

# TAU PROJECT REPORT

## Curriculum transformation in science: staff and post-graduate engagement with decoloniality

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### INTRODUCTION

A public university, through its academic and professional programmes, is increasingly expected to make relevant contributions for the public good (Bitzer & Costandius, 2018). Transformative methods and critical citizenship enhancement has to become an essential part of programme renewal in our South African context, but is challenging to address in a scientific context, and is thus often excluded from these programmes. Modern Western science is inextricably entangled with colonialism (Roy, 2018), and is associated with positivist paradigms which view subjective, socially constructed knowledge and feelings as irrelevant or inferior. Thus, issues of social justice are excluded from STEM curricula, which focus on technical and evidence-based content. STEM graduates could, arguably, progress through their entire undergraduate degrees without once having considered themselves in the context of broader society, or reflected on the impact and history of their chosen industry on the world.

Shields (2010) states: “Transformative leadership begins with questions of justice and democracy, critiques inequitable practices, and addresses both individual and public good.” One of the main recommendations in the report based on findings of a SU ‘Decolonisation Task Team’ carried out in 2017/18 was that the institution should provide resources and support for staff members who engage in decolonisation initiatives for teaching, learning and curriculum renewal which includes creating opportunities to bridge the gap between formal and cocurricular spaces.

In 2018, Stellenbosch University (SU) acknowledged complicity in the injustices of apartheid. The institution implemented a Transformation Plan and now has a Draft Transformation Policy which it has invited comment on from staff and students. The “Pillars” of the policy are given as place, programmes and people. It is also stated that SU is committed to delivering a transformative student experience, and ensuring staff and students are empowered with transformation competencies to address discriminatory attitudes and behaviours. The institution wishes to prioritise, expand and develop curriculum renewal and teaching to ensure transformation needs in the context of Africanisation and decolonisation. Added to this is the prioritisation of research outputs and themes that address the transformation needs of local and broader African societies and the imperatives of decolonisation. Importantly (SU Draft Transformation Policy, p7):

“9.5 The Institutional Transformation Committee shall report annually to the Rectorate on progress with the implementation of the Transformation Plan.

9.6 **Staff are responsible for** co-developing their work-plans with their line managers, and for **meeting their transformation key performance areas.**

9.7 **Students are responsible** for taking up opportunities to participate in transformation-related engagements, and for **holding the University to account for providing (or the failure to provide) a**

### **transformative student experience.”**

As transformation key performance indicators are to be added to performance evaluations for SU staff imminently, showing evidence of transformation within curricula/T&L will be necessary. Capacity building and empowering staff around these issues would form part of an inclusive and hopeful pedagogy at SU which would be transformative and enhance scholarship in a South African Higher Education context. This project links directly to SU's need to address issues of inclusivity and diversity within its programmes, and ongoing programme renewal and rearticulation objectives. The SU T&L strategy also envisions students as engaged citizens who understand that transformation of society involves transformation of the self. The curriculum must thus prepare graduates as agents of social good in an unknown future. The basis of this TAU endeavour is that, in a small and care-full way (given the researcher's own demographic), it is possible to act as a change agent at an institution and assist and inspire those wanting to implement change. In this way a network of support and ultimately a meaningful and impactful Community of Practice around decoloniality is established at SU.

### **AIMS of PROJECT**

The project sought to establish, through interviews and discussion, how current staff and students in science-based faculties view decoloniality, what is being done and where support is needed to achieve social justice outcomes and “cultural competencies” (Demosthenous, 2013) at SU.

The project also aimed to document existing good practice in social justice and decoloniality in science teaching at SU through interviews with staff. It was envisaged that discussion and conversations would have a pointed focus on social justice and decoloniality in science teaching at SU, and imagining how social justice, transformation and decoloniality could be incorporated into technical STEM subjects. The scope of the project was limited to staff in science-based faculties at SU. A longer term aim would be to provide assistance to colleagues who struggle with conceptualising T&L practices that include social justice, transformation and decoloniality in their own technical areas.

