best interests taken as a primary consideration 2013 (Art 3, para 1) I(A)(b); the S case (n8) par 15.
 10 *AD v DW* 2008 3 SA 183 (CC) par 50; the S case (n8) par 24.
 11 the S case (n8) par 25.
 12 *Wilkinson v Crawford* 2021 4 SA 323 (CC) par 91; Boezaart *Child Law in South Africa* (2017) 280-281; s28(1) of the Constitution of the Republic of South Africa, 1996.
 13 *Du Toit v The Minister for Welfare and Population Development* 2003 2 SA 198 (CC) par 19.
 14 Currie and de Waal *The Bill of Rights Handbook* (2013) 606.
 15 South African Law Commission *Review of the Child Care Act Project* 103 (2001).

childbearing, low marriage rates, and the like compound the rise of different family units.¹⁶ It has been correctly noted that parenthood is not merely a matter of biology, as there are many forms of parenthood (including *de facto* parenthood).¹⁷ As a result, care must be taken not to sacrifice different forms of family units at the expense of others.¹⁸

Evaluation

The emergence of diverse family units must be understood in line with the non-prescription of a pre-set legal formula intended to circumscribe the contextual determination of the child's situational arrangements. The current intestate regime undermines the role of the paramountcy principle and completely disregards the existence of nominal biological links between children and parents. By doing so, it overlooks the significance of assessing a *de facto* relationship on an individual basis within existing and established family structures in intestate succession. Thus, a paradoxical disconnect is created between the evolution of constitutionally protected family structures and the precision of outcomes in intestate succession. In the process, the social function of *de facto* adoption, which could favour the inheritance of a factual adoptee in certain instances, is limited by legal short-sightedness. By extension, the paramountcy principle, which knots the fabric of child law, is accorded no substantive value in intestate succession.

It seems that the one-dimensional and forethought outcome of intestacy creates a gap between paper law and reality. However, the mechanical application of intestate principles is mainly based on legal certainty and predictability. However, a principled judicial determination of *de facto* adoption may protect the demands of legal certainty and evade the risk of legislative miscalculation of forethought individualisation and evolving forms of family identity. Once there is constitutional recognition for the social existence of diverse family functions, the capacity

16 Hall *et al* (n3) 39.

17 *Wilsnach NO v TM* 2021 3 SA 568 (GP) par 40-41.

18 *Dawood v Minister of Home Affairs* 2000 3 SA 936 (CC) par 31.

to inherit by way of intestacy should not routinely protect only formally adopted children. At the time of writing, it is declared (and unfortunate) that it can never be in the best interest of a *child* to inherit from the putative parent. A contrary argument requires the family to be understood in terms of the functions it performs rather than traditional categorisation.¹⁹ Thus, it seems prudent to conclude that the paramountcy principle and the right to family care strongly reject the disenfranchisement of factual adoptees on intestacy.

Brief Evaluation of the Intestate Differentiation Between Factual and Formal Adoptees

The Constitution prohibits mere differentiation and unfair discrimination based on a listed ground.²⁰ Unfair discrimination based on a listed ground is presumptively unfair and must be compellingly justifiable in accordance with the limitation clause.²¹ The intestate regime differentiates between factually and legally adopted children. In *Wilkinson*, the constitutional court found that discrimination on the basis that one is not born of one's adoptive parents is based on the ground of birth (or similar ground of adoptive status).²² Citing academic literature with approval, the court noted that the grounds of birth may include fostered or adopted children, especially where a child's birth status restricts him from benefits.²³ It is arguable that the constitutional court's recognition of the expansive variations of the ground of birth encompasses the protection of factually adopted children, particularly in light of that court's appreciation of different sizes and shapes of family.²⁴ The social generalisation

19 Goldblatt "Regulating domestic relationships – a necessary step in the development of South African family law" 2003 *SALJ* 610 616-617.

20 S9(1) and (3) of the Constitution of the Republic of South Africa, 1996.

21 *Harksen v Lane* 1998 1 SA 300(CC) par 53; S9(5) and 36 of the Constitution of the Republic of South Africa, 1996.

22 the *Wilkinson* case (n12) par 78.

23 the *Wilkinson* case (n12) par 81.

24 *Bwanya v Master of the High Court* par 53 and 98-99, where the court poses the question of the extent to which the creation of unconventional family structures must be legally protected.

of intestate rules ascribes a fictional identity of reality to factual adoptees owing to their factual adoptive status. As such, the enfranchisement of formal adoptees at the cost of total extinction of intestate rights for factual adoptees presumptively indicates unfair discrimination.²⁵

However, current intestate rules maintain certainty in applying established principles of intestate succession.²⁶ *De facto* adoption not only frustrates legal certainty but also complicates the difficulty of protecting factually adopted children from child exploitation, such as drug and child trafficking.²⁷ The latter view reflects an *ante-facto* assessment of the posthumous role of *de facto* adoption and fails to underscore the limited effect of *de facto* adoption.²⁸ The limited recognition of *de facto* adoption for intestate purposes will not undermine the integrity and fabric of the formal adoption procedure. On the other hand, the synonym for the rationalisation and contextualisation of factual adoption is not always legal certainty. In fact, legal certainty may receive adequate oversight from a structured and normative *de facto* approach to putative enfranchisement. Conversely, the elevation of legal certainty to declare fiction on social reality threatens the child's support system for the sake of hard-line legislative ends. This portrays a vulnerable social group as a mere case number, worthy of reduction into meaningless abstraction and definition by imaginary circumstance. Accordingly, it is arguable that the social and legal classification of factually adopted children after intestacy is not reasonable and justifiable in an open and democratic society based on freedom, equality and dignity.

25 The different intestate treatment between a formal and factual adoptee is discriminatory in effect and character, considering that the manner in which they differ is not relevant for purposes of intestate succession.

26 the *Flynn* case (n5) par 35--36.

27 the *Flynn* case (n5) par 47.

28 *Government of the Republic of South Africa v Grootboom* 2001 1 SA 46 (CC) par 77-78, where the constitutional court highlights that the state should not sit idle at implementing enforcement mechanisms designed to protect children from various forms of abuse.

Cracking the Code: How to Determine a Legally Recognised *de Facto* Relationship?

Although the intestate rights enjoyed by legally adopted children should be extended to factually adopted children, there is still an evidentiary hurdle. The legal issue central to the *Paixao* judgement offers apt guidance on how to overcome this hurdle.²⁹ *Paixao* instructs the case-to-case determination of whether the facts support the equitable intestate inheritance arising from a *de facto* relationship akin to formal adoption. As a question of degree and matter of fact, the answer ought to put the child in reality as the adopted child of the deceased parent. The next discussion is brief and does not pretend to be conclusive in setting out the preferred approach to the determination of a qualifying *de facto* relationship.

There are no hard or fast rules for determining factual adoption. However, a diverse range of factors relative to each case contributes to a value judgement exercised by a judge in each case. It is common for judges to weigh a synergy of competing factors and make a value judgement of the respective weights. The oft-celebrated factors developed in the *National Coalition* are instructive and sufficiently flexible to apply to matters of *de facto* adoption.³⁰ A parent who has sheltered a child, treated her as his own and represented her to the world as such with a demonstrable intention to adopt may be said to have factually adopted that child.³¹ The role of biology must be limited to focus on the function rather than the form of the relationship between

29 *Paixao v Road Accident Fund* 2012 6 SA 377 (SCA) par 39, in extending the dependents action to cover an unmarried heterosexual couple who had undertaken a reciprocal duty of support, Cachalia JA crafted a creative question by asking “whether the facts establish a legally enforceable duty of support arising out of a relationship akin to marriage?”

30 *National Coalition for Gay and Lesbian Equality v Minister of Home Affairs* 2000 2 SA 1 (CC) par 88.

31 *Road Accident Fund v Mohohlo* 2018 (2) SA 65 (SCA) par 8, 14; 19; *In Maswanganye v Baloyi* 62122/2014 (GNP) (unreported) par 13-14, the court held customary law requires that the intention to adopt be publicised in the form of a symbolic ceremony; *MB v NB* 2010 3 SA 220 (GSJ) par 18-20, where the stepfather of the *de facto* son was said to have performed the duties and functions of a father to his son and placed himself *in loco parentis* during the subsistence of the *de facto* relationship.

the child and parent.³² In the event, the process of legal adoption, if undertaken, would be of such a nature that it would change nothing in the nature of the relationship other than granting formal recognition. Therefore, the right to bring a claim against the intestate estate of the deceased should arise from the fact-specific circumstances of a proven *de facto* relationship.

Concluding Remarks

The time has come to move from the blanket disenfranchisement of factual adoptees to the individual *de facto* assessment of adoption in the law of intestate succession. At the time of writing, the intestate dispensation seeks to abstract if not deny the complexity of the modern family rather than concretise the accepted order of family relations. This approach is visibly out of touch with evolving family dynamics and contemporary social developments. Thus, it is open to a constitutional challenge on the basis of the paramountcy principle and the right to equality. Ultimately, the functionary approach to existing factual relationships should effectively determine the child's entitlement to inherit intestate from the factual parent.


32 the *Wilsnach* case (n17) par 42.



Chapter 16

Development of a Novel Sorghum and Prickly Pear-Infused Cream Liqueur (Afro- Craft)

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Abstract

This study presents the development and characterisation of a novel sorghum- and prickly pear-infused cream liqueur, a unique and innovative alcoholic beverage that combines the natural sweetness of sorghum with the delicate flavour of prickly pears. The increasing demand for craft spirits, exotic ingredients and unique flavour profiles drives the need for innovative products that cater to these trends.

To increase the surface area for the enzymatic action of the sorghum grains, the grinding method was used. For the conversion of starch and gelatinisation, the cooking method was applied. To increase the number of fermentable sugars, sucrose was added. The saccharified mash was cooled and filtered, and the wort was further used for processing. A selected yeast strain (*Saccharomyces cerevisiae*) was added to the wort. The fermentation process was performed by incubating the wort at 32 °C for 8 days. The prickly pear was naturally fermented for 5 days. A stabiliser and flavour enhancers were integrated. For quality tests, an alcoliser, a pH metre and a refractometer were used. For sensory evaluation, a taste panel evaluation method was used to evaluate the acceptability of the products.



Analysis revealed that the use of yeast extract in the fermentation process enhanced the flavour profile of the final product and thus created a distinct aroma. The process of cooking sorghum mash results in a creamier product, whereas the addition of fermented prickly pear results in a well-rounded flavour. The use of xanthan gum as a stabiliser applied at 0.25% was able to prevent the product from separating upon storage. The eight-day fermentation period of sorghum wort yielded an alcohol by volume (ABV) of 15.3%, which was within the target range. The product had a smooth and creamy mouthfeel with brown, beige milky colouration that was acceptable. The pH and Brix of the product were 3.6 and 35%, respectively.

In this study, cream liqueur was developed using sorghum and prickly pears, which were stabilised with xanthan gum and pasteurised for safety. The unique flavour profile and texture of the liqueur were evaluated, revealing high acceptability and potential commercialisation. This research demonstrated the feasibility of using these ingredients as alternatives to traditional ingredients.

Keywords: *Sorghum, Prickly pear, Cream liqueur, Fermentation and Unique flavour profiles*

Introduction

Prickly pear-infused sorghum-based cream liqueur is a modernised traditional beer inspired by the well-known *umqombothi* and the well-known Amarula. It introduces the union of traditional and modern themes within the alcoholic beverage sector. It is produced from fermenting malted sorghum, which is indigenous to Africa, and prickly pears, which are not utilised in beer production.

Rural areas in South Africa have a rich tradition of consuming sorghum beer, a traditional alcoholic beverage. While sorghum beer is popular, there is an emerging preference for beverages with a creamy texture (Ogunremi et al., 2022). Existing options do not blend the traditional flavours of sorghum with the desired creamy texture, creating a gap in the market (Gungor et al., 2024). Current options have

a limited availability of premium, locally sourced liquids with unique flavours in the market. Customer needs include the desire for high-quality, distinctive beverages that showcase local ingredients and craftsmanship (Apud et al., 2024).

