# Decolonizing and Africanising the Curriculum: The How's Through Reflexivity at a Rural South African University

Tholani Tshuma✉

Walter Sisulu University, South Africa

| Article Info | Abstract |
|---|---|
| | This research sought to examine the academic perceptions and practices that could enhance the decolonisation and Africanisation of the curriculum at a rural South African university. The reflective object inquiry which involved the researcher and seven other academics from different disciplines was followed in a bid to answer one main research question: How could one decolonize and Africanise the curriculum at a rural institution of higher learning? The researcher engaged in reflexivity with the aid of an artefact for photo-elicitation on the idea/concept of decolonisation and Africanisation of the curriculum in higher education. The reflective object inquiry process involved the researcher and seven multidisciplinary academics. The visual aspect of the selected objects triggered reflexivity through the photo-elicitation of rooted views and perspective about decolonization and Africanisation of the content for teaching. The critical feedback from the seven other academics on the held ideas informed the planning and teaching in ways that attempted to decolonise and Africanise the curriculum when teaching the topic of biological fermentation. The seven academics, in their validation role through continuous feedback, observed how the researcher enacted the decolonisation and Africanisation of the curriculum during lecturing. The collected data included the discussion scripts with the academics, lecture observation reports, and journal entries by the researcher. Data was analysed thematically through the process of coding from a deductive to an inductive approach. It emerged that contextualising the content for teaching through integrating it with the students' everyday lives, IKS and indigenous games is synonymous with simplification of the content for teaching, using humanising pedagogies and decolonising and Africanising the curriculum. These pedagogical practices which involve thinking out the box, beyond the textbooks and educators getting out of their comfort zones in terms of their content preparation, representation and presentation is one way of taking off the burden to explain abstract concepts and potentially maximise student learning. |

✉ correspondence:
G Nelson Mandela Dr, Umtata Part 1, Mthatha, 5099, South Africa
E-mail: ttshuma@wsu.ac.za

## INTRODUCTION

The world over, there is a documentation in the literature on pertinent issues about decolonisation and Africanisation of the curriculum. The point that these are highly contentious concepts (le Grange, 2018; Laakso & Hallberg, 2024), probably explains why there is no single definition of what these are or not all about. However, one cannot deny the abundance of literature on issues associated with decolonisation and Africanisation of the curriculum. In terms of operationalising these concepts in a real classroom context, there is scarcity of research on how a teacher could enact that in real context.

Whist the concept of decolonization is generally viewed in relation to educational practices and efforts that stand out against Eurocentric and post-colonial educational orientations from previous colonial masters (e.g. Arday, Zoe, & Thomas, 2021; Pitcher & Jones, 2018; Begum & Saini, 2019), in this inquiry, decolonization was viewed based on the basic premise that content for teaching ought to be aligned with the students' indigenous knowledge systems, cultural artifacts and every life knowledge (Le Grange, 2018; Wilson, Broughan & Daly, 2022). Furthermore, and also as viewed in this inquiry, the issue of Africanising the curriculum, is not about the continent of Africa in the sense of the word, but is more on ways of knowing in relation to continental contexts, e.g. Asia, America, India, Europe, Africa (Etieyibo, 2019). Thus, curriculum content ought to be grounded in the context of the big picture of the continental spaces where it is delivered. For instance, in terms of examples given in the textbooks used by students, if they are rooted in the continental realities which the students leave in, then the students can easily identify with that type of textbooks/curriculum content for their enhanced comprehension as unveiled by scholars such as Makaye (2023); Wilson, Broughan and Daly (2022).

Furthermore, as a teacher educator who teaches BED and PGCE students at a South African institution in a rural setup, I have always wondered how I could decolonize and Africanis the curriculum I teach during my own teaching. This is because all the conferences and seminars I have been attending only share details of what these terms entail but not much detail on how to operationalise these concepts during teaching and student learning. Ideas in the research literature also do not provide details on how a classroom practitioner can decolonize and Africanise the curriculum during teaching and learning. Thus, the scarcity of research on practical strategies for enacting decolonisation and Africanisation in real classroom settings has created a research gap which this study will contribute towards filling in the context of the research question that guided this study: How could one decolonize and Africanise the curriculum at a rural institution of higher learning?