### **APPROACH /METHODS**

Institutional ethical clearance was obtained (TL-2021-23895). A meeting with colleagues from the Centre for Teaching and Learning, was carried out to plan for the institutional event. The autobiographical method *currere* as conceptualised by Pinar (1975) and used by Le Grange (2021) was taken as a starting point for an exercise in decolonising of the self by the researcher during an institutional event (An institutional “Auxin” event for T&L practitioners). Following this, staff who has put themselves forward for interview, or had previously indicated that they were interested in participating, were contacted, and interview/conversations appointment set up. Most of these took place in the online environment, but some were carried out in person. At all times, government and institutional rules around Covid19 were observed. In total 13 conversations with staff and postgraduates were recorded and transcribed. Of the 13 meetings/interviews, eight took place one on

one, and five were in group settings. Staff and postgraduate students in Science, Agriscience, Engineering, Medical and Health Sciences were interviewed. The conversations were transcribed using Otter.ai software. Access to the software was username and password protected, and transcriptions were immediately downloaded and deleted from the website. No names or identifiers could be associated with any persons in any of the conversations. Transcribed conversations were then uploaded to an AtlasTI platform on the researcher's computer. No identifiers were associated with any of the transcribed conversations in any of the uploaded documents. Following a Grounded Theory approach, transcribed content was systematically coded in three iterative rounds of comparative thematic analysis. In the first round of coding, 803 codes were identified. These were themed and reduced to 622 in the second round. Further work will attempt to theme codes around Archer's (1995) ideas on structure, culture and agency in order to try and find patterns within the codes. The researcher freely admits that she is not an Archer scholar, so this may not be successful as a strategy.

## RESULTS & DISCUSSION

### 1. Decoloniality of the Self (Curren)

Pinar's (1975, 2004) *curren* approach was used by the researcher to critically engage with her own education and attitudes. The process of following Pinar's Regressive, Progressive, Analytical and Synthetic steps uncovered some insights into the educational journey, and helped the researcher to think of ways in which these insights could be used to assist others in personalising and authenticating themselves to their students. The findings were reported back to an institutional "Auxin" (T&L) related session to facilitate initial discussions. The session online, was attended by 48 academics and support staff from across SU. Le Grange (2021) notes that decolonising is a "lifelong affair of unlearning and relearning from which no one is exempt". Feedback on the Auxin session was generally very positive with over half the attendees listing it as "indispensable". Staff were interested in a framework that enabled a journey of self-reflection, and were appreciative of the personal and authentic nature of the presentation, as well as the practical pointers.

It was also noted that the sharing of scholarly resources and modelling authentic reflection via theoretical lenses. One attendee wrote: *"... the challenge to 'be oneself' and not need to conform to the expected norms was like music to my ears, as I struggle with self-doubt because of my differences regarding education and views and personal beliefs."* It appears that even a single intervention like this is enough to encourage lecturers to take small actions to make a difference in transforming the curriculum.

### 2. Decoloniality in STEM

With STEM curricula, the perceived "loss of investment" associated with "imposing" another perspectives is a real problem for lecturers (personal communications with colleagues), and new

approaches are needed. Previous experiences with discussions on decoloniality within the a science-based Faculty at SU have shown that it is an emotive subject which elicits strong reactions: talk sessions ended up in stand-offs between staff members. Le Grange (2020) and Costandius (2018) noted a deficit mentality in reactions as well as guilt and fear of exclusion. In the researcher’s previous encounters with STEM colleagues, comments around “dumbing down” have been heard, as well as the perceived loss of investment of time and energy associated with change (Buller’s 2015 ‘Sunk Cost Fallacy’).

Curriculum renewal may be used as a convenient “decol wash”, and Le Grange (2021) argues that curriculum is the carrier of coloniality and challenges academics to self-liberate their colonised minds. Overall it was clear that STEM staff at SU are confused about decoloniality and transformation and need leadership. They have little experience in implementing around these issues, and there was a strong indication that there is very little systemic support or recognition for transformative T&L, or the incorporation of Social Justice issues in science content. In order to achieve social justice outcomes in science T&L at SU, staff need training and support in “cultural competencies” (Demosthenous, 2013). Issues associated with decoloniality in STEM centred around certain themes, as can be seen in Figure 1.

