

# The Technopreneurial Hub: An Innovative Entrepreneurial Approach to Minimise Clothing and Textile Waste

Sweta Patnaik

CPUT, South Africa

[sweta.patnaik2010@gmail.com](mailto:sweta.patnaik2010@gmail.com)

**Abstract:**The clothing and textile industry contribute over all 4% share of global greenhouse gas emissions that starts from initial raw material extraction up until the end-of-use disposal. The root cause being mass-produced fast fashion that is easily and cheaply replaced thus resulting in very large volumes of unwanted clothing that has to be dealt with effectively including the leftover fabrics and offcuts. The "Sustainability Clothing and Textile Project" took shape in 2019 where the students from a University of Technology based in South Africa were tasked to use off cut (leftover fabric edges and trims) fabrics from finished garments in the laboratory that would have otherwise been thrown away as waste and ended on the landfill sites. The project objectives were for the learners to 'think out of the box', be innovative and use critical thinking skills to create meaningful products while introducing the concept of sustainability and technopreneurial skills. Technopreneurship refers to the practice of combining technology and entrepreneurship, where individuals or organizations leverage technological innovations and advancements to create, develop, and manage new ventures or business opportunities. Technopreneurs are individuals who identify and capitalize on technology-based business ideas, utilizing their entrepreneurial skills to bring these ideas to fruition. Through this research we focus on providing an entrepreneurial support, addressing job creation and curriculum development. The research will also address the societal challenges in South Africa for the vulnerable sections of the society for whom these opportunities are limited and at the same time generating new entrepreneurs or increasing accessibility to the job market, creating hope for the future.

**Keywords:** entrepreneurship, technopreneurship, engineering education, waste management, curriculum delivery

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## 1. Introduction

The COVID-19 pandemic had a detrimental effect on developing countries around the globe, with many facing critical challenges such as unemployment, and jobless. The impact on societies around the globe and more specifically on a socioeconomic level became worse. In 2020, global economic output saw a decline of 3.4%, while economic growth was expected to decrease by 5.6% in 2021 (Organisation for Economic Co-operation and Development [OECD], 2021). According to Liñán and Jaén (2020), the recession caused by the pandemic is possibly the most serious among all recessions since World War II. According to the World Bank (2021), COVID-19 initiated a severe contraction of economic activities with a related contraction in GDP growth. In these critical times, securing employment can be a big challenge for fresh graduates (Koe et al., 2021). Maritz et al. (2020) claims that entrepreneurship can be a catalyst to growth and transformation in this uncertain era. As the young generation has both passion and novel ideas, the critical need is to introduce them to the concept of entrepreneurship. Based on these ideas entrepreneurship can serve as a platform over which technology, society, science and industry can grow for the economic benefit of the community and country at large. Although entrepreneurial concepts have gained attention and popularity amongst policymakers, researchers and theorists, however actual entrepreneurial activities have somehow not gained popularity in the field of clothing and textiles in South Africa. It is also one of the industries that emits a lot of pollutants to the environment and waste to landfills.

One of the sub-types of entrepreneurship is 'technopreneurship', which is known as the "new breed of entrepreneurship" (Koe et al., 2021). Technopreneurship encompasses technology for the creation of business products. It is a process of blending technological skills with entrepreneurial competence (Selvarani & Venusamy, 2015). In brief, technopreneurship is about identifying the latest technology and employing it for creative purposes. With the world transforming into a virtual realm, technopreneurship remains intensely connected with entrepreneurship (Okorie et al., 2014). Also, due to the COVID-19 scenario, a lot of businesses have moved towards technology adoption in their operations to meet the unprecedented challenges (Sallomi, 2020). According to Muhib and Khan (2018), business skills (without technological skills) are out of date. Hence, educational institutions should focus on technopreneurial skills to train the youth so that they can seek opportunities, think strategically, and manage risks. Technopreneurship has evolved as a new approach to help rebuild shattered economies. With the onset of the pandemic came increased unemployment and stagnant growth, technopreneurship proves to be rewarding by addressing societal challenges i.e. job creation and unemployment. Those countries affected by these economic challenges it becomes vital that they jump on to the entrepreneurship bandwagon in order to overcome the disruption caused by the pandemic. Hence as

academics there is an effort to improve the educational approaches, curriculum delivery, launch technology incubators and offer support to start-up businesses.