In my quest to come up with practical ways of enacting/operationalizing the concepts of decolonization and Africanising the content for teaching, I engaged in self-study. The purpose of this practical inquiry research venture was to answer the research question above. This is rooted on the background of the ideas in the literature on self-study, critical friends, decolonisation, colonisation, and indigenous knowledge systems (IKS), and how these intersect with this self-study's focus on Africanisation as discussed next and further elaborated in the subsequent sections.

In summary, a self-study, as embodied in this inquiry, was rooted on dilemmas one faces in one's practice (Tshuma, 2023), and thus engaging in a practical inquiry entailing the informed others/critical friends (Petroelje, Frambaugh-Kritzer, Freese, & Persson,2019) which had a crucial role in validating the data collection and analysis (Elizabeth Petroelje, & Frambaugh-Kritzer, 2025). The ideas of Africanisation, decolonization and colonization (Ajani, 2019) are not referred to in the context of everyday context of being in Africa, and having one nation occupying the geographical boundaries of another nation respectively, and these are the key constructs under focus in relation to how they apply in the context of the curriculum in education settings (Du Plessis, 2021). These three constructs and the issue of indigenous knowledge systems [IKS] (Abah, Mashebe, & Denuga, 2015)

in the context of a self-study, are the key issues which are inter-twined and makes the backbone of this inquiry. These constructs are further elaborated in the subsequent sections.

In a bid to understand the above-mentioned pertinent ideas about this research, further relevant literature was reviewed. This is discussed next.

**Reviewed Bodies of Literature and The Theoretical Framework**

**Theoretical framework**

The theoretical framework for this study is based on the notion of the zone of proximal teacher development (ZPTD) as propounded by Warford (2011). This theoretical lens is based on the original social constructivism of knowledge put forth by Vygotsky (1978). The ZPTD framework turned out to be particularly relevant for this self-study. This is because the thrust of this inquiry was for the researcher to come up with an understanding of how to or learn how to teach in ways that decolonise and Africanise the content for teaching in the company of critical friends. As put forth by Vygotsky (1978) and Berry, Loughran, and van Driel (2008), we tend to construct our understanding of the phenomenon around us in the company of and through interacting with the more informed others.

**Socio-cultural theory**

The basic premise of this theory is that humans learn when interacting with the more informed others. Thus, in accordance with this theory, our *"… cultural development appears twice: first, on the social level, and later, on the individual level; that is first, between people (inter-psychological) and then inside … (intra-psychological)"* (Vygotsky,

1978). In this inquiry the probing and critical feedback I received from the other academics played a crucial validation role in the findings that emerged from this study.

**ZPTD**

The notion of mediated conceptualisation of knowledge comprises the thrust of Vygotsky's views about cognitive development or learning processes. This is because, according to this idea, facts are not simply transferred from the more informed to the less informed, but the less informed ought to engage mentally with the learning content at stake to come up with their own understanding of what is being taught through the use of cultural tools (Golombek & Johnson, 2004). This process evolves systematically and in complexity as the learning educator or self-study scholar re-thinks and re-shapes new dynamic pedagogical practices to accommodate the critical probing from critical friends (Attard, 2017; Gheith & Aljaberi, 2018; Pithouse-Morgan, 2022). This Vygotskyan approach to teacher learning aligns with the notion of situated cognition as the re-thing and reshaping of how to teach by teachers occurs in real classroom contexts in the company of others (Lempert-Shepell, 1995). The others assist learning educators to conceptualise ideas about teaching beyond what they could on their own (Pedrosa-de-Jesus, Guerra, & Watts, 2017; Szűcs, 2018), or in Vygotskian language, beyond their ZPD. In the context of ZPTD, this is about the "… *distance between what teaching candidates can do on their own without assistance and a proximal level they might attain through strategically mediated assistance from more capable others (i.e. methods instructor or supervisor)*" (Warford, 2011). This notion is depicted in Figure 1 below and has four stages.
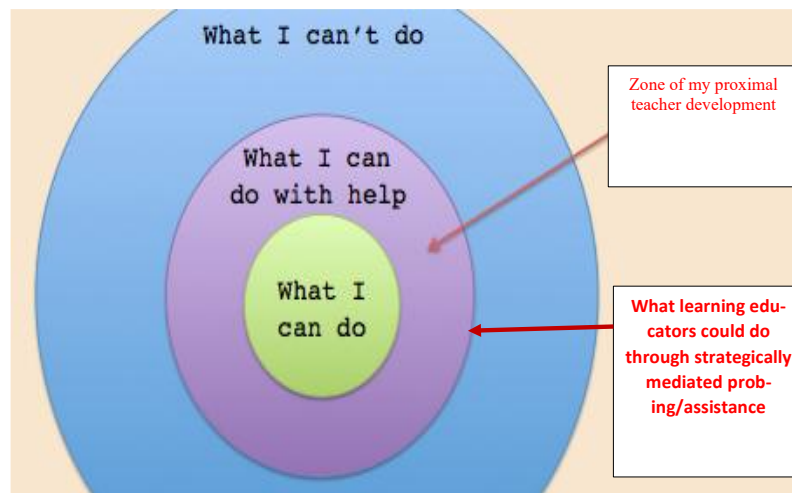
**Figure 1.** The notion of ZPTD as used in this study (Based on the ideas by Warford, 2011 and Vygotsky, 1978).