The current emotional impact caused by the identified problem in the market includes the desire for a more refined, creamy texture that remains unfulfilled and has limited variety in traditional alcoholic beverages (Agarbati et al., 2024). The current quantifiable impact includes the willingness of consumers to pay a premium for high-quality, unique products. Cultural impact includes the preservation and promotion of South African cultural ingredients, which are prickly pear and sorghum. The target market for this product idea would be the public, including those of legal drinking age, primarily those who already enjoy sorghum beer, traditional flavours, creamy textures, and locally sourced ingredients. It is also targeted at consumers who crave a premium drinking experience with unique flavours and seek products that can be shared and appreciated in social settings.

The science behind the product idea lies in the fermentation of malted sorghum grains with prickly pears and the creation of cream liqueur emulsions. The sorghum grains are soaked in water to initiate germination; this step is crucial, as it activates enzymes within the grains. During sorghum alcohol fermentation, carbohydrates in the grain are fermented by yeast to produce ethanol and carbon dioxide (Hlangwani et al., 2023). Traditional alcoholic beverages such as sorghum beer are often made using this method, which is comparable to the fermentation of other grains (Hlangwani et al., 2023). South Africa has a long and rich history of sorghum fermentation, as this grain has been a mainstay of many cultures' diets for ages (Shumye Gebre et al., 2024).

Prickly pears are juiced or pureed to extract sugars, vitamins, and aromatic compounds, and the juice contains natural sugars such as glucose and fructose, which are fermentable by yeast (Yang et al., 2023). Prickly pear is an edible cactus fruit that is tasty and sweet and has many health benefits. It has been a staple in Mexican cooking for a long time, and its use has spread

throughout the southwest America and beyond. The fruit of the prickly pear tree is used in drinks, juices, jams, and other recipes, and the plant is edible in many areas (Xolo et al., 2024). Prickly pear fermentation involves the microbiological transformation of its natural sugars, primarily glucose and fructose, into alcohol or lactic acid by yeast and lactic acid bacteria. While specific studies on prickly pear fermentation are scarce, general principles indicate that this procedure can enhance a fruit's flavour profile by creating esters, alcohols, and organic acids (Hlangwani et al., 2023). The acidity of the finished product may increase, aiding in preservation and impacting taste. Furthermore, fermentation may modify the antioxidant profile and polyphenolic components in prickly pears, affecting their bioavailability and function (Adekoya et al., 2019).

The aim of this research is to develop a sorghum and prickly pear-infused cream liqueur recipe, evaluate the sensory and cultural acceptability of the liqueur among target consumers and assess the feasibility and viability of large-scale production and market entry.

Materials and Methods

Materials

The following materials were used: malted sorghum grains, brown sugar, prickly pears and condensed milk. Yeast extract, caramel syrup E150, vanilla extract and xanthan gum. The following equipment was provided by Givaudan South Africa (Pty) Ltd: incubator, balance and analytical scales, glass beakers, metallic bowls, cheesecloth, food processor, knife, chopping board, stirring machine, buckets, sieves, pasteuriser, capping machine, spatulas, stove, pot, refrigerator, pipettes, pH metre, refractometer, hydrometer and alcoliser.

Sensory evaluation

The sensory evaluation was conducted in the consumer sensory insights laboratory, where a panel of 12 evaluated the samples in separate booths. Each panellist was given a tasting cup filled

with the product and a paper cup filled with water. The evaluation was based on colour, mouthfeel, texture, aroma, and overall acceptability as a cream liqueur. The responses were captured in tasting sheets that were handed out.

Determining the pH (conducted in duplicates)

The process involved calibrating a pH metre using two buffer solutions (pH = 4 and pH = 7), rinsing the electrode with distilled water, and preparing samples. The samples were collected and decarbonated using a pipette. The electrode was then measured by immersing it in two samples, reading the pH value. After the measurements, the electrode was rinsed and stored.

ABV % (conducted in duplicates)

This analysis involved calibrating the alcoliser and preparing samples by transferring them into vials. The samples were inserted into the device, and the ABV% was read. The results are displayed on the screen, and the device is cleaned to maintain accuracy for future use.

Specific gravity (conducted in duplicates)

The hydrometer preparation process involved cleaning the device to ensure that it was free of residues or contaminants and then starting the analysis. The samples were poured into two transparent cylinders, and the hydrometer was lowered into the samples. The specific gravity readings are then recorded at the hydrometer scale.

Sugar content -Brix (conducted in duplicates)

The process involved preparing a refractometer by pouring a drop of distilled water using a pipette onto the prism and wiping it off using Kim wipes, preparing a sample by decarbonating it, placing the sample on the prism using a pipette, reading the Brix percentage, and recording the results. Post-measurement, the prism was cleaned to prevent contamination for future measurements.

Results and Discussion

Sensory evaluation

Sensory evaluation was conducted to assess the sensory acceptability of the four different cream liqueur formulations. This evaluation took place in the consumer sensory insights laboratory, where a panel of 12 trained testers evaluated the samples. The evaluation focused on five key attributes: colour, mouthfeel, texture, aroma, and overall acceptability as a cream liqueur. The panellists recorded their responses on tasting sheets provided during the session.

In Trial 1, the sample had no xanthan gum, it was noted for its separation after two days, leading to a decline in sensory appeal. The panellists reported that the product had an opaque appearance and described its taste as acidic and bitter. The initial creamy texture was deemed unsustainable, as the product lacked a stabiliser. This lack of stability resulted in a less favourable overall acceptability among the panellists, who rated the product lower in terms of both texture and overall enjoyment. Trial 2 involved the addition of 0.25% xanthan gum. The product did not separate, but it exhibited a thick and slimy mouthfeel, which some panellists found was less pleasant. Despite this, the flavour balance between pear and sorghum was positive, and a light beige colour was considered appealing. Panellists rated this trial higher in terms of colour and flavour balance, although the mouthfeel impacted the overall acceptability. Trial 3 included yeast extract, condensed milk, and vanilla extract but omitted xanthan gum. Although the product separated after one week, it was described as creamy with a pleasant, fruity aroma. The flavour was well received, and the beige colour was appreciated. Panellists liked the creamy texture and aroma, but the separation over time and lack of xanthan gum led to mixed ratings regarding overall stability and texture. Trial 4 included yeast extract, condensed milk, vanilla extract, and 0.25% xanthan gum. This formulation did not separate upon storage and was noted for its pleasant creamy texture. The aroma, with hints of vanilla and alcoholic notes, was well regarded, and the product

maintained a well-balanced flavour profile. Panellists rated this trial highest in terms of all sensory attributes, including colour, mouthfeel, texture, aroma, and overall acceptability. Xanthan gum effectively stabilised the product, enhancing its overall enjoyment.

The sensory evaluation highlights the significant impact of ingredient modifications on the sensory properties of cream liqueurs. The absence of xanthan gum in Trial 1 resulted in product separation and a less favourable sensory profile, with lower ratings for texture and overall acceptability. The introduction of xanthan gum in Trial 2 improved product stability but led to a less desirable mouthfeel. In Trial 3, the addition of yeast extract, condensed milk, and vanilla extract improved flavour and aroma, but the lack of xanthan gum resulted in separation and mixed overall acceptability. Finally, Trial 4 demonstrated that the optimal combination of xanthan gum, yeast extract, condensed milk, and vanilla extract yielded the highest ratings across all attributes, providing a stable, creamy, and well-balanced cream liqueur. The panellists' evaluations indicate that the formulation used in Trial 4 offers the most favourable sensory attributes, highlighting the effectiveness of xanthan gum in enhancing product stability and overall sensory acceptability.

 Two glass bottles with black caps are shown side-by-side. The liquid inside is a pale yellow color and has separated into two distinct layers: a clear, colorless top layer and a thicker, more opaque yellow bottom layer.	<p>Figure 1: Trial 1 sample showing separation after 2 days of being stored in the refrigerator</p>
 Four glass bottles with white labels and black caps are lined up. Each bottle contains a pale yellow liquid that has separated into a clear top layer and a yellow bottom layer.	<p>Figure 2: Trial 2 samples after 2 days of being stored in the refrigerator</p>
 A single glass bottle with a black cap is shown. The liquid is pale yellow and has separated into a clear top layer and a yellow bottom layer.	<p>Figure 3: Trial 3 sample showing an oil-like layer separation after 2 days of being stored in the refrigerator</p>
 A single glass bottle with a black cap and a white label is shown. The liquid is a uniform pale yellow color with no visible separation.	<p>Figure 4: Trial 4 sample after 2 days of being stored in the refrigerator</p>

Table 1: Quantitative analysis results obtained from the four trials

	TRIAL 1	TRIAL 2	TRIAL 3	TRIAL 4
BRIX	Sample 1 – 4.40 °Bx Sample 2 – 4.38 °Bx Average – 4.39 °Bx	Sample 1 – 6.2 °Bx Sample 2 – 6.15 °Bx	Sample 1 – 20 °Bx Sample 2 – 20.01 °Bx	Sample 1 – 36.52 Sample 2 – 36.50 Average – 36.51
	Standard Dev – 0.01	Average – 6.175 °Bx Standard Dev – 0.025	Average – 20.005 °Bx Standard Dev – 0.005	Standard Dev – 0.01
pH	Sample 1 – 3.612 Sample 2 – 3.60 Average – 3.606 Standard Dev – 0.006	Sample 1 – 3.2 Sample 2 – 3.1 Average – 3.15 Standard Dev – 0.05	Sample 1 – 6.5 Sample 2 – 6.47 Average – 6.485 Standard Dev – 0.015	Sample 1 – 6.78 Sample 2 – 6.77 Average – 6.775 Standard Dev – 0.005
ABV%	Sample 1 – 10.61 Sample 2 – 10.59 Average – 10.60 Standard Dev – 0.01	Sample 1 – 10.32 Sample 2 – 10.33 Average – 10.325 Standard Dev – 0.005	Sample 1 – 14.33 Sample 2 – 14.30 Average – 14.315 Standard Dev – 0.015	Sample 1 – 14.67 Sample 2 – 14.69 Average – 14.68 Standard Dev – 0.01
SPECIFIC GRAVITY	Sample 1 – 0.92 Sample 2 – 0.91 Average – 0.915 Standard Dev – 0.005	Sample 1 – 0.94 Sample 2 – 0.96 Average – 0.95 Standard Dev – 0.01	Sample 1 – 0.96 Sample 2 – 0.98 Average – 0.97 Standard Dev – 0.01	Sample 1 – 1.0 Sample 2 – 0.99 Average – 0.995 Standard Dev – 0.005

The results presented in Table 1 reveal notable variations in Brix levels across the trials, reflecting an increase in the sucrose content of the formulations. This increase in Brix values, which measures the concentration of dissolved solids, suggests that more sugar was added or that there was a greater overall concentration of dissolved solids in the later trials. Additionally, the pH values recorded in the table provide insight into the acidity or basicity of the products. Trials 1 and 2, which had lower pH values, indicate that more acidic conditions are typically associated with the early stages of fermentation. In contrast, Trials 3 and 4 exhibited higher pH levels due to the inclusion of condensed milk in the formulations. Condensed milk acts as a pH buffer, helping to moderate the acidity and maintain a more stable pH (Xolo et al., 2024)

The standard deviations in the pH measurements across the trials were generally low, indicating consistent pH readings. However, Trial 2 showed a slightly greater standard deviation, which may suggest minor inconsistencies in sample conditions or measurement techniques. The ABV percentage, which indicates the alcohol content of the liqueur, demonstrated an increase from Trials 1 through 4. This increase can be attributed to variations in fermentation length, with Trial 4 undergoing the longest fermentation period. Additionally, Trials 3 and 4 involved the fermentation of prickly pear, contributing to increased alcohol production, a step not included in Trials 1 and 2. The specific gravity, which measures the density of the liquid relative to water, also varied among the trials. Higher specific gravity values in Trials 3 and 4 correspond with increased sugar or alcohol content, which aligns with the higher Brix and ABV values observed. The low standard deviations across all trials and parameters indicate a high degree of precision in both measurement and sample handling.

Conclusion

This study successfully developed a novel cream liqueur utilising sorghum and prickly pears, demonstrating the feasibility of these ingredients in cream liqueur production. The inclusion of 0.25% xanthan gum was highly effective in stabilising the cream liqueur.