Post the COVID-19 pandemic there is a high potential for groups and individuals to flourish as technopreneurs as the world has adopted the digital transformation on a higher scale. The current research aims to identify the role the academics plays in a department in the Faculty of Engineering at a University of Technology. The aim was achieved by allocating students' projects promoting entrepreneurship and at the same time involving SMMEs in these projects. The study also highlights existing literature by focusing on the need and importance of technopreneurship, as earlier studies have examined the traditional concept of entrepreneurship, leaving technopreneurship under researched (Sussan & Acs, 2017; Koe et al., 2021). In terms of the South African perspective the current study can be considered novel as there is limited research that discusses the development of technopreneurship. It also highlights the need for technopreneurship inclusion in the curriculum post COVID-19.

### **1.1 Aim and objectives of the research**

The research aims to offer solutions for societal challenges such as job creation, unemployment, and economic disruptions, along with focusing on curriculum development, content delivery, and preparing students for the future.

To achieve these aims the following objectives were kept in mind:

- Provide a platform for students to learn, develop problem solving competencies, apply and enhance their skills through the Technology Station Clothing and Textiles (TSCT) enabling job creation.
- Support local entrepreneurs and businesses by providing training, mentorship, business upskill and post-completion follow-up service
- Teaching entrepreneurship in the curriculum empowers students to become more proactive and innovative by equipping them with tools and mindset to succeed to not only become job seekers but job creators.

## **2. Literature review**

Technopreneurship is defined as the combination of technological competence and entrepreneurial expertise (Selvarani & Venusamy, 2015). It is an offspring of entrepreneurship which includes technology. The intention is to create a combination of scientific and technical skills, technological expertise, and individuals' intelligence who work together to form a digital and smart society (Abbas, 2018). In academic world, technopreneurship integrates the world of technology with academic entrepreneurship. Businesses are shifting to the digital mode in addition to their traditional presence. To fight unemployment and other social challenges, increasing technopreneurial potential among the young can be the most effective mitigation tool (Masenya, 2021).

Technopreneurship involves a multidisciplinary approach, integrating technological knowledge, business acumen, and innovative thinking. It requires the ability to identify market opportunities, develop technology-driven solutions, manage risks, secure funding, and navigate the dynamic landscape of technology-driven industries. Technopreneurs often focus on disruptive technologies, such as artificial intelligence, blockchain, biotechnology, internet of things (IoT), and others, aiming to create innovative products, services, or business models that bring significant value to the market.

Successful technopreneurs possess a combination of technical expertise, entrepreneurial mindset, leadership skills, and a willingness to take calculated risks. They embrace the rapid pace of technological change, adapt to market dynamics, and continuously seek opportunities to create and deliver value through technology-driven ventures.

### **2.1 Educational Entrepreneurship**

Education in the current world is an investment as it not only educates but enhances various lifelong skills, entrepreneurship being one of them. It rewards students with boosted earnings, capabilities, and success. Acquiring entrepreneurial skill successfully relies on various factors, but the Theory of Planned Behaviour (TPB) considers the most critical one to be quality education via successful curriculum delivery (Underwood, 2012).

The TPB also supports the notion that a curriculum on entrepreneurship is very important and that curriculum is key among all factors of entrepreneurial education (Yang, 2013; Kim and Lim, 2019).

Education has two main objectives: knowledge transfer and skills development. Entrepreneurship has captured the attention of academicians and educationists (Ndou et al., 2019, Iqbal et. al., 2022). It is recognized as a key skill of the 21st century and is one of those disciplines that can be learnt easily by anyone (Grivokostopoulou et al., 2019). The concept of entrepreneurship started to emerge in late 1980s and early 1990s (Audretsch, 2021) however it was already initiated in 1971 at the University of Southern California in the postgraduate program and later in the undergraduate program (Muhib & Khan, 2010). Entrepreneurial education has a profound effect on students' behaviour by assisting them to attain the required competencies (Grivokostopoulou et al., 2019).