**Four stages of the ZPTD**

***Stages 1 and 11***: The zone of proximal teacher development (ZPTD) as viewed in this inquiry, starts with self-assistance, i.e. Stage 1, (Warford, 2011). This involves the leaner teacher undergoing self-reflections about, for instance, one's prior teaching and student learning experience, beliefs, and conceptions about teaching and dilemmatic or problematic instances that needs solutions about teaching and student learning. As depicted in Figure 2 below, this stage is then followed by assistance from the more informed others (Stage 11). This is the opposite of what takes place under Vygotsky's ZPD, where development start at social level, and then later, at individual level, or from inter-psychological to intra-psychological level (Vygotsky, 1978). Thus, as stipulated by the ZPTD framework and as was applied in this inquiry, the teacher was the starting point for the professional development through self-reflections on the teaching of a topic that had been problematic over the years, biological fermentation. Teacher assistance came in when I got assistance or scaffolding from others in terms of paving new pedagogical knowledge on this topic (see this depiction in Figure 2 below).
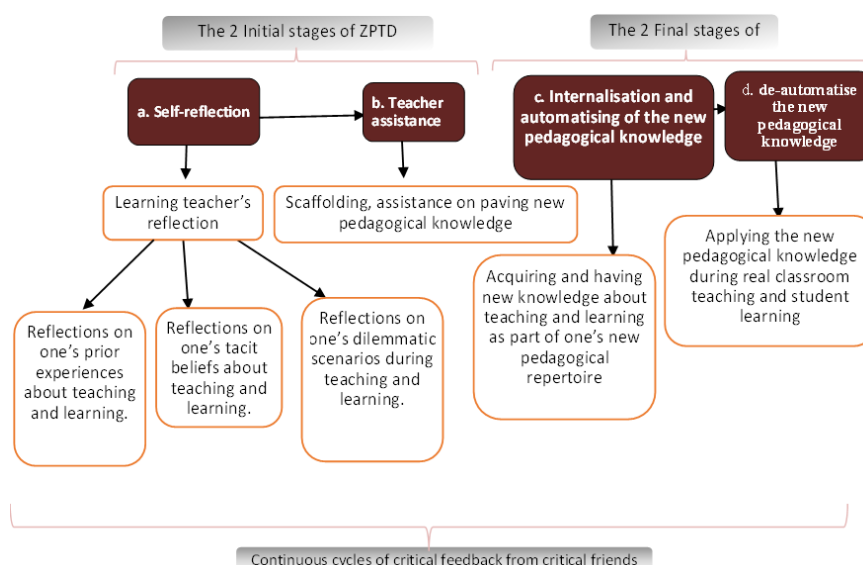