This ingredient significantly enhanced the texture and prevented phase separation, contributing to a more stable and visually appealing product. Pasteurisation at 90°C for 10 minutes was confirmed to be an effective method for ensuring product safety. This process eliminates the need for additional preservatives, maintaining the natural qualities of the ingredients while ensuring the product's safety. The sensory evaluation results indicated high acceptability among the panellists, with favourable ratings for colour, mouthfeel, texture, aroma, and overall flavour profile. The liqueur's unique combination of sorghum and prickly pears was well received, suggesting strong potential for commercialisation. The successful integration of sorghum and prickly pears offers a valuable alternative to traditional cream liqueur ingredients. This innovation expands the range of suitable beverage options, providing consumers with a distinctive and novel flavour experience.

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Chapter 17

Bridging the Gap: Accessible Sustainable Design for South African Impoverished Communities

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Introduction

There is a deep need to create sustainable, conscious and reliable design solutions given our current environmental state so that the planet can be preserved for future generations. The role of designers is crucial, as they shape the current visual landscape, as good designs are what makes our daily life better. Over the past few years, the designer's role has become more important, especially within the context of sustainability and environmentalism, to become more conscious of design.

Theories such as speculative critical design and the Anthropocene have aided in creating a new way of thinking in regard to design; however, there still appears to be a gap. South Africa is a country stricken by many socio-economic issues, such as poverty, unemployment, inequality and a lack of education. The ideologies that influence sustainable designs are far more theoretical and unattainable. This article will expand on how designers can create accessible sustainable designs for low-income communities in South Africa.

Eco-Friendly Design in South Africa

Eco-friendly design is an approach as well as a principle; it involves the integration of environmental protection criteria over the lifespan of a product or service (You Matter, 2019). A philosophy of designing the built environment is the use of physical objects and services that improve the comfort, health and longevity of people who interact with these designs (You Matter, 2019). Eco-friendly design in the context of South Africa is one of the most carbon-intensive economies in the world because it relies on carbon-intensive transport systems and fossil fuels. The inclusion of eco-friendly sustainable design grew out of necessity, as the gap between the wealthy and the poor exposed how crippling the current state of the environment is. South African communities at large should invest in more eco-friendly designs to support impoverished communities that are more accessible and relevant. Design serves to educate, shape and enhance everyday life through an awareness of sustainable solutions while promoting the South African design scene (Culturetrip, 2013).

Speculative Critical Design

Speculative design is a form of design that prompts the user to change the way they think about the world in which they live. The role of Speculative and Critical design is to reconfigure what the present society believes in and what we think is to be true, moral and ethical (Johannessen et al 2019:1624). Through questioning the status quo, discourse is created. Does a specific critical design belong to a world plagued by poor infrastructure, unemployment and poor health care? I question whether this theory belongs only to an idealised world. When approaching possible solutions to some of these problems, the avenues presented are endless; thus, the idea of social dreaming is birthed (Johannessen et al, 2019:1627). Social dreaming is about engaging with the imagined world to create critical ideas concerning society. This theory prompts out-of-the-box thinking, and what we need in South Africa is an out-of-box affordable solution.

Understanding the Gap

When talking about the gap between theory and practice, it feels like discussing two different worlds that should ideally work together but often do not. The gap is between what sustainability is compared to practicality in the daily lives of impoverished communities in South Africa. The problem might be that most designers do not understand the depth of the socio-economic problems in South Africa. Speculative design needs to address the local context rather than relying on borrowed ideas from more dominant cultures. Currently, speculative design in South Africa often operates in isolation from other disciplines in terms of the social sciences, environmental studies and technology, and bridging these disciplines would lead to more impactful and innovative solutions for impoverished communities in South Africa.

Case Studies

I will be discussing two case studies that effectively communicate first about sustainable design within impoverished communities and second about speculative design in collaboration with the needs of lower-income communities.

Tsai Design Studio - Eco-Friendly Example

It is a South African design studio based in Cape Town with young and dynamic architecture and interior and furniture designers. The studio is a multidisciplinary practice with a diverse portfolio of urban projects that each carries our hallmark of creativity, innovation and experimentation. Located in the picturesque Durbanville wine valley, Vissershok Primary School is a rural school attended by children of farm workers and underprivileged families living in nearby Du Noon Township. An old shipping container was refurbished to accommodate an independent classroom for 25 Grade R learners aged between 5 and 6 (Tsai Design Studio, 2013).

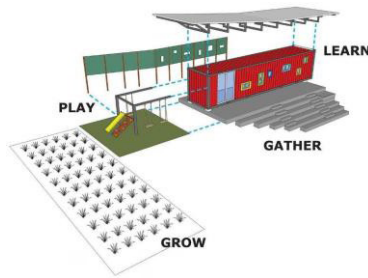


Figure 3: Plan of Building, “Vissershok Container Classroom”, 2013. Digital Photograph (Tsai Design Studio).

The design features appeared to reduce heat by creating a large roof that shelters the container from direct sunlight. Cross-ventilation is achieved through a series of colourful windows located on each side of the container. Built with limited means and budgets, the design makes the best use of available space by incorporating various elements for children to learn, gather, play and grow. The second example is not a local South African company but rather the Malawi Bamboo Bicycle Factory in Africa, which is an example of a speculative design. I have looked at this example because many children have to travel long distances to school and do not have the funds to access transport.



Figure 4: Bamboo Architecture in the Malawi Building Interior, “Bamboo bicycle factory”, 2016. Created in mid journey (A4AC architects).

A4AC Architects, a Johannesburg-based company, took a transformative trip to experience rural Malawi, where they found themselves immersed in a community where bicycles were not just a means of transportation but also a vital part of daily life. Bicycles

in Malawi are not only costly but also heavy, of subpar quality, and ill-suited for the local terrain (A4AC Architects, 2016). While not a new concept, bamboo bicycles have proven valuable for sustainability and performance. By integrating traditional craftsmanship with modern engineering, bicycle frames are manufactured locally using bamboo while still incorporating metal components for mechanical parts and wheels.

Design Synthesis



Figure 5: Plastic Architecture in South African Townships, “Recycled Plastic Factory”, 2024. Created in Bing AI

These two case studies inspired me to propose an idea that fits the landscape of impoverished communities. It is a design synthesis of creating accessible transportation for impoverished communities, inspired by A4AC Architects, yet uses an accessible material such as plastic inspired by the Tsai Design Studio. Although different in approach, both case studies have the same objective of empowering impoverished communities through sustainable design. Vissershok’s design addressed a primary need within the community for better infrastructure to educate children in the community. A4AC’s hypothetical design cleverly took a speculative design approach to create a solution to the transportation need in Malawi. Both of these designs use sustainable and eco-friendly materials, whether

reusing and repurposing current structures such as containers or using natural, biodegradable materials such as bamboo.

Conclusion

As a graphic designer, my aim is to bring awareness of these projects, as designers attempt to bridge the gap between the project itself and having the community as an active participant. By using eco-friendly materials and indigenous construction methods, indigenous methods become familiar to the community so that they are able to be a part of the construction. Having members of the community help build these structures will create a sense of pride, decreasing the likelihood of theft, as pride will produce a need to protect these initiatives.

The recycled plastic factory is merely an example of a possibility that awaits impoverished communities in South Africa. By ideating unique and innovative designs such as mobile clinics, digital libraries and container classrooms in townships and underdeveloped communities, creates a paradigm shift, local empowerment, planet rejuvenation and environmental sustainability in South Africa. These aesthetically pleasing designs inspire the community environment, which is mostly engulfed in pollution, waste and debilitating infrastructures. This multidisciplinary approach will foster creative thinking and generate equilibrium between the innovation of speculative design and the sustainability of incorporating eco-friendly design.

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Chapter 18

Reviving Marlboro

Marlboro, Johannesburg, Gauteng, South Africa

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Introduction

Northeast of Johannesburg's bustling hub lies the Marlboro suburb, which connects to the famously known township of Alexandra. The site we were allocated falls within a 1km radius between the busy N3 highway interchange on Marlboro Drive, which is part of the Jukskei River, and the not-so-old but quiet Marlboro Gautrain station. The site and surrounding developments face major challenges such as river pollution, inadequate and affordable housing, safe pedestrian nodes, and public spaces.

Our project outline for the elective focused on the suburb of Marlboro, which connects to the township of Alexandra and surrounding industrial and city areas as well as the Marlboro Gautrain station as a point of public transport. The area and community face major challenges surrounding adequate and

affordable housing, food security, river pollution, safe and easy pedestrian movement and access, as well as community interaction and trade. Through our project and research, we looked at ways in which these issues could be combatted by using transit-oriented development as a method of integrated spatial city planning. This is very important, as it is believed that this method could reduce greenhouse gas emissions by 23–26% by 2050, as shown by the quote adapted from the C40 website. Through various proposed strategies, we look at how we can revive Marlboro into a transit-oriented development “city” [TOD]. By implementing the TOD method, you look to create a suburban hub that looks at sustainable living through easy access and movement to transport hubs such as bus stations and train stations and, in this case, the Gautrain station but also at creating inclusive, economical, and considerate public spaces surrounding this transport hub.



Figure 1: Marlboro mapping showing site extents

Through site visits, in-depth research on site history, and learning about TOD, we established multiple influential factors that led us to make our proposed decisions. Our proposed five new strategies included sustainable farming, new transport and movement

nodes, new public and culture spaces, new mixed-use housing, and new informal trade and market spaces.

Sustainable farming connected to the housing and made use of terracing systems and water systems from the Jukskei River. Connecting farming to housing allows residents to grow and produce products and sell them through mixed-use housing, with ground floors being public spaces and upper floors being residential. Housing also accommodates a wide spectrum of people with respect to their needs in a residential space, whether it is single units or multiple-bedroom units. This connects to informal trade and market spaces, as one can easily access resources quickly by using two new proposed bridges connecting all three sides of the river and site. These new bridges improve the overall connection of TOD, as they promote safe and comfortable pedestrian and cyclist routes. These new routes also connect and promote new landscaping, outdoor sports, learning, and cultural spaces, which are all inclusive and promote community engagement as well as natural safety by creating lively and busy spaces.

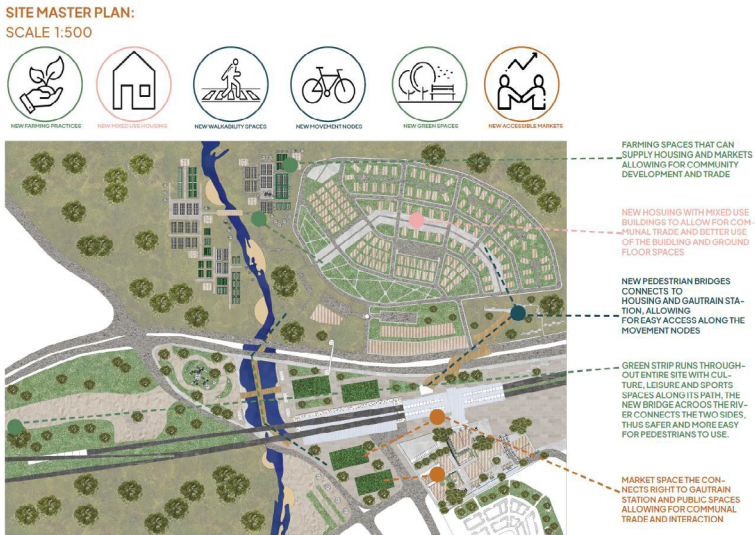


Figure 2: Site master plan

For the housing aspect of our group for the Marlboro station, the conceptual design involves a group of modular structural homes. The typologies consisted of single-bedroom homes, two-bedroom homes, three-bedroom homes and mixed-use typologies. The modular structures are used to allow for change and growth in the future, as they provide the option of expansion upwards, which can allow for more housing within the community, allowing for fewer people without homes in the community. The structures are made with timber frames with panels that can be changed accordingly to adjust to the weather conditions in the area, whether brick, wood, vinyl, or plaster is used. The structures involve sustainable practices to help with the living experience, which include sprung steel structures with wooden louvres to help maximise solar benefits, as they allow penetration for the low winter sun while blocking the high summer sun.