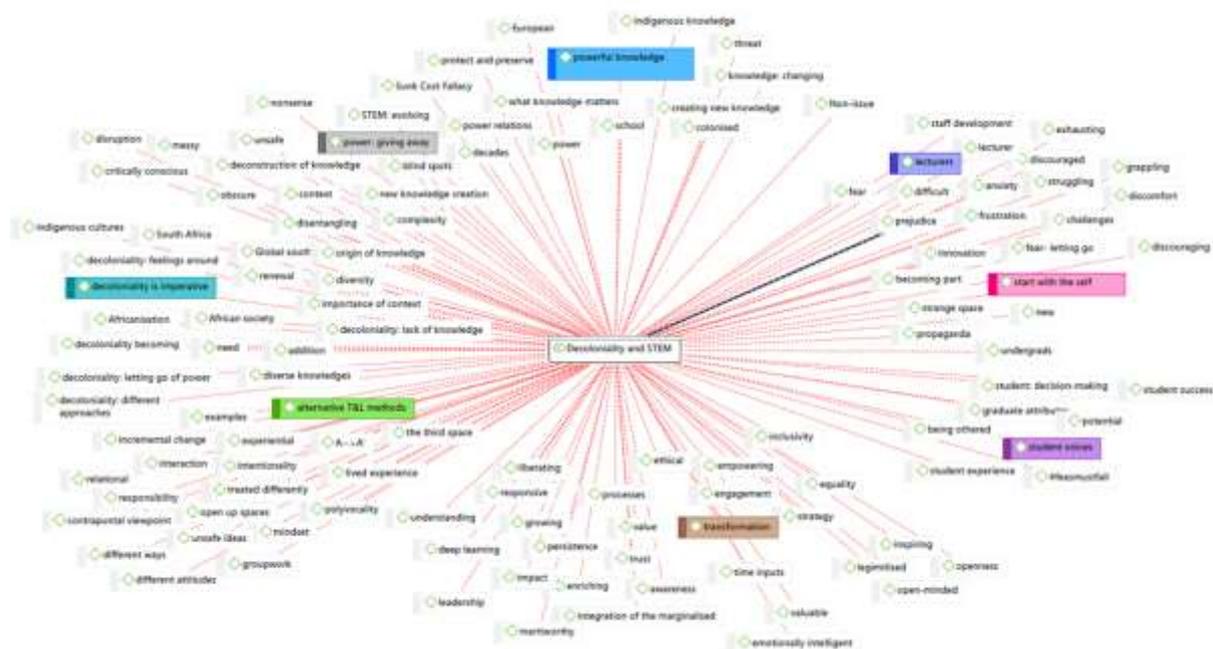


Figure 1: Network of initial codes associated with the concept of Decoloniality in STEM subject areas.

STEM content was associated with Powerful Knowledge (Young & Muller, 2013), which is sometimes viewed as irrevocable and unassailable. Interestingly, when discussions around the process of science took place, it was acknowledged that the Scientific Method, if followed absolutely, will exclude no voice, no matter how small or seemingly insignificant, but that Modern Western Science has lost this ability, and follows the money and the funding, which entrenches the Powerful Knowledge status quo. It is therefore up to lecturers and academics, who have agency within their own courses to start with the self, personalise, be authentic, and bring the students’ own experiences into the lecture hall. This is obviously easier with small groups, but it was acknowledged that there are ways to do this, even with

larger classes. This does involve that lecturers may need to give away power and control, which is not always easy, but that the need to decolonise is imperative if SU is to be seen as a truly transformed institution. Thus, the discomfort must be borne, and small, incremental efforts should be attempted. Certain lecturers and academics had already started this process, and others were trying to find ways to do it. Curriculum renewal was cited as a way to encourage change, but care must be taken that it is not used to pay lip-service to transformation when in reality, little is being done to incorporate decolonial ideas or methodologies.

### 3. Decoloniality (support and barriers) at SU

Generally from conversations with colleagues, it appears that the keys to decoloniality of curriculum (or lack thereof) at Stellenbosch University include the following factors:

- **Subject/ area context:** decoloniality may already be embedded in certain content, but this is unusual in STEM. Academics viewed decoloniality as a process of becoming and evolving. This continuum stretched from "not on the radar at all" to "a natural component of our programme"(mostly in FMHS).
- **Personal background:** lecturers' own experiences and personal positioning encourage them to bring students' lived experiences. The person determines what happens. Personalisation and authentic teaching and learning is key.
- **Relational nature of T&L:** Teaching and learning are relational, and even science is relational.
- **Institutional support:** visibility, recognition and reward for initiatives that take decoloniality forward in learning spaces.
- **Messiness and complexity** are to be expected and even encouraged. Emotional responses are to be expected as academics grapple with new ideas and confronting their own value systems. Providing brave spaces, and the freedom to be authentic and not conform to institutional norms is essential. Communities of Practice around decoloniality, particularly in STEM Faculties should be encouraged, and time set aside for these discussions.
- **Constraints/ challenges:** time, lack of confidence, lack of energy, dual roles of caring for students and T&L, while trying to be a researcher, a lack of institutional recognition and support, and a lack of knowledge around what "transformation" and "decoloniality look like in specific contexts. These are just some of the barriers identified by staff grappling with transformation within their curricula, and trying to incorporate decoloniality and social justice into their programmes.
- **Knowledge-as-power /empowering:** It is the duty of the institution to expose students to diverse and transformative experiences, so that they are prepared. The incorporation of student experience, indigenous knowledge, alternative and possibly controversial viewpoints is highly encouraged in order to enhance critical thinking and the ability to evaluate knowledge.