**Figure 2.** The stages of ZPTD as used in this inquiry (Based on the ideas by Warford, 2011 and Vygotsky, 1978).

*Stages 111 and 1V:* As depicted and taken in this study (see Figure 2 above), the third ZPTD stage entails the issue of internalization and automatising of newly acquired pedagogical insights so that become part of the new pedagogical knowledge of the teacher (Warford, 2011). However, having those pedagogical insights or knowledge is not sufficient as there is still a need to prove the prowess to apply that knowledge or de-automatise (Warford, 2011) what was learnt about teaching and learning in a classroom situation (Gallimore & Tharp, 1990), (Stage 1V as depicted in Figure 2 above). Notably, and as also depicted in Figure 2 above, all the stages undertaken in this study were prone to probing and critical feedback from critical friends. This was useful for validation of the findings from this inquiry as put forth by scholars such as Dennis (2018); and Butler and Branyo (2020).

**Reviewed bodies of literature**
*The notion of a self-study and how it is conducted*
The idea of a self-study is a relatively new research field or type of research that has gained momentum over the years. As is evident in the literature, self-study scholars do not see eye to eye on what constitutes a self-study, e.g. '... *as a community of self-study scholars have struggled to capture a definition of self-study although there has been more agreement about why self-study is important and what it entails (i.e. its characteristics and methodological components) '* (Samaras, 2011, p. 9). However, common issues appear across different conceptions of what self-studies are all about, e.g. the idea that self-studies: a) are a personal initiated inquiry arising from dissatisfaction or dilemmatic pedagogical issues arising from one's daily practice (Samaras, 2011), and b) self-study scholars collaborating with their critical friends to produce professional pedagogical knowledge (Comber, 2013).

In the context of this complexity brought by lack of a clear definition of what a self-study is all about, it is imperative that I try to prove an overview on this issue as provided by research literature.

Self-study research is not about the self and for the self only but goes beyond that as it leads to generation of new knowledge about pedagogical practices that shapes and inform practice and decisions on policy making across different fora. In addition to this, a self-study, as the word 'self' portrays and as also often misconstrued, this is not an individual self-proclaimed sole individual venture (Samaras, 2011; Shuck & Russell, 2006). Self-studies involves what are termed, in this type of research 'Critical friends' (Samaras, 2011).

**Critical friends**
A self-study is not done by the self-study researcher alone but is done in the company of critical friend (Shuck & Russell, 2006). Critical friends play a crucial validating role through their continuous probing of self-study scholars to view research issues beyond their personal biases and academic scope limitations (Samaras. 2011; Richards & Ressler 2016). In this study the critical friends were seven fellow researchers. These multi-disciplinary academics helped validate the results in this inquiry as they probed my pedagogical action and reason through posing questions that provide a platform for me to view issues from not only my personal perspective, but the 9 diverse perspectives.

**Decolonisation**
In the wake of the 2015 and 2016 South African student protests, involving fees must fall and Rhodes must fall, the notion of decolonisation has become a topic for conversations in the higher education research landscape. The idea of decolonisation is a highly contentious terms which raises other complex issues if critically viewed. For instance, whilst some scholars (e.g. le Grange, 2018, p.7), define decolonisation as the, '.... undoing of colonisation,' a host of other questions arises from such a perspective. For example, if there is a coloniser, there should also be the colonised, then who/what is the coloniser and colonised? Is colonisation limited to geographical occupation of the coloniser's space, or is about the colonised mind set? Is colonisation limited to Africa or its global phenomenon? During the purported decolonisation, is it not another diplomatic way to enhance another form of colonisation, because who decides and using which framework, is the paramount question? Whilst the thrust of this

work was not to answer these philosophical questions, they are raised here so that the reader could understand the scope and context such a term was used in this inquiry because decolonisation is arguably a highly contested concept (le Grange, 2018). To shed insights on the term decolonisation, the notion of colonisation will be discussed first.

## The notion of colonisation

In research spheres, the idea of colonisation could be viewed as taking place in two phases: first generation and second-generation colonialism (le Grange, 2018). During the first phase, the coloniser conquers the bodies and physical spaces of the colonised victims. In the second-generation colonisation, the colonisation of the colonised peoples' mind-sets through disciplines like religion, education, and even culture that entails the coloniser's way of life imposed on the colonised occurs (Chilisa, 2012).