The structures also contain butterfly roofs with galvanised corrugated sheets, which help reduce heat gain due to reflectance and help with collecting water, which is collected and stored in water tanks on the side of the structures that can be used by the people living in them. The butterfly roof shape also allows photovoltaic panels to be used to obtain solar energy from the southern face.

The single-bedroom structures are located inside the housing layout so that they are closer to the facilities that are needed. The two-bedroom modular structures form the central hub of the housing layout, as they are surrounded by both single-bedroom housing and three-bedroom housing. This housing structure consists of a residential space at the top of the structure and a commercial space located at the bottom, which is open to the public and moves along the main public walking spaces, which contain the public plant seating and bicycle lane in between them. The final housing space is the three bedrooms, which are located on the outer part of the housing layout, as these are intended for families to live and form part of cul-de-sacs to allow for more private space so that children can be protected from moving in the housing area. Through these slides, one can obtain a sense of the proposed housing design through exterior and interior

perspectives and thus understand how it promotes integrated spatial planning.

We propose a green strip that runs through the entire length of the site. Through this, we looked to create an environment where members of the community always have close and easy access to outdoor green spaces and do not have to travel far distances to reach one. For this purpose, we decided to investigate the Kamwokya Community Centre in Kampala Uganda by Kere Architects. Through this study, it was important to note how the use of lightweight shading structures framed the recreational spaces but also allowed easy access across the centre as well as interactions that were seamless and promoted a fun learning and extramural environment. Here, you can see how the green strip runs through the entirety of the site and how it can bring all aspects to life. A new bridge connects all three major parts of the site and allows for safe movement across the river. We created recreational spaces for the public to use and mixed-use sports facilities as well as learning centres for all members of the public. Through these images, you can see new spaces such as the sports facilities [here](#) and the learning centre [here](#).

For our farming systems, we then looked at terraced bench farming with public spaces incorporated into it; thus, we looked at the Thammasat University campus in Thailand. It was important to note the runoff areas, the layout of the terraces and the benched areas. Our terraced bench farming protects the soil from landslides and reduces the velocity of surface water runoff, thereby preventing floods. Through urban agricultural farming, food systems are not only environmentally sustainable and economically viable but also socially just and culturally vibrant.

To create an atmosphere that is vibrant and lively for the people in Marlboro. We proposed a market space in which the people in Alexandria can be glad to visit. Having pockets of public spaces for human interaction and great company. places for shopping and places available to lease out for those who need to. The new market space is located on the old Gautrain parking lot,

which is not used by the community. The market also connects to multipurpose sports areas, community centres, and, further, the green strip. Through creating this market space, we introduce intercommunal trade, as farming products can be sold in markets, and local businesses can have formal places to conduct their trade and connect with a larger target market.

We created walkable routes that show Marlboro's diverse activities, encourage pedestrian movement and allow for transportation stops. With two new pedestrian bridges and access points, the movement nodes for the community would improve substantially. We aimed to create a place for everyone. A space for social inclusivity, the distribution of benefits, the support of local businesses, creating neighbourhoods that encourage walking and utilise advanced transportation, communication and productive systems. We believe in developing a space that will currently work for the community but is mindful that it will impact the future. With two new pedestrian bridges and access points, the movement nodes for the community are improved substantially.

The creation of new bicycle stands and waiting points for modes of transport, such as buses and e-hailing services, is also a crucial step in promoting the TOD method and having these connect to housing drop-off areas and green strips is crucial.

Through our various suggested strategies, we believe that the method of transit-oriented development could be successfully carried out, reviving the community of Marlboro and increasing the potential for sustainable development in the future.

Chapter 19

Fashion Theory 3

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Introduction

In recent years, fantasy-themed balls, masquerades and similar mystical events for adults have been hosted by new companies that benefit from both the post-pandemic Millennial and Gen Z consumers, who desire to participate in experiences and the rise of romance and fantasy books on social media platforms such as TikTok, Instagram and YouTube. These events allowed the participants to dress up in fantasy-themed garments or, in the evening, wear and unite with character actors. (Rothenburg. 2024)



Figure 1: Doane Gregory. Universal Pictures.

Enchanting fantasy experiences always existed from Disney and Universal Studios, offering consumers the ability to explore mystical worlds through theme parks and fairs, resulting in billion dollars in revenue (Rothenburg, 2024).

Book Balls, a type of event in which it targets consumers on booktok, a popular community on TikTok that focuses on books being read and discussed, especially romance and fantasy novels. Certain events have been inspired by a book such as Starfall balls, which references the book series “ACOTAR” (Rothenburg, 2024)



Figure 2: Sarait Photography. Cedar City Starfall 2023.

Purpose and Problems for Consumers

Events developed by the book community offer opportunities for readers to attend and live out fantasy-themed experiences such as balls. This would require participants to seek evening wear with a fantasy yet elegant style. Typically, formal attires such as gowns/dresses may be purchased but lack mystical components that are suitable for these event themes. On the other hand, when participants seek garments with an outwardly appearance, they will then come across as juveniles and as a costume, lacking the maturity of elegance and formality. This creates a struggle for participants to find garments that are both mystical and formal. Another disadvantage is the limited use of these garments

since they are worn for a single occasion. This can increase the disappointment of participants due to a wasteful purchase of garments lacking multifunctionality.

Research Methodology

Data collection method purposive sampling

When discovering my target market, I came across a TikTok post detailing fantasy-themed events such as balls held this spring and summers in capital cities, including Cape Town, Johannesburg and Durban. The comment section of the post offered information on the type of people who will be in attendance and whether they have access to evening wear that follows the dress code. This method was more purposive since it focused on the specific demographics of TikTok users, especially those based in South Africa. Another indication of the age range for these users is the content of the books that were the centre of the ball's themes. Since the books consist of adult/explicit content, users interested in these events may range from 18 years old to 40 years old.



Figure 2: The charmed masquerade TikTok comment section, 2024 (screenshot by author)

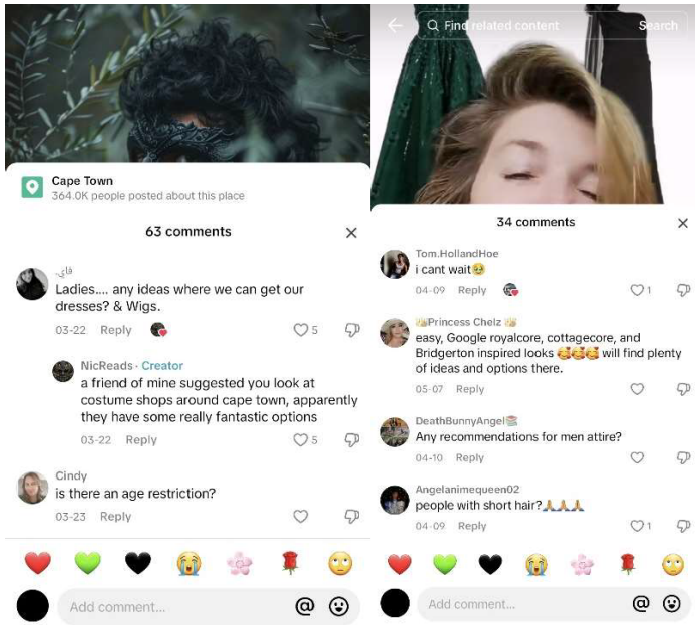


Figure 3: The charmed masquerade TikTok comment section, 2024 (screenshot by author)

Figure 4: The charmed masquerade TikTok comment section, 2024 (screenshot by author)

Purposive sampling findings

Middle class to high class adult individuals are best suited for these events because of ticket pricing and the cost of accommodating travel and attention. The majority of the commenters were females, which clarified that the majority of the attendees would be women. Although some considered purchasing ball gowns, they realised that practical garments that are suitable for outdoor venues or offer comfort and mobility, which allows the wearing to sit, walk and dance, are needed.



Figure 5: The charmed masquerade TikTok comment section, 2024 (screenshot by author)

Figure 6: The charmed masquerade TikTok comment section, 2024 (screenshot by author)

Another factor to consider is the use of the garments. The participants initially purchase them for a single event and later discard them unless they are used again for similar themed events. This could result in extravagant fantasy-themed garments being cost inefficient because participants spend a large amount of money on garments with a single purpose. In some way, this can have a fast fashion outtake where participants may contribute to fabric wastage. To summarise, this creates an issue for garments that are not reusable.

Data collection for snowball sampling

The second method was snowball sampling. The approach consisted of developing a survey with questions regarding the participants' knowledge of the book community, their access to garments with whimsical elements, their style preferences, their interest in sustainable garments, and their feedback on my garment designs for my retail collection. A Google form was developed with a shareable link to send to participants, and a few of them also shared it with their own friends, which caused the sampling method to have a snowball effect. Overall, when gathering responses, the participants provided their names and contact details.

Survey findings

The survey findings suggest that there are certain individuals who are familiar with book communities. Although few do not participate in such communities, many others do. When it came to question their interest in participating in fantasy-themed events, the majority did show interest; however, after analysing the response on their accessibility for fantasy-themed evening wear, the majority did struggle to search for those products in stores.

Based on the survey findings, most participants prefer designs with historical styles that have been modernised so that garments can be practical for changeable occasions. An example would be corsets that are suitable for fantasy balls, which can also be worn regularly for different events since they are a common trend in the present fashion. Another design element desired by participants is craftsmanship, which includes embroidery and beadwork. The technique will not only offer a mystical appearance but also implement 2024 fashion trends. A few suggestions include “incorporating elements of nature into these garments adds a unique and enchanting touch. I favour designs with subtle floral embroidery, delicate leaf motifs, or even small, nature-inspired embellishments such as pearl drops resembling dewdrops. Soft, flowing fabrics that mimic the natural movement of water or the gentle sway of leaves enhance the organic feel. These elements should be tastefully integrated to maintain the dress's

elegance and allow the wearer to feel connected to nature while still embracing the formal fantasy aesthetic” and “Few but complicated patterns of gold to replace the lack of jewellery”.

There were mixed responses concerning the idea of these products having a sustainable approach. It seems that few do not have an interest in minimising their participation in fast fashion or how this collection offers a slow fashion approach.

There were other participants who were interested in sustainability, preferring to purchase garments used for multiple functions and not contributing to fabric wastage and fast fashion.

There were positive responses from the technical drawings that were shown to the participants; however, a few made suggestions such as “A bit more details on the skirt so that it doesn’t look too plain.”

Fashion Trends in 2024



Mermaidcore

The 2023 “The Little Mermaid” movie release inspired fashion designers, who developed a recent trend called the Mermaidcore.

It is an aesthetic offering of marine themed pieces and products for a summer wardrobe (Marcus; Marsh; Sutton; Khan. 2024).

Styles include seashell-inspired bracelets, which sequentially skirt knitwear to layer a bikini. During special events, gowns with a fishtail hemline or shimmery materials can create an ocean-inspired appeal (Marcus; Marsh; Sutton; Khan. 2024).

Mermaidcore Origin

It is believed that the French couturier, Marcel Rochas, developed the mermaid silhouette and was displayed in the early 20th century haute couture. The design was later featured and recognised as the “aquatic-inspired gown” in Jean Patou, 1933, Vogue issue fashion magazine (S. Caruso. 2023). Mermaidcore remained on runways years later, notably from designers such as Bahía Maria, Siendrés and Versace (S. Caruso. 2023).