Taking a holistic perspective, entrepreneurial activities are influenced by institutions, education, stakeholders, and the entrepreneurs themselves (Palmer et al., 2021). Fowosire & Idris (2017) highlighted the need for universities to train young individuals as strategic players capable of excelling in a dynamic digital world. With the global repercussions of COVID-19 making job opportunities scarce, education can shift students' mindset from traditional job hunting to setting up successful enterprises. Practical-oriented entrepreneurship education has proven to be more effective than theory-based teaching (Fiore et al., 2019), and including role models' success stories can enhance students' motivation (Zozimo et al., 2017). Graduates equipped with practical entrepreneurship skills can contribute to economic development in society (Feliu & Rodriguez, 2017).

Since the COVID-19 pandemic, businesses have increasingly adopted technology, creating demand for apps and software supporting remote operations. Educational institutions can engage tech-savvy students in technopreneurship by offering relevant curriculum. The Triple Helix theory emphasizes the integration of academic institutions, industry, and government to convert knowledge and technology into economic resources (Mêgnigbêto, 2018). Entrepreneurial education is a key pathway to transfer knowledge to the industry and introduce new technology to the market (Giuri et al., 2019). Technopreneurship, rooted in the Triple Helix theory, plays a vital role in addressing changing market needs, especially in light of the COVID-19 pandemic's relevance to technological infrastructure. The current study focuses on the role of educational institutions in technopreneurial development, examining university education and community entrepreneurs' perspectives. This research is unique as it delves into the realm of technopreneurship in the clothing and textiles context, filling a noticeable gap in existing literature that mainly centers around "traditional entrepreneurship" (Koe et al., 2021) in South Africa.

Hence, understanding the necessity of establishing an educational hub is crucial. The purpose of such a technopreneurial hub is to identify and engage with local, viable stakeholders and interested parties directly at the location. The main goal is to foster networking opportunities and cultivate collaborations with student graduates. This hub aims to accommodate various entities, including individual entrepreneurs, cooperatives, active NGOs, and other economic actors, who can seek support and assistance for their initiatives.

In this case the Technopreneurial Hub is a unit based in the Department of Clothing and Textile Technology at the University of Technology that provides technology support to students/alumni, technopreneur start-ups as well as existing SMMEs who want to grow their businesses.

The following support is offered through this Technopreneurial Hub viz:

- Product development: CAD, pattern making, grading (sizing), marker making (optimize material utilization), 3D simulation.
- Product testing and analysis: a range of textile performance testing and analytical instruments used for e.g. fabric composition, wash test, tensile tests, abrasion resistance, fibre analysis etc.
- Training and mentorship: a range of focused short learning programmes e.g. product costing, production, textile application etc.
- Network facilitation: connecting within the university to specialized research areas, linking to support organisations outside the university viz. business support, marketing, start-up loan financing etc.
- Building linkages with potential customers
- Technology and equipment access. High end specialised equipment available on a booking system e.g, 3D body scanner, ultrasonic welding machine, buttonhole machine etc.

The figure 1 below shows how the TSCT is conducting knowledge transfer to our students and stakeholders where it has two major dimensions, one for the SMMEs and the other being the institution (dept).

Whereas in Figure 2, the incorporation of the technopreneurial hub will serve mutually beneficial to stakeholders involved. Students are provided a platform to learn, develop and gain support from experts. SMMEs are able to collaborate and upskill themselves to meet current market trends. They can also engage with students and be part of youth trends, learn and build new skills. Through their organisations, irrespective of their size or infrastructure receive necessary support, feedback and gain industry linkages and network. As TSCT has a good industry rapport it will be possible to support small and local businesses via future projects or orders. All this generates a lot of data for research purposes as well as influences the Universities teaching and learning.