## Decolonisation in the context of colonisation

The process of decolonisation after the colonisation phases discussed above is not an event but a process that cannot be realised overnight. Some scholars, (e.g. Chilisa, 2012) advocates that decolonisation occurs in five phases: recovery and rediscovery; mourning, which is followed by dreaming; commitment and then lastly action. Recovery and rediscovery occur when the colonised have made efforts for freedom from colonisation, such that they rediscover and recover their own identity, language, culture, and history as a people. Mourning is about the colonised and the world lamenting on the state of issues of the oppressed people in line with their stolen social identities and culture. Mourning is a crucial part of healing which leads to the dreaming phase. During the dreaming phase, the colonised peoples re-identify themselves as a people in the context of their indigenous knowledge systems, worldviews, histories, and theorise (Chilisa, 2012). In terms of action and commitment phases, in this inquiry, this was the re-imagination of the higher education academic field in a quest to decolonise the curriculum as further discussed in the following sections. The decolonisation was not

only viewed as a way of placing aside colonialism in terms of the colonised physical spaces dominated by colonialism, but in terms of how education could be transformed in terms of the indigenous knowledge of the target group, in any part of the world.

## Indigenous knowledge systems (IKS)

Multiple definitions are available in the literature on what exactly constitutes a given people' indigenous knowledge systems (IKS). One aspect that appears common across most definitions is that IKS is not a universal type of knowledge which is known and applicable across different socio-cultural groups across the world, but it is a unique, local way of knowing only usable by a particular group of people in their unique geographical context (Sillitoe, Dixon, & Barr, 2005). In addition to this, IKS is also knowledge that has been tried and evaluated based on lived experiences of a particular people over centuries (Sillitoe at el, 2005). In this inquiry, the IKS under the spotlight was that of the Zulu and Xhosa people in the South African context.

## The notion of Africanisation

The issue that Africanisation is an elusive idea is evident in the literature. For other scholars, (e.g. Etieyibo, 2019) Africanisation is about the deliberate and systematic deployment of Africans cadres in influential social positions so that societal control is in the hands of Africans. This is because, according to this view, African majorities will be represented demographically in all important social life spaces. In a quest to broaden this kind of probably rather limited view, the issue of Africanism, which looks at issues beyond more than just simple demographic representation has been brought in the limelight. Africanism is about upholding African culture and knowledge systems as the centre stage in all spheres of significance (le Grange, 2019).

However, to think that Africanising is synonymous with decolonising could be a narrow view of the big picture, because colonisation is not an African phenomenon only as there are also other European countries that have, and some are also still in the process of colonising other countries. Similarly, the perception that gaining

of independence is the Africanisation of colonialism (e.g. Pinar, 2011; Sekyi-Otu, 1996), is a blatant refusal to acknowledge that it is not only African countries that gained independence from their colonial masters. In this inquiry, the issue of Africanisation is viewed in the context of contextualising the content for teaching in the context of typical African ways of knowing and of course taking due conscience of the part of African being considered at that point in time.

Based on the discussions above, it is evident that indigenisation of knowledge intersects with the notion of Africanisation basing on the premise that Africanising should and could encompass the inclusion of African IKS in educational and social settings. But, notably, to view indigenous knowledge as an African phenomenon only is a limited an unfortunate perspective, that is in denial that any group of given people have their own IKS which common knowledge they use to make sense of their local environment.

## METHODS

This self-study was a dilemma-driven inquiry. The self-study methodology was used to unveil possible pedagogical practices that one could use to teach in ways that decolonize and Africanize the curriculum at an institution of higher learning. Over the years, I have been dissatisfied with the way I teach, because whilst I had some theoretical ideas from the literature and conference presentations about the notion of 'decolonisation and Africanising of the curriculum', I was concerned that I had pedagogical deficits as I did not have an idea on how to operationalize and enact these two ideas in my real context teaching. As this was self-study, I was the focus of this inquiry. In addition to this, because self-study is not a sole venture which is done alone, my seven critical friends helped validate all my research steps through posing probing questions that assisted me to see pedagogical issues beyond my personal capabilities and biases. Data sources in this inquiry included journal entries on my thoughts, concerns, worries and reflections; and discussion feedback sessions notes from critical friends. The collected data was analysed thematically form a deductive to inductive approach. The self-study methodological steps that were followed in this inquiry are outlined below.