Mermaidcore In Media Trend

Vogue Arabia Ball

The ball theme “Mermaid of the Gulf” focused on mermaids, which inspired fashion and pop culture for years while bringing awareness to preserve the marine environment, as well as acknowledging the regions’ pearl divine heritage. In 2024, the Emirates Marine Environmental Group (EMEG) collaborated with the Vogue Arabia Ball to make efforts to preserve UAE biodiversity. (N. Ifteqar. 2024)

Many attendees to the ball incorporated the theme into their attires, ranging from dresses consisting of pearls and marine-hued embellishments to garments with silhouette draping and pleats that resemble ocean waves. (Ifteqar. 2024)

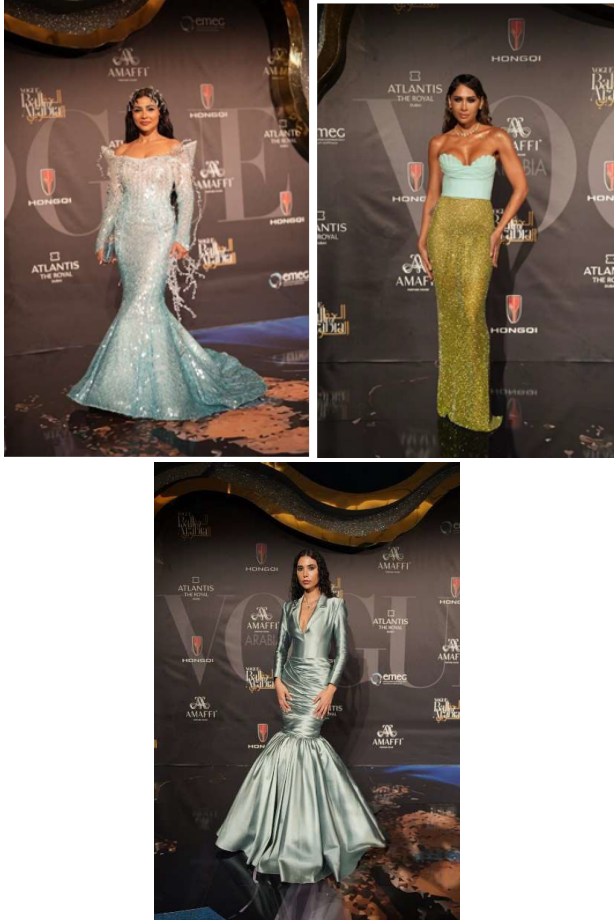


Figure 3: Dazi Production. Mahira Abdelaziz.

Figure 4: Dazi Production. Enjy Kiwan.

Figure 5:

Pearls

Pearls are trending in 2024 and are incorporated into garments and accessories to create an elegant, luxurious and feminine appeal. Pearls can be added to garments such as dresses, skirts

and shoes or used as accessories such as jewellery to develop a sophisticated look. (Levine. 2024)



Figure 10: Photographer Unknown. Kim Kardashian, 2024.

Figure 11: Photographer Unknown. Vivienne Westwood.

Translucent Dresses

Sheer dresses have a new alternative purpose in fashion; other than being common as beach wear, their use aligns with going-out aesthetics, which can introduce more creative yet risky styles, offering designers opportunities to elevate a classic sheer dress by exploring its silhouette and embellishment. (Stewart. 2023)



Figure 12: Photographer Unknown. 7 Fashion Trends that will be everywhere this summer

Figure 13: Photographer Unknown. Sheer fabric knowledge.

Craft Fashion

Craft served as the main theme for various Spring 2024 collections, which include patchwork and distressed leather at Prada; upcycled garments at Balenciaga; exaggerated embellishments at Loewe; and baroque lace patterns at Valentino. (Bobb. 2024)



Figure 14: Photographer Unknown. Diesel SS24

Figure 15: Photographer Unknown. Bottega Veneta SS24.

Figure 16: Getty Images. Kylie Jenner 2017

Target Market Demographic

- Book communities such as book clubs are found in different regions as well as on social media platforms, including TikTok, YouTube and Instagram.
- 18–35-year-old woman
- Middle-class to high-class income individuals. Those capable to afford to attend events/activities such as fantasy balls and masquerades are normally situated in urban areas.
- Consumers reside in cities.

Psychographic

Sustainability

Consumers are interested in purchasing products that not only have sustainable practices but also bring awareness of environmental pollution. This extends to the use of waste materials that are discarded in the ocean.

South African Craftsmanship

Consumers are interested in incorporating South African craftsmanship, such as beading and wired weaving, which are notably used in garments such as traditional attire or toys for children, such as wired cars.

Geographic

Urban Areas

Cities such as Johannesburg, Durban and Cape Town are regions where products are accessible because of the popularity of booktok events located there. Many balls are situated in halls; they are lodges or fields that are mostly located in urban areas. Realistically, consumers will seek nearby clothing stores or boutiques that work well for these events.

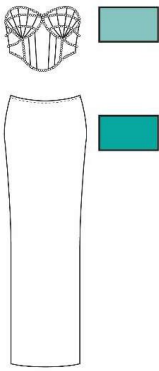
Retail Collection

Design Narrative

Fantasy meets fashion to create a hybrid of modern elegant and mystical clothing. The collection explores the duology luxury and mythology by introducing the unimaginable to reality, with influences of mythological aquatic creatures and marine biodiversity, from pearls, sheer, shimmering and metallic textures, to bring book lovers' dreams to reality. Mermaids/sea nymphs are experiencing an increase in media popularity from movies; social media platforms such as TikTok and fictional books, which overall created a community consisting mainly of

females with a passion for mythology, lead to a desire to become one by participating in fantasy balls to make their dreams a reality. The challenge that hinders the experience of people in the booktok community is finding appropriate evening wear inspired by fantasy themes without appearing too juvenile or as a costume. My collection offers a solution that meets the targeted consumers' needs by offering garments with a mystic and oceanic theme that compliments the oncoming spring/summer season and still appears fashionable so that consumers can feel confident and comfortable when wearing various events ranging from balls and medieval fayre to beach gatherings and ocean themed parties. The popularity of craftsmanship has increased in fashion, and the implementation of skills has not only followed this trend but also explored the significance of ability in South African culture by incorporating metal weaving/melding on the garment to reference the myth of how shiny objects attract sirens. This also brings awareness to ocean pollution regarding the discarding of harmful waste, which can be recycled and crafted for newer use in fashion. The garments create imagery of sea nymphs collecting shipwrecked treasures such as jewellery and fabrics that pollute the ocean, which are used to create a collection of clothing inspired by their environment.

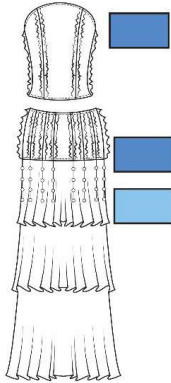
Range Plan For Garments



DESCRIPTION:
CROPPED CORSET TOP: PANUELLED CUPS
FASTENING: LACE-UP
FABRIC: TAFFETA OR SATIN/SATEEN OR A
LEATHER FABRIC THAT RESEMBLES FISH SCALES

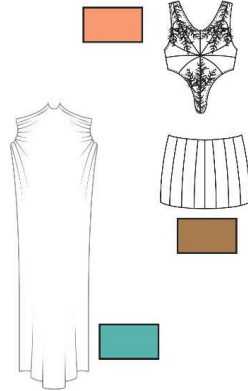
MEDIUM WAIST PRINCE SKIRT
ALTERNATIVE: MERMAID SKIRT
FASTENING: closed-ended zip either on the side seams or CB
FABRIC: TAFFETA, LAME OR SATIN OR A LEATHER FABRIC THAT
RESEMBLES FISH SCALES (Alternative is snake skin)

ADDED DE TAILS:
NETTED SCARF WORN AS HEADWEAR OR AROUND THE WAIST.



DESCRIPTION:
SLEEVELESS PANUELLED TOP
NECKLINE - STRAPLESS
FASTENING: - BEADING TO

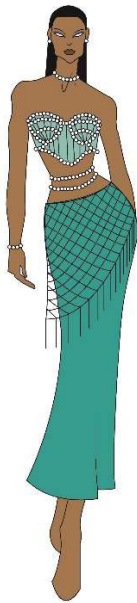
**PANUELLED MEDIUM WAIST SKIRT WITH 3 LAYERED WITH FULLNESS
AND RAW EDGES.**
FASTENING: closed-ended zip either on the side seams or front
panels.
FABRIC: TAFFETA OR SATIN/SATEEN FOR BASIC TOP SECTION;
GOSAMER, SILK, ORGANZA, CHIFFON OR TULLE



DESCRIPTION:
TOP: SHIMMER SHAPED PANUELLED TOP
FASTENING: LACE-UP
FABRIC: TAFFETA, SATIN/SATEEN OR CREPE WITH COTTON LINING

BOTTOM: MEDIUM WAIST PANUELLED MINI SKIRT
FASTENING: 2-CLOSE-ENDED ZIP ON ONE SIDE SEAMS OR LACE-UP ON SIDE
SEAMS
FABRIC: SATIN/SATEEN, TAFFETA OR CREPE

SHIRT DETACHABLE LAYER
FASTENING: WELDED COPPER WIRE TO HOLD THEM IN PLACE
FABRIC: GOSAMER, SILK, ORGANZA, CHIFFON OR TULLE



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Chapter 20

Methods Manual

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*“Architecture is not so much a knowledge of form,
but a form of knowledge.”
– Bernard Tschumi*

The methods manual is a reflective journey through which I develop a natural understanding of my design process. It involves documenting and reflecting on my methods based on my experience as a postgraduate student and the knowledge I have gained over the past three years. These methods prepare me to work with diverse people and the ability to understand any project brief from the beginning.

According to Bernard Tschumi, architecture represents a unique form of knowledge. To truly comprehend this phenomenon, we must explore and experiment with various methods and approaches. I have identified and categorised five methods based on their actions. This approach helps me remember the five basic principles before starting any project.

The first method, which I call the “crafting hand,” involves creating conceptual models by hand. This method allows me to explore my concepts in a three-dimensional space and gain a deeper understanding of space and form. The second method, the “thinking hand,” involves sketching to communicate ideas without the need for verbal description. This process helps me gather all my thoughts about a concept on paper. The third method is site analysis, which involves using my “senses” to develop a comprehensive understanding of my site and its constraints.

The fourth method is “seek,” which involves referring to precedent studies or case studies to apply and refine the details of my projects. Finally, “interchange” is a collaborative method. Working in a collaborative environment stimulates my creative thinking and allows me to interchange my ideas with other design professionals.

In each research method that I delve into, I identify and examine the studies that also utilise this specific method. I would like to explain how I have used these methods in my research and outline how I intend to use them in future projects. I discuss the types of projects that these methods can effectively assist with and provide examples of their application. Additionally, I analyse the specific benefits and challenges associated with these methods, considering their impact on the overall research process.

*“We are what we repeatedly do.
Excellence then, is not an act, but a habit.”
- Will Durant*

As designers, we know that the design process, the first three stages – inception, concept and viability, and design development – are the most crucial stages of any design. By applying these methods, designers develop a habitual mindset that guides their design decisions and actions, leading to more efficient, effective, and innovative outcomes. The methods manual becomes useful for personal reflection and collective learning.

Crafting Hand

Crafting the hand refers to the process of making conceptual models by hand. This method physically manipulates different materials to create conceptual models. I directly engage with materials to explore different forms, structures, and configurations, allowing me to refine my ideas and deepen my understanding of my concepts. Crafting by hand involves crafting by adding, twisting, stepping, or rotating pieces to create the model. I have consistently used this method in every project because it can visually communicate contrast, repetition, movement, hierarchy, scale, and figure-ground in a three-

dimensional space. This method can also assist in developing specific building form concepts and can be expressed through modelling facade skin studies/panels, building sun and shading systems/screening, and structural moments. This method stimulates my creativity and imagination to create forms, volumes, and spatial arrangements without constraints, and it allows me to explore different materials.

The continuous process of testing and developing my chosen concept allows me to have multiple iterations to explore my project's narrative and to have the option to choose at which stage the model aligns with my concept more.

In my third-year elective, I used polystyrene to create figure grounds for my building. I manipulated the polystyrene by cutting away pieces to help me develop a strong concept. My initial concept was to maintain the existing pedestrian movement paths on site and design a mixed-used, multi-story structure around it. I started cutting away the pieces that were in the existing pedestrian pathways to maintain the existing movement on site. After multiple iterations, I struggled with the form of my building. I then had to go back to modelling simpler iterations to assist me. These simple concept models formed the basis of my initial concept and helped refine my decision.