- **Decoloniality** is as **diverse** as humanity: There are so many different ways and means to do it. Recognition, hearing, seeing, being aware of ourselves and everything around us. Respect and dignity for ourselves and everyone else.

Research findings and recommendations underline that it is imperative that SU “commit to the commitment” around decoloniality and transformation as outlined in the Draft Transformation Policy, and do not just pay lip service. In the event that the ideals, responsibilities and actions that are named in the Draft Policy are implemented, it will provide very fertile ground for transformation within the institution. Change agents and creative thinkers should be encouraged and recognised for attempts to lead the charge to transformed curricula and student experiences, and barriers to this progress should be removed.

Further work in this project:

- To establish where support is needed to achieve social justice outcomes and “cultural competencies” for STEM staff at SU
- To document challenges and reasons for resistance to change
- To identify staff support needs, capacity building on identified gaps and document and reward best practice
- To celebrate T&L activities that have proven social justice and transformative learning outcomes ‘put Africa at the centre’ of our science-based programmes using T&L innovations that enhance social justice using examples from non-science programmes
- To adapt curricula the changing nature of the student body, bringing in students experiences and prior learning wherever possible
- To include academic content, programme level outcomes and graduate attributes that assist students with transitioning to a diverse and challenging society.

## CONCLUSIONS

The original aim of the project was to establish how staff in science-based faculties at Stellenbosch University view decoloniality, and document T&L initiatives that incorporate issues of Social Justice and decoloniality. Work is ongoing. Initial results indicate the importance of context, and supportive Communities of Practice in order to create brave spaces for reflections and conversations.

Challenges in this work have included a lack of time for interaction, both on the part of the researcher, and on the part of the participants. The evaluation of the effectiveness of these outcomes is challenging, but initial interaction seem to have had positive effects, even if they are very small. Hopefully at the very least the project has raised awareness and understanding of terminology around decoloniality, and possibilities of a “contrapuntal” viewpoint in STEM. It is hoped that conversations around decolonisation across STEM Faculties at SU will continue and indeed, gain momentum as the Transformation Policy moves from Draft to a fully recognised Policy.

Outputs as at 18 July 2022:

Ntwasa, S; Blackie, M; Dullaart, G; Farmer, J; Feldman, J; Joorst, J; Lesch, F; Mckay, M; Mlitwa, A; Ohajunwa, (2021) Transforming the curriculum using the concept of powerful knowledge towards a Socially Just discourse. Scholarship of Teaching and Learning, Online Conference, 09 November 2021

Mckay, M (2021) Being the change: Attempting to decolonise myself using Pinar's cycles of currere. Scholarship of Teaching and Learning, Online Conference, 09 November 2021

Mckay, M. (2021) HELTASA Wilmot, L., Chinnian, K. Muhuro,P. and Nsibande, R. The Baobab as metaphor for Communities of Practice in T&L. (UN) Conference Sivela phi? Sipi? Siya phi? – Being resilient, responsive and relevant in a shifting Higher Education context. 06 December online.

Presentation to the EMS Faculty (Accounting Department) on decoloniality Apr 2022

Digital artefact with Enquiry Group 9

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Stellenbosch University Strategic Framework:

[https://www.sun.ac.za/english/Documents/Strategic\\_docs/2018/Vision-2040-Strategic-Framework-2019-2024.pdf](https://www.sun.ac.za/english/Documents/Strategic_docs/2018/Vision-2040-Strategic-Framework-2019-2024.pdf)

Stellenbosch University Teaching and Learning Policy: <https://www.sun.ac.za/english/learning-teaching/ctl/Documents/SU%20TL%20Strategy.pdf>

Stellenbosch University Transformation Plan: <https://www.sun.ac.za/english/learning-teaching/student-affairs/cscd/Documents/Career%20Services/Transformation%20Plan.pdf>

Stellenbosch University Draft Transformation Policy:

<http://www.sun.ac.za/english/transformation/Documents/Transformation%20Policy%20First%20Draft.pdf>

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