## Use of visual methodologies

Visual methodologies or object inquiry entails the use of images such as photography, sculpture, collage, film, drawing, video, artwork, painting, advertising, graffiti, and cartoon to invoke deep seated ideas through reflections on a given topic of phenomenon. Based on the notion that a visual object is crucial for triggering reflections, this process of initiation reflections, termed photo-elicitation (Glaw *et al.*, 2017), was used in this inquiry.

In this investigation, traditional African (clay pot and grain grinding stone as shown in Figure 4 below were used to trigger reflections through photo-elicitation. My critical friends probed me in terms of why I selected these artifacts. I provided the rationale for selecting these images as that they are commonly used by the indigenous people of most parts of Southern African countries where I grew up, work and also stay, and were also particularly linked to the content knowledge being taught. Therefore, I envisaged that using these objects (see Figure 3 and Figure 4 below) as a beacon to kick-starting my reflections would elicit deep seated perceptions on the phenomenon under focus. The reflections were recorded as journal entries.

**Figure 3.** Clay pot          **Figure 4.** Grain grinding stone. Source: Field data images

**How rigor was addressed in this study**

In a self-study context, rigor is about '… *a validation process based on trustworthiness'* (LaBoskey & Russel, 2004). In this self-study inquiry, rigor was addressed in seven diverse ways. These included triangulations of data collection approaches, face validation of the coding system, piloting of the coding system, intercoder reliability checks, and making all research proceedings, my pedagogical reasoning and action, my reflections, and thoughts public for public critique and scrutiny all the time by critical friends and colleagues. Theory triangulation, which involved the use of different viewpoints to interpret a single data set (Stake, 2010) was also used when critical friends had opportunities to use their different theoretical research understanding to shape the steps in this inquiry through their constant probing for me to think and rethink the research procedures I was following.

**Data collection and analysis**

In typical self-study, the research steps are not linear but happen in a back-and-forth hematic fashion (Samaras, 2011). This explains why data is analysed as it is being collected as evident in the section below.

**Journal entries**

Journal entries entailed the systematic capturing of all my daily reflections, experiences, thoughts observations, and pedagogical reasoning before, during and after my teaching. The rationale for using journaling is that it assisted me create and keep a permanent '*audit trail*' (Samaras, 2011, p. 164) which I could share with my critical friends to critique in advance at their free times for my comprehensive feedback from then during our group meetings.

For instance, below is an example of journal entry I made due to my dissatisfaction with my teaching after attending a conference highlighting the issues of decolonising and Africanisation of the curriculum.

**Journal entry: 18 October 2023:** *My attendance of today's conference session was an eye opener on crucial issues such as Africanisation and decolonisation of the curriculum. However, I wonder how I could effectively do that in my lectures to see how it changes my lecture sessions.*

**Critique (Jack, not real name):** *What do you mean by eye-opener? What is it that you wish to do that you do not do well during your teaching? What do you think you ought to do to change the situation as an academic?*

**My response:** *By attending the conference, I got to rethink and consider the issues of Africanisation and decolonisation of the curriculum in terms of what they mean, and how I could adopt them during my teaching. I wish to try out these, but I have no idea as to how I could do that because my review of literature just provides descriptions of these but am still to come across practical tips on how I could transform my teaching in that direction.* **[readiness to try out new things]**

It is from, for instance the above critical feedback that the idea of engaging in this inquiry also arose.

**Engagement in reflexivity**

The reflexivity engaged in this inquiry entailed three phases: before teaching, during and after teaching. The reflectivity cycles involved 11 steps (see Figure 5 below for this depiction).

**Reflections before teaching**

During the first phase, two steps were carried out: a) journal entries involving my continued everyday practice, e.g. the example given for the 18th of October, 2023 above, and b) my undertaking a 'self-talk' in episodes of timed reflections which involved free flowing audio recording of reflections where I spelt out anything that came into my mind in terms of Africanisation and decolonising the curriculum (see Figure 5 below). The reflection transcripts and journal entries were then shared with the critical friends to go through before our group meeting to give them enough time to browse through the transcripts and add comments at their convenient time before we meet as a group.