The act of crafting by hand offers an unlimited creative outlet and provides a way to explore concepts. It is a simple way of communicating ideas and gives me testable predictions. The entire method is based on exploration through testing, iterating, and improving conceptual ideas. On the other hand, model-making can present challenges and access the materials and equipment needed to construct a model effectively. It could be time-consuming when developing multiple iterations or comprehending the intricacies of concept models. Most architects do not have the time built into their schedule of deliverables to explore concept models.

A Case for Building Architectural Models

This study discussed the significance of building architectural models in design practice. Bob emphasises the value of physical

models in communicating design ideas, especially in an age where architecture is becoming increasingly reliant on computers. The author's practice prioritises model-making, considering it an integral part of the design process, regardless of cost constraints. Using physical models to capture clients and aid in visualising projects is an approach that Bob advocates for, stressing its significance in making meetings more productive with his clients.

Architectural Model Precedent Studies Creative Learning Method

This study discusses the importance of model-making in architectural design and focuses on the use of photography-based precedents of architectural models to create a resource for students. (Chu, 2017). The article discusses how models can be analysed by their form, structure, and composition to channel design ideas and concepts. The article discusses these categories: functions, types, materials, and scales of architectural models. The function of a model is important because it serves as a communication tool (Chu, 2017).

Models in Design Conversation This study discusses the role of models as tools of communication in architectural and engineering design processes. The author discusses three categories of model types:

1. "Models of", which are representational and illustrate what the final design would look like.
2. "Models for", which are experimental and are used for testing and validating specific functionalities of the design.
3. "Models with", which are conversational and involve collaborative conversation and reflection on changes (Thilakaratne, 2003)

I will probably continue making models in the future, but not as frequently as I would like to. In the work environment, everything is fast-paced, and there is no time to use models in the conceptual phase. However, when I do not have the opportunity to perform physical concept models, I will experiment with 3d modelling software. My method of crafting by hand is an invaluable method

for exploring and refining architectural concepts, encouraging creativity and communication, and developing problem-solving skills.

Thinking Hand

Thinking hand method refers to the process of sketching to communicate my ideas without the need for verbal description. It combines creativity with practicality in the conceptual design process.

This method is one of the most important methods used on a daily basis. I use this method to be able to work through and explore design ideas from spatial to construction details quickly and easily. The thinking hand is also a personal expression of identity, as designers develop our style and express it in our own manner. Additionally, the act of creating by exploring new possibilities and using intuition makes me curious about my designs.

My process of thinking by hand allows me to slow down and process my thoughts and ideas. By using tracing paper, I can layer the sketches and photographs of models to gain a better understanding of my designs. Thinking by hand is also a collaborative process. Communicating ideas to peers or lecturers through sketches can be rewarding and can influence new ideas, different cultural backgrounds, and narratives. I frequently use parts and schematic diagrams, which are an organised way of communicating the components of the site or concept of form in steps. These diagrams include ideas such as massing, programme, circulation, spatial hierarchy, public vs private zoning, transparency and solidity.

Over the past three years, I have been honing my skills in conveying ideas through sketching. During my first year in the architectural course, the emphasis was on the “thinking hand,” where everything was hand-sketched and designed. It was the most challenging year, as it was difficult to get everything done on time. In my second year, I was exposed to a variety of sketching techniques, including digital iterations. While digital iterations are fun, they do not effectively capture the ideas and processes

one goes through. It is important to gain understanding through sketching, as it allows for a record of ideas and processes.

The thinking hand is a time-saving method in the workflow process. It is all about pen-to-paper interaction and the ongoing exploration of ideas that create an effective workflow for the process. It allows everyone to explore whether you can sketch or not. The challenge of sketching can be that it does not represent the conceptual idea. The other challenge that I face is that it sometimes does not look pleasing. Sketching is a skill that needs to be practiced perfectly in a way that conveys one's ideas easily.

Sketching As a Thinking Process: Methodical Approach

This study explores the role of sketching in the design process for the industrial design field. The study uses a methodical approach, which is an exercise given to students to progressively transform a simple abstract element through numerous configurations. (Leblanc, 03-04.09. 2015). This exercise aims to stimulate students' creativity and idea exploration in terms of quantity. This enables them to determine less interesting ideas and utilise the most unique creations. (Leblanc, 03-04.09. 2015).

Analysing Visual Thinking

This study uses protocol analysis to investigate the correlations between visual thinking behaviours and strategies. This method involves monitoring students in sessions using different sketching tools, such as hand sketches, tablets, and pen-input displays. They reported that hand sketching involves a more cognitive process (Chu, 2017). Additionally, this study has identified six visual thinking behaviours: transformation, manipulation, concretise, abstract, modify, and time scan; and four visual thinking strategies: thinking, feeling, watching, and listening (Chu, 2017).

Manual Sketching Relevance This study discusses the importance of sketching in the early stages of the design process (Goldschmidt, 2017). The method used in this study involves manual sketching and its important role in both practice and

education. The author makes a crucial point by discussing the limitations of digital tools, highlighting how they disrupt the fluidity and spontaneity of sketching allows a designer to experience. This study also connects with the other two studies in that manual sketching is a tool for creativity and enhances the cognitive process in design (Goldschmidt, 2017).

Sketching will continue to be an integral part of my everyday life, whether it is for personal or professional exploration. I would personally want to exercise my thinking hand by sketching more. I used to strive for perfection in my sketches, but I have come to realise that there is beauty in imperfect creations.

Senses

Site analysis uses my senses to develop a comprehensive understanding of my site and its constraints. Allowing me to be cognizant of my surroundings, I can see, feel, hear, smell, and sometimes taste in the context of my project. This method involves a few patterns that I am subconsciously aware of, such as typography; climate, wind, sunlight and shade; vegetation; noise; access and circulation patterns of the community; and, finally, appreciation of cultural and historical factors. Site analysis is the initial step in the design process. This method helps in understanding the physical and environmental aspects of the site. It is crucial in the design process, as it involves researching, observing, and analysing the context of a site to inform the early stages of design thinking.

I always begin each project with a site analysis. The first step is conducting desktop research to gather information about the site and its context. Once I am familiar with the details, I visit the site to gather additional information that cannot be researched but instead must be observed using my senses. Allowing the site to inform design decisions before starting the conceptual design process is an advantage. Site visits are valuable, as they stimulate creative thinking by allowing me to visualise the structure. This process helps gather information about the climate, geography, history, society, laws, and infrastructure of a specific site. Site analysis involves visually representing the

gathered information and onsite observations. It is important to synthesise the collected information in a way that is relevant and effectively communicates the findings through mapping exercises or diagrams. The benefits of conducting a site analysis include the opportunity for designers to identify constraints and design them according to the site and context. However, the challenge lies in ensuring that the information gathered is reliable and relevant to the site. If a site analysis is not properly conducted, it can lead to costly and difficult-to-resolve problems.

Volumetric Site Analysis

This study explores an interactive visualisation technique that allows the observation of a site in volumetric, three-dimensional software to reveal more information that cannot be identified in person on site. The approach of this study was to advance site analysis by considering the entire volume of the site and revealing properties such as solar radiation, airflow, and visibility.

Situational Analysis

The study examines how architectural sites are understood by considering human and non-human factors, discourse, and spatial features. To visualise these elements and their relationships, the author uses situational maps. By gathering situational knowledge, the author defines a comprehensive approach and provides a tool for engagement (Lieberman, 2019).

Research and Representation Site Analysis

This study is an academic review of the research and representation of architecture students' work during site analysis. It aims to create guidelines for students to follow during site analysis, and the author highlighted four categories: Site Selection, Site Survey, Problem Identification, and Suggestions for design approach as research methods for site analysis (Park, 2023). Site analysis is a critical aspect of architectural design, and I believe that my comprehension of site analysis will improve

from now on. Conducting site visits is essential for observing and recording vital information to be utilised in future projects.

A method that examines other real projects that have similar attributes is needed. This helps me seek specific information that I can apply and refine in my project. The method refers to previous studies, which I use in every stage of the design process to help apply and refine the details of my project. It is all about learning what other architects have struggled with and applying their trial-and-error methods.

Seek

This serves as a learning tool for gaining more knowledge about a certain structure that has already been researched and constructed by other designers. It also reflects on how I have come to understand the structure and how I interpret it from my perspective. This method can assist in gathering inspiration for an initial design concept. As designers, we gather knowledge subconsciously, and sometimes, seeking a precedent that aligns with one's idea can help initiate the design concept. It can also involve a more in-depth analysis of the precedent's functionality and technical innovation. Finding precedents with structural details is useful because designers have already designed a system, making it easier to gather those systems and improve them to implement them in their project. Additionally, previous studies can be used to understand sustainability practices. Precedents can help apply sustainable solutions to help reduce the effects of climate change. These are the four categories I look for when researching a precedent study. To conduct a precedent study, I start by looking for keywords related to my project to find the best-suited precedence. I also have a list of architect books that I frequently use for my research.

The benefits of precedent studies are that they serve as inspiration and an opportunity to learn from designers' successes and failures. However, I think the most beneficial aspect is the knowledge you gain from researching the preceding studies. The only challenge I find with previous studies is that sometimes they are too complex for me to understand or convey, which can be

frustrating. Additionally, searching for a “perfect” precedent that aligns with a project can be time-consuming.

Precedent–Based Instruction

This study discusses the errors that students make when researching previous studies. It provides instructions based on precedent to avoid false and non-contextual solutions. The three mistakes we make are romanticising decisions in previous studies, neglecting context, and shallow application of precedent studies (Yaseen, 2022).

Precedent Study Patterns

This study analyses numerous buildings in three categories: analytical diagrams, formative ideas, and Partis. This book provides a legend of sketches on how to read the analysis of these previous studies to understand their special characteristics. It makes it easy to understand and to apply to your project (Clark, 2012).

Reflection in Action

This study delves into the method of conducting interviews to gain insight into previous studies. The author conducted open-ended interviews and recorded the responses of expert designers, which he later synthesised. The author reported that the activities of reflection in action, drawing, and sketching were the core characteristics of previous studies in the design process (Defazio, 2008). As we can see, previous studies do play an important role in the design process; they offer insight from previous projects to refine and be innovative.

Interchange

Interchange is the method used to collaborate with other design individuals. In a collaborative environment, I am able to stimulate my creative thinking and seek critiques from my peers or lecturers. It is important to understand that everyone comes from a

different background. Without collaboration, no building would be constructed, which is why it is one of the methods I choose to explore. Collaboration is deeply ingrained in the architectural institution, and although we may not always enjoy it, it prepares us to work with a diverse group of people. Collaborations help to build trust, respect, and mutual recognition among my peers and colleagues.

Interchange can assist in the effective communication of individuals in a collaborative environment. Cross-collaboration allows us to learn from other disciplines, which inspires curiosity to gain knowledge. This method also represents an adaptive approach to the design process, which allows new techniques and explorations to emerge. I discovered that allowing others to view my work helped me to see my concept from a different perspective. The collaboration method that I enjoyed the most was called 'speed dating'. During this exercise, we moved around the table to explain our concept while the stationary listener sketched the ideas that came to mind. We continue this method every 5 minutes to generate multiple iterations. This was a collaborative exercise that helped us get to know one another and gave us an opportunity to discuss and explore the outcomes. This method of collaboration made us aware of how we communicate our ideas to one another. At the end of the exercise, everyone had different outcomes and a different perspective from which to evaluate and reflect.

Cross Discipline Collaboration

In this study, I identified an international conference that explored sociological, psychological, and mathematical methods in architectural design. The speakers of the conference demonstrated research presentations on their individual topics, followed by discussions and debates around these methods (Leopold, 2019).

Teacher Student Communication

This study examines the methods used by teachers and lecturers to provide critical feedback. The study analyses the process of giving and receiving critiques. The author evaluated the lecturer's

performance by identifying their teaching profiles and assessing the quality of their teaching and response. This assessment is based on their professional skills, knowledge, and experience (Goldschmidt G. H., 2010).

Collaboration and Community

This study emphasises the significance of critique as a technique for both students and teachers at art colleges. It establishes a framework where students and lecturers can question and investigate their teachings, learning situations, and relationships. These techniques include active learning through discussion, formative assessment through revisions, and building a community through shared purpose and positive interactions (Flynn, O'Connor, Price, & Dunn, 2022). Interchange is the method that designers use to share ideas, receive critiques, and refine concepts in a cross-disciplinary environment.