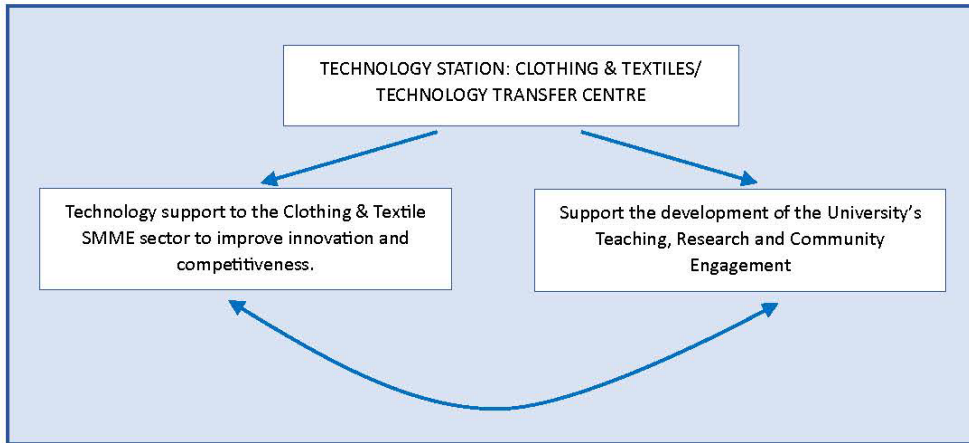


Figure 1: TECHNOLOGY STATION CLOTHING AND TEXTILES (TSCT) SMME SUPPORT (CURRENT)

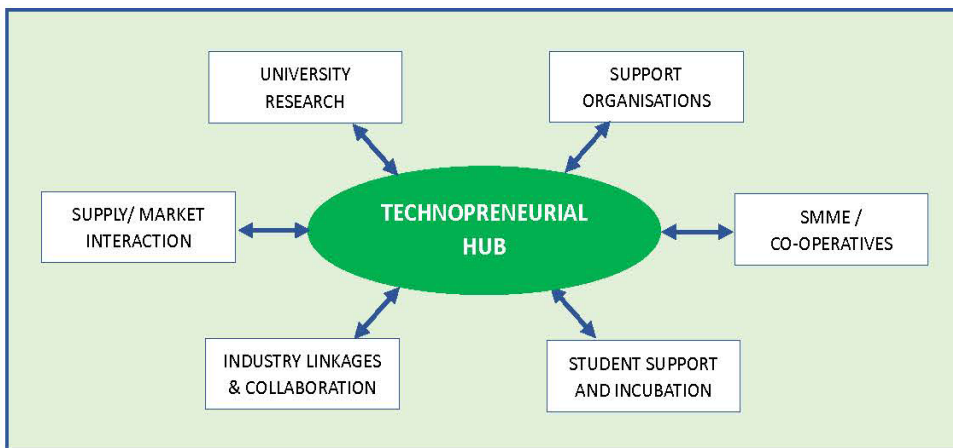


Figure 2: TECHNOPRENEURIAL HUB IN DEVELOPMENT

### 3. Research Methodology

#### 3.1 Participants

This research commenced with the involvement of students, and later, Small, Medium, and Micro Enterprises (SMMEs) were added, making them the initial focus of the study. As the project was about nurturing an entrepreneurial mindset, fostering creativity and innovation, adaptability to the evolving job market and be a lifelong learner it was important that student feedback was collected at the end of the project to understand what they had learnt, what worked best and what more could be done differently. The research was conducted at a research-intensive institution in Cape Town, South Africa, involving approximately 40 participants enrolled in the Clothing and Textile Technology qualification within the Faculty of Engineering and the Built Environment. The course requires students to possess foundational knowledge of entrepreneurship and supply chain management. The curriculum encompasses topics such as supply chain management, processes, technology, and performance, while the entrepreneurship module covers product and operation strategy, product costing, technical drawing, and financial planning.

### 3.2 Study design

During the 15-week teaching and learning intervention, participants had valuable learning experiences. The initial weeks focused on introductions, with students engaging in repetitive Marketing sessions to reinforce product saleability concepts. They were grouped together and tasked with pitching 3-5 innovative ideas aimed at addressing real-life gaps or challenges. Throughout the process, low-stakes formative assessments were conducted before the project's completion. The theoretical aspects of the modules were covered during lectures, after which students commenced group work on the selected project idea, which received approval from the academics due to its feasibility and relevance. To start the project, students conducted market surveys targeting their intended audience to understand the need for their waste-based products, created from leftover off-cut fabrics provided generously by retailers.