The critical feedback sessions involved critical friends critiquing my reflections through posing critical comments for me to rethink issues and deepen mu understanding. The critical comments were captured for later use during re-engagement a second round of reflections under the phase of 'probed reflections' as shown in Figure 5.

During the second phase of reflections, I shared all my responses to the critical probing questions raised in the earlier session to get further probing questions. These steps and phases were repeated, for the three reflexivity phases: Before, during and after teaching as depicted in Figure 5. After all the reflexivity and feedback sessions, I then ended up by engaging in the final session of reflection where a narrative text for coding was eventually generated for the three phases, before, during and after teaching as depicted in Figure 4.
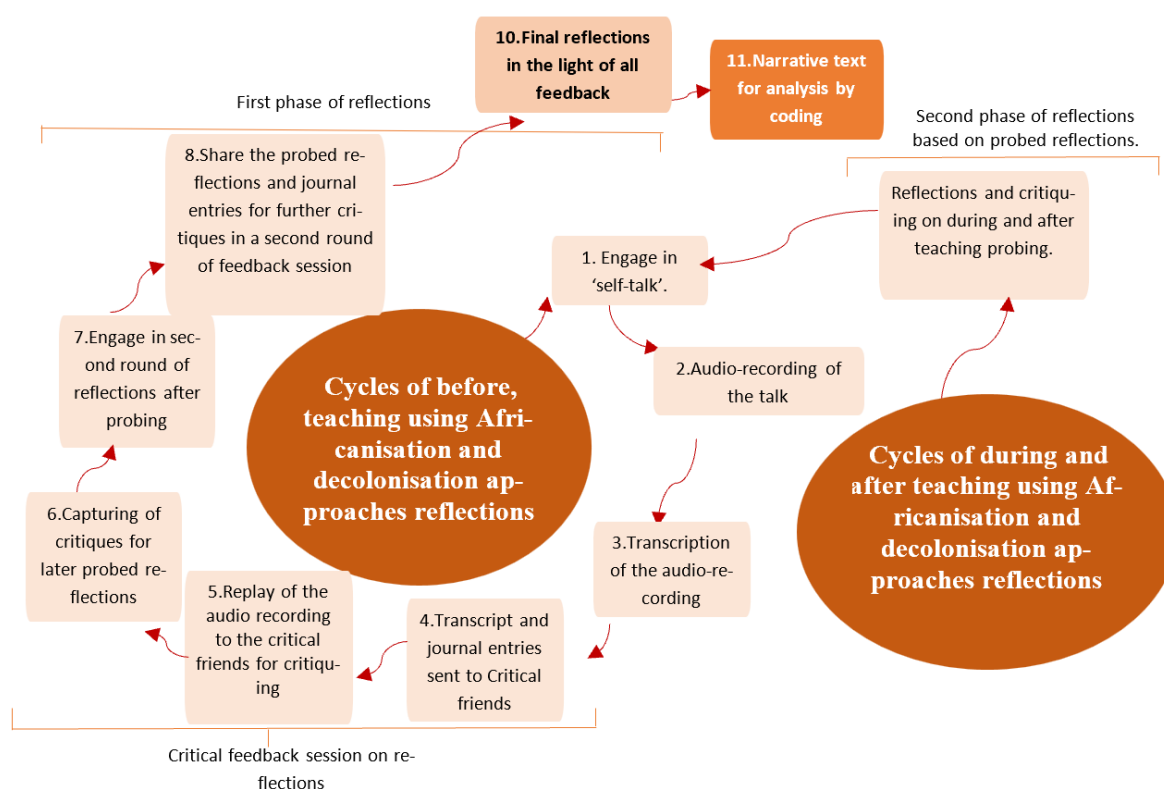


**Figure 5.** Reflexivity phases engaged in in this investigation (Based on self-study reflexivity cycles by Tshuma, 2023). These resulted in the generation of narratives.