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Chapter 21

Paper Pulp Plastic Bag

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Introduction

In today's world, the concept of sustainability has become increasingly vital as we confront pressing environmental challenges and seek ways to ensure a prosperous future for generations to come (Enel Group, 2023). At its core, sustainability in design represents a proactive approach that considers the entire lifecycle of products (Interaction Design Foundation, 2023). This general perspective aims to minimise environmental impact, conserve resources, and promote ethical practices throughout production and consumption processes (Acaroglu, 2020).

Designing for sustainability is an adaptable approach in product development, aiming not only to meet immediate consumer demands (Acaroglu, 2020) but also to ensure that every stage of a product's lifecycle contributes positively to the environment and society (Enel Group, 2023). This approach, guided by sustainable design principles (Enel Group, 2023), strives to reduce waste using recyclable and reusable materials, promoting products that can be reused, repaired, or safely disposed of in a biodegradable manner (Acaroglu, 2020). By adopting these principles, designers not only avoid the environmental impacts of their creations but also foster a circular economy (den Hollander et al., 2017) where resources are used efficiently and waste is minimised.

This sets the stage for exploring how sustainable design principles not only address current environmental challenges but also pave the way for innovative solutions that benefit both present and future generations.

Sustainable strategies in design

According to Acaroglu (2020), “80% of the ecological impacts of a product is locked in at the design phase”. This creates awareness of how important designers are in embedding the impacts of their products. Using sustainable design principles from the initial concept to disposal allows designers to create more sustainable consumption patterns. The design stage is most important for finding opportunities and unique ways to obtain sustainable goods and services in the economy (Acaroglu, 2020).

Consumption is a major driver of unsustainable consumer goods (and the way they are designed) (Acaroglu, 2020). A product will exist in the way it was meant (or designed) to be, “allowing the creator to produce a product which fits into a system...” (Acaroglu, 2020). This system includes planned obsolescence as a way to prompt consumption, which in turn drives the economy to produce more goods, which makes more money.

Case Study: Project Overview

To create awareness about sustainability and its importance in design, I was tasked with a sustainable waste solution project. This project involves designing with the entire product life cycle in mind, from creation to disposal or reuse. For this case study, I am using my own sustainable waste solution product, The Organic Bag (Figure 1).



Figure 1: Organic Bag, 2024, Photo provided by Author

For this project, I researched and developed various sustainable materials by experimenting with different ingredients and organic waste. This approach was guided by the Circular Design Framework, which emphasises sustainability and the elimination of waste throughout a product's life cycle. Based on the research and development of a new sustainable material, I was challenged to design a low-tech, context-aware product and prototype it. The production cycle of the product should adhere to the Circular Design Framework as well as the three pillars of sustainability.

To ensure that valuable information was obtained from my research, I experimented with a wide variety of ingredients. These tests explored different ways to create biodegradable materials using organic waste and ingredients commonly found in household kitchens. After the final experiment, I chose a few and refined a bio-plastic-based paper pulp, which I then used to design a product according to the properties of the paper plastic.

The material refinement stage was significant in the design process, as it determines the outcome of the final product outcome. The material refinement involved experimenting with different types of paper-based waste, such as egg cartons, printer paper, corrugated cardboard, and card, to test their properties. After refining the material's production process, I created a recipe card with ingredients and instructions to allow others to recreate and use it (Figure 2). The next phase was to develop and prototype the actual product. I sketched many ideas but ultimately decided to create a disposable grocery bag, a mock-up collaboration with Woolworths.

The outcome was more successful than initially anticipated. I made large sheets of the paper pulp plastic, cut and assembled the bag with all necessary elements. The bag is disposable and strong enough to hold a moderate amount of groceries.



Figure 2: Paper Pulp Plastic recipe card, 2024, Photo provided by Author

Process: Outline

The advantage of using this material and process is that all cut-offs, waste, and scraps dissolve in water. This process minimises waste and is easily scalable for large production. It mimics nature, where waste from one product or industry, such as the paper industry, can become the core material for a new design. This approach conserves resources and reuses existing waste, reducing plastic pollution and single-use plastic waste.

Attitude towards Sustainability

Initially, I held misconceptions about sustainability and my role as an Industrial Designer in circular product design. I believed it aimed solely to eliminate plastic and substitute all materials with “eco-friendly” alternatives, which did not initially motivate me. However, through research and challenges in designing for sustainability, I realised the importance of sustainability in creating products and services. Now, I focus on creating products with minimal waste and maximum resource efficiency, prioritising durability, reuse, and recyclability.

I now understand that sustainability does not mean eliminating plastic entirely but designing plastic products to last. If a product breaks, it should be easily repairable rather than replaced, reducing waste. When it is finally time to discard the product, it should be performed safely and responsibly. As a developing Industrial Designer, sustainability is now a core principle in my design process. When a product is developed, I aim to ensure that its life cycle is carefully planned and well managed.

Conclusion

Sustainable design is necessary because it helps address global issues such as pollution, climate change, and biodiversity loss (Enel Group, 2023). When designers build sustainability in their work, they become important influences in protecting the environment and preserving natural resources for future generations (Enel Group, 2023). Using the three pillars of

sustainability, this design ensures fairness by giving everyone in society equal access to opportunities and resources, promoting unity and justice (Enel Group, 2023). Economically, sustainable design enhances long-term stability (Enel Group, 2023) and efficiency by reducing reliance on limited resources. This approach not only strengthens businesses but also promotes balanced economic growth that benefits communities and nature and reduces risks linked to environmental harm (Enel Group, 2023).

Overall, sustainable design means committing to innovation and responsibility. It aligns economic success with environmental health and social well-being. By consistently applying sustainable principles in design, designers can lead the way toward a better future where products are not just useful but also contribute positively to our planet and society.

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Chapter 22

Market Research

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Introduction

Since silver is a premium metal, sterling denim emphasises excellence. My denim collection consists of the most upscale, exquisite, luxurious, and sophisticated designs. It suggests superiority, flawlessness, and opulence – qualities. My love of luxury and upscale apparel serves as my source of inspiration. I aim to develop a brand that embodies sophistication and quality while still being sensual and commanding attention.

Aim of the Research

The aim of this assignment is to determine my market research and gather data from potential customers that will influence the design of my luxury denim collection.

The Purpose/Objectives of the Research

- To establish the impact of promoting my fashion collection.
- To assess the effectiveness of the strategies that can be employed to promote my fashion collection.
- To better understand my target market and what kind of clothes they would like to see and potentially buy from my collection.

Research Methodology

Retail collection Target Market

Demographic segmentation.

In terms of demographic segmentation, my retail collection's target market is between the ages of 25–45 females, who are established in their careers, focused on their luxury lifestyle, with a medium to high income/net worth. People who are fashion conscious and can afford high-end luxury clothes. These people possess greater purchasing power and are more likely to be inclined to purchase high-end/luxury products.

Geographic segmentation

My collection targets high-income suburbs in Johannesburg. Sandton, Westcliff, and Rosebank, where it is acceptable and common to consume luxury items. This makes the customers more easily accessible to my brand. These places are characterised by its potential attachment to expensive luxury brands. My collection's geographical segmentation was invented to serve high future markets and maximise the exposure of my brand.

Psychographic Segmentation

My collection targets consumers who value luxury, quality, individuality, and creativity, offering customisable, unique, and expressive bespoke wear. It targets individuals who appreciate attention to details, fashion forward, are active on social media and are influenced by fashion trends. consumers who are living a high life and who are not afraid to go above their budget to purchase anything expensive and of high quality. It targets customers, who love trendy, innovative clothes, and always up to date in regard to fashionable clothing.

Sampling Method

Purposive Sampling

I chose a survey according to my participant's personal judgement. I chose this sampling method because it is suitable for my research. I purposefully chose participants who share my passion of the same style and who possess similar traits, experiences, and knowledge as myself. People from my target market, who are well established in life, love fashion, and are not afraid to purchase anything expensive. They offer the breadth and perspective of this market research.

Data Collection Method

I was able to obtain comprehensive and in-depth information by using a survey method for online data collection via WhatsApp and Instagram. I used the survey method to gather questions in an orderly manner. The questions were open minded, easy, and quick to answer.

Findings

Participants view of design

Eighty percent of my participants expressed the approval of all my designs. From the type of fabric, colours, to accessories. They concur that luxury denim clothing is a fresh look that many people would love to see. Then, 20% of my participants thought that my collection would seem antiquated and boring if I used only denim; they requested that I incorporate other fabrics, such as cotton twill with patterns. They also advised me to attempt to include additional ornamental elements such as rhinestones, glitter and/or chains and jewelleryes.

Improvements

After reviewing my participant's responses, I decided to alter a few elements of my designs, such as chains and accessories. The colours I decided to go for, are blue with a touch of gold and silver,

I then went with gold buttons for functioning and aesthetics. To create an opulent luxury, look, I added chains made of gold and silver, rhinestones, beads, peals, and jewellery accessories. rhinestones, chains, and jewels on denim make it appear expensive and high-end fashion.

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Chapter 23

Revitalising Mine Dump

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Introduction

The Mooifontein Sports Centre project is an ambitious urban regeneration initiative located under the Mooifontein mine dump, an area historically disconnected from the surrounding communities of Diepkloof, Soccer City, and the NASREC precincts. Situated within Johannesburg's industrial mining belt, the site presents both challenges and opportunities for revitalisation. The vision for the project is to transform this forgotten landscape into a thriving sports hub, with a key focus on promoting women's football, particularly through the development of a football academy for Banyana Banyana, South Africa's national women's football team.



Figure 1: Proposed site. Johannes Schoeman 2024

The revitalisation of the Mooifontein site not only seeks to support sports development but also addresses critical issues of social integration, environmental sustainability, and urban connectivity. By cutting the mine dump in half and designing a hill over the N1 highway, the project introduces a new urban landscape with multiple access points, connecting the area to nearby neighbourhoods. Central to the design is the creation of inclusive spaces—ranging from athlete housing and sports facilities to social housing and public amenities—that aim to bridge socio-economic divides and foster community interaction.

At the heart of this project is the belief that sport, specifically women’s football, can be a powerful force for social change. By providing world-class facilities for Banyana Banyana and promoting grassroots football, the Mooifontein Sports Centre has the potential to become a symbol of unity and empowerment for women in sports while also contributing to the broader urban fabric of Johannesburg.

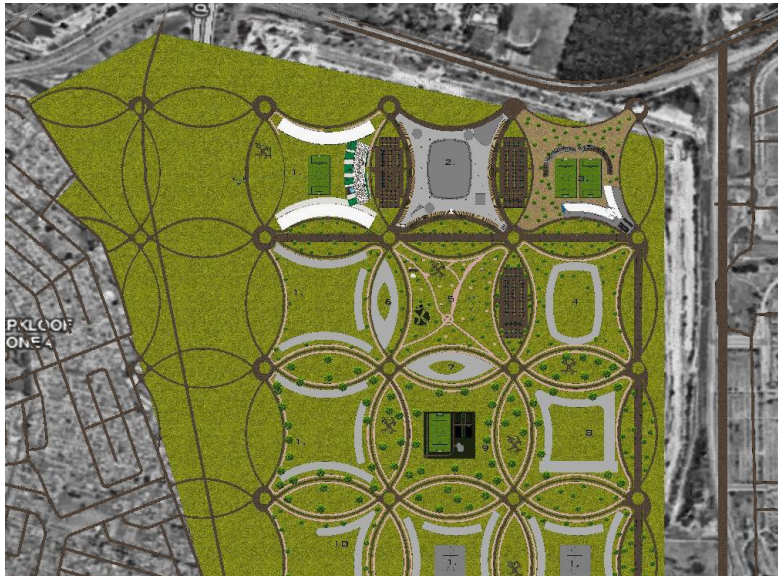


Figure 2: Proposed site plan. Johannes Schoeman 2024

Methodology

The first step in the methodology involved an in-depth site analysis. The site, a former mine dump, presented both environmental challenges and opportunities for redevelopment. It is strategically located between the communities of Diepkloof, Soccer City, and the NASREC precinct. These areas lack cohesion due to historical spatial divides. To address this, the design proposal included cutting the mine dump in half and creating a hill over the N1 highway to serve as a central landmark. This not only bridged the physical divide but also created multiple access points, improving the connectivity between the precincts.