Two academics, who were subject lecturers, were directly involved in the project, and occasionally, students sought expert input from other academics regarding patterns, garments, or textile testing. The timeline of the project consisted of different phases: Weeks 1-3 focused on idea pitching, finalization, and market surveys. Weeks 4-6 involved theoretical concepts and approaching willing SMMEs to discuss project ideas. During Week 7, students collected waste fabrics based on their product requirements. From Weeks 8-12, students dedicated their time to work on product creation within allocated time slots. In Weeks 13-14, they produced a digital storytelling video documenting their project journey, compiled a report based on market findings, product reviews by SMMEs, the final product, and the lessons learned, which served as their final module assignment. Finally, academics provided feedback forms for students to offer their input on the entrepreneurship project.

### 3.3 Data collection

For data collection, academics shared a survey form with the project participants, specifically the students involved. The survey comprised a mix of open and close-ended questions, aiming to gather information about their project exposure and the lessons they learned. The study adopted a qualitative approach, and the data collected were analyzed using Atlas.ti for coding and thematic analysis for quantitative analysis. Following the process outlined by Braun and Clark (2006), the academics familiarized themselves with the data to allocate appropriate codes. They then conducted multiple reviews and analyses to refine the coding process. From the coded data, themes emerged, which were further revised and compiled into the final report.

Given the qualitative nature of the research, the analysis aimed to explore potential themes within the data. The researchers considered the strengths and weaknesses of conceptualizing themes strictly without quotes versus using quotes to provide readers with evidence. They opted to include quotes from the data to allow readers to independently assess the credibility, accuracy, and fairness of the findings (Corden and Sainsbury, 2006).

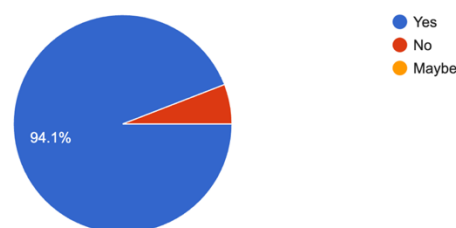
## 4. Results and discussion

The academics completed the analysis for each question and have provided results under this section for each question. The responses were via google forms therefore some of the responses are screenshots from the student responses.

### 4.1 Intention and interest in the project

94.1 % of students highlighted their interest towards the project as they felt like working towards their own start-up enterprise. The responses are that of groups and not of individuals hence the number.

Did it generate interest at that stage?  
17 responses



Few responses of coded question above are as follows:-

*“There was uncertainty on whether we should make a garment or a product that is just made from textile, our first idea was to make a tote bag or a Convertible backpack tote bag. I found creative ideas that I didn’t know about before. I came to know what entrepreneurship is really about.”*

*“To be honest, I didn’t know that one can make a product or a garment out of offcuts, so I had no idea on what to do. Later I through lectures learnt we are producing sustainable products. Creating something that is more attractive to township people, which is where I live. I am already planning to start my own business.”*

## **4.2 Project highlights**

The students initially were unsure of where the project is taking them or what their learnings will be at the end. As this was their first exposure to a technopreneurship project in the department they were unsure what the final outcomes hold. They had some lovely comments as extracted from quotes.

*“The concept of actually making something from offcuts and it ending up being visually appealing and functional. Having to use fabrics that were not fit for the product to produce a product out of it.”*

*“We wanted to create something that people needed but did not know that they needed it. Something that's important but taken for granted. To get more knowledge on how to develop or make something out of nothing, also how to draft a plan on how to start a business. Travelers always lose their important belongings. So we wanted to eliminate that and make something cost effective for them.”*

*“Connecting with my partner to brainstorm innovative ideas as well as being able to develop and make my own tote bag as a lover of totes. Tote bags are popular, and I also used it and they're also easier to introduce to the market.”*

## **4.3 Learnings from technopreneurship project**

As the project aims to connect to the real-world be it skill development, addressing a real issue, or technopreneurial skills it is important for the academics to understand how the project contributed to student learning and development.