The urban design approach focused on establishing a walkable, accessible environment by designing road layouts at 400-metre intervals, enhancing the connection between the sports centre, public amenities, and social housing. Functional zoning is used to define key areas such as sports facilities, athlete housing, and social housing while these zones are integrated through landscape design and public spaces. The design allows for moments between all the roads to form 'crosses'. These spaces were turned into parking, meditation areas, food gardens and play zones for kids.

In terms of social integration, the project aims to foster inclusivity by providing 2100 social housing units. These are designed to promote interaction between residents of different socio-economic backgrounds, with housing types ranging from 1 to 3 bedrooms to accommodate a variety of household sizes.

To ensure that a project is environmentally responsible, sustainability is a core focus. The design incorporates green infrastructure such as energy-efficient building systems, green roofs, and rainwater harvesting. These strategies contribute to the broader vision of a green city. By aligning with sustainability goals, the project aims to create a resilient and eco-friendly urban environment.

Design Outcomes

The project has multiple points of interest designed in such a way that promotes togetherness and the possibility for a unified community. In consideration of the idea of a cohesive and inviting community, the following spaces are proposed: sports facilities, athlete housing, public spaces and housing. These programmes are briefly outlined below:

Mooifontein Sports Centre

The sports centre is designed in such a way as to promote football. Inside the sports centre is a public gym (open to the larger community) as well as a team office and gym specifically for the Banyana Banyana team. Towards the exterior of the building, there is a clubhouse with restaurants and shops to sell Banyana Banyana related merchandise. There are also two practice fields. These can be seen from the coach's and manager's offices. Adjacent to the fields are two grandstands accommodating a total of 500 spectators.

Athlete Housing

Being near Soccer City allows for the opportunity to create athlete housing at the site. Not only does this allow Banyana Banyana to live on the site, but it also means that players are able to be in very close proximity to Soccer City for significant matches.

Public Spaces

Public spaces are central to the Mooifontein Sports Centre project, serving as key connectors between the sports facilities, housing, and surrounding neighbourhoods. The design integrates a network of green spaces, plazas, and pedestrian pathways that not only enhance accessibility but also promote social interaction and environmental sustainability. These spaces provide areas for recreation, relaxation, and community engagement, including public plazas designed for events, markets, and gatherings. The strategic placement of such spaces ensures easy access to all parts of the site while creating a welcoming environment for residents,

athletes, and visitors alike. By fostering social cohesion and supporting ecological regeneration, public spaces contribute to the overall vision of the project as a unifying, inclusive urban hub.

Social Housing

Social housing is a vital component of the Mooifontein Sports Centre project. It is aimed at promoting inclusivity and bridging socio-economic divides. The development includes 2,100 housing units, offering a range of apartment types to accommodate different household sizes and needs. These include one- to three-bedroom apartments designed to cater to both individuals and families of varying income levels. Housing is arranged to encourage interaction between residents, with shared communal spaces and easy access to public amenities. This mixed-income housing approach encourages a sense of community while addressing the area's housing demand. By integrating social housing into broader urban design, the project created a more cohesive and inclusive living environment, supporting both economic diversity and social unity.

Below is a brief outline of the various apartment types:

- **One-Bedroom Apartments:** These units are ideal for single individuals or couples. They feature a compact yet functional layout with a bedroom, a living area, a kitchenette, and a bathroom. The design maximises space efficiency and natural light, making the units feel open and comfortable despite their smaller size. These apartments are suited to young professionals or students looking for affordable housing.
- **Two-Bedroom Apartments:** Designed for small families or shared living arrangements, these units offer more space. They contain two bedrooms, a living area, a kitchenette, and a shared bathroom. The layout encourages family interaction while maintaining privacy for the occupants. These apartments are intended to provide a balance between affordability and space, catering to small families or roommates who desire to live in a communal environment.

- Three-Bedroom Apartments: These apartments are the largest of the three types and are designed for larger families or residents seeking more living space. They include three bedrooms, a spacious living room, a larger kitchenette, and one to two bathrooms. The layout prioritises family living, with ample room for shared activities and individual privacy. These units provide flexibility for growing families and are positioned to support residents with higher space requirements while maintaining affordability.



Figure 3: Apartment layouts. Johannes Schoeman 2024

Each apartment type is carefully integrated into the overall design of the social housing complex, ensuring that residents have access to shared amenities and public spaces that foster community interaction.

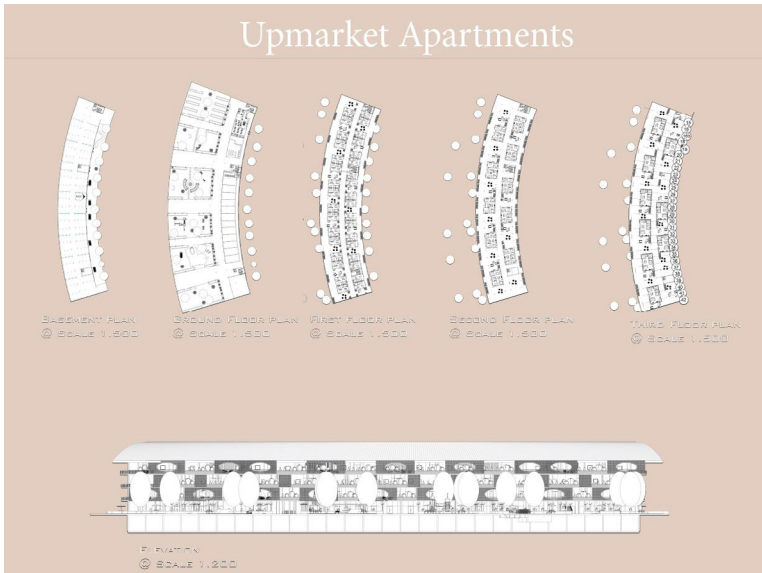


Figure 4: Upmarket apartment floor plans. Johannes Schoeman 2024

Mooifontein Sports Stadium

The Mooifontein Stadium lies at the heart of the sports facilities in the Mooifontein Sports Centre. It is designed to serve as a premier venue for both professional and community football. As the home of South Africa's national women's football team, the stadium meets international standards with a high-quality football pitch, modern spectator seating, and facilities for media, players, and VIPs. Its design emphasises not only high-performance sports but also inclusivity, providing training grounds and fitness centres for local teams and athletes. The stadium's multiple functionalities extend beyond professional matches. It features public spaces and community areas that are accessible for local events, amateur football, and social gatherings. This integration of world-class sports facilities with community-oriented spaces ensures that the stadium acts as a unifying hub for sports development and social engagement, promoting the empowerment of women in

sports while creating opportunities for local participation and interaction.

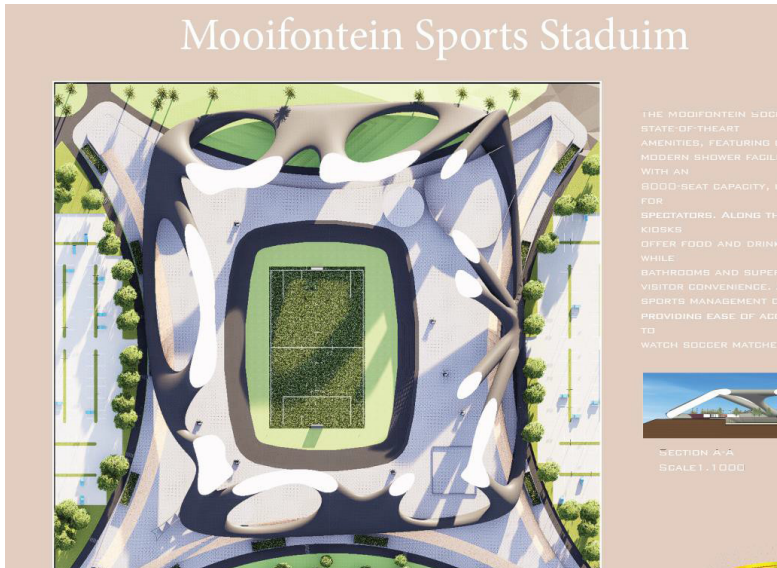


Figure 5: Proposed Stadium Design Johannes Schoeman 2024

Mooifontein Botanical Gardens:

The botanical gardens at the Mooifontein Sports Centre are a vital part of the overall design, serving as tranquil, green retreats within the bustling urban environment. These gardens not only provide space for relaxation but also play a key role in promoting ecological sustainability and community well-being. Designed with a variety of indigenous plant species, the gardens showcase South Africa's rich biodiversity while supporting local ecosystems. Pathways, shaded seating areas, and water features invite visitors to engage with nature, providing a serene atmosphere for reflection and leisure. In addition to their aesthetic and environmental value, botanical gardens serve as educational resources, with signage and interactive elements that teach visitors about native plants and the importance of environmental conservation. By integrating green spaces within the sports centre, the botanical gardens offer a balance between active

recreation and peaceful, restorative environments, making them a central element of the project's commitment to sustainability and community engagement.

Impact and reflection

The Mooifontein Sports Centre project promises to have a profound impact on both the local community and the broader landscape of urban development in Johannesburg. By integrating public spaces, social housing, and world-class sports facilities, the project creates an inclusive environment that promotes social cohesion, sustainability, and community empowerment. The design fosters interaction across socio-economic divides by providing spaces where people from diverse backgrounds can come together for recreation, education, and shared experiences. The inclusion of social housing, alongside the development of professional sports facilities, such as the Banyana Banyana stadium, ensures that the project serves both elite athletes and everyday citizens, reflecting a commitment to equity and accessibility.

A key reflection on the project is the significance of balancing modern urban development with social responsibility. The integration of green spaces, such as botanical gardens, demonstrates the importance of environmental sustainability in urban design, providing not only ecological benefits but also promoting mental and physical well-being for the community. Furthermore, the project highlights the role of sports as a unifying force, with the stadium acting as both a symbol of empowerment for women's football and a platform for local talent.

In retrospect, the Mooifontein Sports Centre project has proven that thoughtful design can create spaces that transcend functionality, becoming vital to community building, social integration, and environmental stewardship. It also reinforces the notion that architecture and urban design can serve as powerful tools for addressing broader social issues, from housing inequality to gender empowerment in sports. The lessons learned from this project emphasise the need for future developments to

be inclusive, sustainable, and community focused, ensuring long-term positive impacts on both people and the environment.

Conclusion

In conclusion, the Mooifontein Sports Centre project stands as a transformative initiative that not only revitalises a historically neglected site but also serves as a beacon of social equity and community engagement. Through the thoughtful integration of public spaces, social housing, and world-class sports facilities, the project creates an environment that encourages interaction and inclusivity among diverse groups. The emphasis on women's football, particularly through the establishment of a state-of-the-art stadium for Banyana Banyana, underscores the potential of sports to empower and inspire individuals while promoting gender equality.

Moreover, the incorporation of botanical gardens and green spaces highlights the project's commitment to environmental sustainability, enriching the urban landscape and enhancing the quality of life for both residents and visitors. The lessons learned from this project demonstrate that urban design can effectively address pressing social issues while contributing to the ecological health of our communities.

Reflecting on the impact of the Mooifontein Sports Centre, it is evident that the project not only meets the immediate needs of the community but also lays the groundwork for future developments that prioritise inclusivity, sustainability, and social responsibility. By embracing a holistic approach to urban and architectural design, architects can create spaces that not only serve functional purposes but also resonate deeply with the communities inhabiting such spaces, ultimately fostering a sense of belonging and pride among all users.



UJ Press

The Academic Development Centre and the UJ Library presented the fourth annual Undergraduate Research Conference on 1 October 2024. The broad purpose of the conference was to showcase undergraduate research at UJ and to develop undergraduate students in preparation for possible postgraduate studies. All the faculties and the colleges were represented in what was a cross-disciplinary conference.

Students wrote short articles about their research projects, which were presented in this first edition of the UJ Undergraduate Research Conference monograph.

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