*“One can make products from offcut material and start a business that can generate profit provided that the products that are being made are worth purchasing. I can take do things for myself using unwanted fabrics. That I can create something valuable from trash.*

*“I've learnt that customer preferences change as time goes so which is why companies should adapt to the change. That it is not a child's play to open a company. And all the department's which companies have are necessary for it to be a success or for it to succeed.”*

*“Get more knowledge about how to start a business and gain more information about how to think out of the box. how to be a business owner and entrepreneur one day. I have acknowledged that instead of being unemployed I can use the skill to produce products and sell them using any off-cuts.”*

*“Considering means of selling a product to the correct market and analysing the final product to assess whether is suitable for mass production.”*

6. What kind of learning do you think has taken place in the course of this project? (making sense of the subjects, grasping the knowledge, etc)

12 responses

- Learning to work as a team and the importance of meeting deadlines
- Sustainability  
Where by we thought to make something out of nothing  
That helped us a lot in way that we come up with ideas to make product keeping in mind of the waste materials we should choose from
- Understanding the course at a broader level, being exposed to problem solving and working under pressure as well as with different team mates.
- It opened my eyes to be able to understand the relationship between a business and consumers and how they influence each other
- I have learnt some sewing skills from the project because it was not as easy as sewing garments. I now know I can do anything I can think of with the right resources. The project encouraged us to go out there and make connections with small businesses which I believe could be resourceful in future.
- i loved the subject because it made me realize that i can archive and create anything once i set my mind to it. and i will never find my self with no employment in future because i can be my own employer.

#### 4.4 Honing a lifelong learning or technopreneurial skill

Students in the current digital world are considered advanced in the field of technological adoption. Hence when asked to post their work on social media, get surveys done online or create digital storytelling videos, they were eager to learn and incorporate it into their products and their projects. They considered all this as a learning which they otherwise wouldn't have cared enough to learn. It isn't surprising that students at the Diploma level have a good circle of influence from various sources on social media.

*"The technopreneurship project has made me more aware of power that lies in recycling as well as producing something that can be viewed as sustainable to the environment. I was able to install smartness into my products. It has improved my outlook in a way that I take waste into consideration when making clothing."*

*"I thought all this was a lie just for the media. But now that I had produced a sustainable garment from off-cuts and old garments. It think this is really a way forward for our clothing industry and it's possible. I've learnt a lot from doing the project by to think about many ways of how to generate an ideas and also to plan before doing something."*

*"I got motivation to be more entrepreneurial and use social media for education. Technopreneurship is the way forward. It can help minimize cost and Waste while maximizing profits. "*

9. After this project we all can now relook at clothing waste differently. How do you intend to collect waste if you want to have your own start-up at a later stage?

12 responses

- Working closely with my community by making sure everyone is aware of sustainability.
- Approach sewing sites or factories and ask for offcut donations
- By asking companies to please supply us with their waste and tell them what is it that we going to use it for
- Sourcing it from small businesses, in our department, and just storing up left over fabric or garment I no longer wear.
- Yes  
I am going to start small by asking family members and close friends to give me waste textile materials that they so not use, and I will then do something out of it each time and give it to the needy.
- i will create a social media profile where i will elaborate my ideas and the reason i want those waste to motivate people to engage in my vision. and i can contact few CMT for they off cut or reject which i could buy in less cost..

## 4.5 Knowledge transfer

Students were asked if they after being part of the project have earned some skills and knowledge to transfer it at a later stage. They felt quite confident about it and share it with communities. Some of them felt they could share and build on this knowledge to start their own business. Some responses have been shown as below.

8. Now that you have aced/mastered making a product out of waste do you think you can transfer this knowledge to other? Please elaborate

12 responses

Yes, whatever old clothes you have at home instead of throwing them away Design something
Instead of getting rid of bottles or old clothes one can use those combination to make different shapes vase or even different type of lamp Structure. We can utilise this material and turn them into useful household items. Turn old clothes into fleece, mats cushion cover by doing patch work or doodlage of various pieces together.
Yes I do, I've been thinking of starting a small business using offcuts to make and sell fashionable bags
Of course it since it the second time going through this learning process, I can definitely transfer it to anyone.
Yes, it will also benefit us to transfer the knowledge we have to others in a way, because the more we interact with people the more we also gain knowledge from them.
Yes we're going to back to SMME to present our innovative ideas and to the community at large
Yes, but so this is a very challenging thing to do and requires alot of patience

The image below is the final response that students gave when been asked what their final thoughts were around their learning and understanding of the subject. The responses highlight the relevance of the subject and its contribution towards student learning and support towards the project. Some have responded stressing the fact that they have found it beneficial.

12. Final thoughts about the subjects, learning and assessments modalities that you want to highlight, please do so.

7 responses

Both subject taught me how to do a proper business plan, how to generate meaningful, functional and innovative ideas, and with the knowledge and experience I gained from both lectures these can help me in future if I decide to venture into business. Also those many presentation we had helped me overcome my anxieties of talking infront of people compared to when I started. I know know how to develop a product and market it.
I'm not sure if understand the question but As a whole it was a great experience however we learned in a short time frame.
This project was challenging, but I learnt a lot within a short period of time. Thinking out of the box and coming up with solutions.
Overall both the lectures gave enough study material and insight on what is needed for the duration of the subject. It was great doing assessments based on som9we developed on our own
I like the learning(theoretical) and the practical work which is done after learning And it equips us to broaden our minds

So it was observed from the feedback, student presentations and some face to face feedback post oral presentations that the learning nurtures creativity, encouraging students to come up with new and original ideas, products, or services, which are essential for driving progress and success in various fields. Students gained a better understanding of technical concepts that further assist in innovative ideas, financial concepts, budgeting, funding, and managing resources, which are crucial skills for personal and professional financial success. Teaching it in the curriculum can inspire students to create businesses with a focus on social and environmental impact, promoting sustainable practices and responsible entrepreneurship. As the job market continually evolves, entrepreneurial skills equip students with the ability to adapt, innovate, and pivot their careers in response to changing circumstances and industries.

## 5. Conclusion

The primary objective of this study was to investigate whether the learning environments in technopreneurship-related activities adequately supported all types of learners in the department. In the context of technopreneurship advancement, each student activity and SMME assessment and interaction carried a strong

element of social responsibility. When making decisions about student interaction with SMMEs, academics had to consider student demographics, which were closely related to the background of the SMMEs. This connection allowed for easily identifiable market gaps and creating relevant products to fill those gaps. The connection with existing SMMEs was important in that both SMMEs and students benefitted by the experience. From an academic standpoint, it was crucial for a majority of students to comprehend and apply their soft skills and theoretical content learned in the module to real-world work settings. Teaching entrepreneurship in the curriculum offers several benefits to students: nurturing an entrepreneurial mindset, encouraging students to think creatively, take initiative, and identify opportunities for problem-solving and value creation. It fosters the development of critical skills such as decision-making, communication, leadership, and adaptability, which are valuable not only in business but also in various aspects of life. Students learn to embrace calculated risks and become more resilient in the face of challenges and failures, as entrepreneurship often involves uncertainty and setbacks. Entrepreneurship education empowers students to consider self-employment and create their own job opportunities, contributing to economic growth and job creation in the long run.

Overall, teaching entrepreneurship in the curriculum empowers students to become more proactive, innovative, and adaptable individuals, equipping them with the tools and mindset to succeed in a dynamic and ever-changing world. It can boost students' confidence in their abilities, encouraging them to believe in their potential to bring about meaningful change and make a difference in the world. The study's findings also hold promising implications for curriculum officers and developers. They can use these findings to enhance the quality of future modules by refining the curriculum design and delivery methods to offer more effective and engaging learning experiences.

## 6. Limitations and future research

The current research exhibits several strengths, but it is also subject to certain limitations that could impact the findings. Firstly, the participants were drawn from a single developing country, introducing economic and cultural bias, which may hinder the generalizability of the results. Additionally, the data source only included Diploma students and excluded postgraduate students, suggesting the need for future research to explore their perspectives and examine potential differences in outcomes.

The findings and limitations highlight the necessity for further investigation. Future studies should consider additional factors, such as the university's teaching and learning environment, the role of curriculum officers or developers within the institution, and students' interests in specific job roles or industries. A longitudinal study in the future could offer new insights into how educational institutions influence students' entrepreneurial skills over time.

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