**The coding system used in this study**

The coding system used in this inquiry was derived from a deductive to an inductive approach. The basic ideas in the relevant research literature to this study were used to formulate the possible units of meaning which constituted the initial coding system [a deductive approach] (Parameswaran et al., 2020). As the coding of the researcher's narrative transcripts continued, new codes, that were not there in the initial coding system emerged [inductive approach] (Santos et al. (2022), and these became the final coding

system. The codes were given the symbol of characters such as @, #, and $. As the data analysis continued, the codes were clustered under main themes that emerged inductively. A combination of characters was used to represent the different codes that constituted that main theme using a combination of characters, e.g. @#$. Table 1 below shows examples of the codes in the initial and final coding system.

**Table 1.** Sample of codes in the initial and final coding system used in this study

| Sample of codes in the initial coding system | Sample of codes in the final coding system that emerged |
|---|---|
| Teaching | Pedagogical deficits*& |
| Learning | deficits in the teacher education system$*& |
| Difficulties in teaching | professional frustrations &* |
| Lack of suitable teaching resources | room for professional growth #@1*& |
| Teacher loss of hope | research gap in practice @2 |
| Teacher confusion | the power of collaboration @3 |

As the codes were being grouped into sub-themes and themes, main themes eventually emerged as depicted in Figure 16 below.

**Narratives**

Below is a final narrative text generated after engaging in all the reflexivity cycles involving the before teaching phase. The narrative text is coded and shows themes that emerged. These themes were later used to inform the designing of the pedagogical practices that were used during teaching in ways that cater for the incorporation of decolonisation of the curriculum ideas in this inquiry.

**Before teaching:** My teacher training did not specifically refer to crucial notion of Africanisation and decolonisation of the curriculum **[deficits in the teacher education system$*&]**. My teacher training emphasised issues such as lesson planning, scheming, and use of theories of teaching and learning during classroom practice **[deficits in the teacher education system$]**. How I wish it was part of my

teacher training **[professional frustrations&*]**, then I would just try it as trained in the past **[professional knowledge gaps*&]**. This is because, I wonder how I could effectively adopt the notion of Africanisation and decolonisation of the curriculum I deliver to my students **[room for professional growth@1]**. My concern and dilemmatic classroom issue **[deficits in the teacher education system$*&]**. comes from the fact that I wish to transform **[readiness for life-long learning@1*&]** how I teach so that if possible that I see how it changes my lecture sessions **[room for professional growth@1]**. During my review of research literature, and attendance of research conferences and seminars, I get explanation on how this is crucial, but I am yet to get specific details on how to do that during practice **[research gap in practice@2]**. This lack of clear articulation has created discomfort in my practice **[dilemma of practice*&]** as am trying hard on how to revolve that personal 'turmoil' in the wake of becoming a better academic **[readiness for life-long learning@1]**. I have shared my thoughts with my critical friends and the main theme emerging is that I could try researching on my teaching **[room for professional growth@1]**. From that research, it emerged that the whole idea is that I could provide a framework for other scholars and me to use when transforming content for teaching so that it entails the Africanisation and decolonisation of the curriculum **[room for professional knowledge generation@1].** However, when I started sharing my reflections with critical friends, I had no idea of which research and how to conceptualise it. After cycles of probing, with questions such as the one from **Jack,** which lingered at the back of my mind for a long time: What do you think you ought to do to change the situation as an academic? **[the power of collaboration@3].** I realised that things should start with me **[readiness for life-long learning#]** and shared with others because **[generation of knowledge that informs practice@1]**, as the conventional wisdom says: it is only the pot that knows how hot the fire is. It is from this that the idea of partaking in a self-study inquiry was born **[readiness to engage in scholarship of teaching and learning#]**.

*During planning for and teaching:*

**Issues (themes) that emerged from the before teaching reflections and their implications.**

As evident in the above before teaching narrative, **6** themes were teased out after opening up on my thoughts for probing and critiquing by critical friends. These themes, as coded above, are clustered into main common themes by using characters such as [@1 *&]

Before teaching, emerging main themes:

- Pedagogical deficits[*&]
- deficits in the teacher education system[$*&]

- professional frustrations [&*]
- room for professional growth [#@1*&]
- research gap in practice [@2] ;
- the power of collaboration [@3]

I then further interrogated these six themes that emerged for even subthemes within those 6 main themes through the use of the characters that appeared across various themes, e.g. [&] which appears in four of the six main themes. Three main themes further emerged from this analysis (see Figure 6).
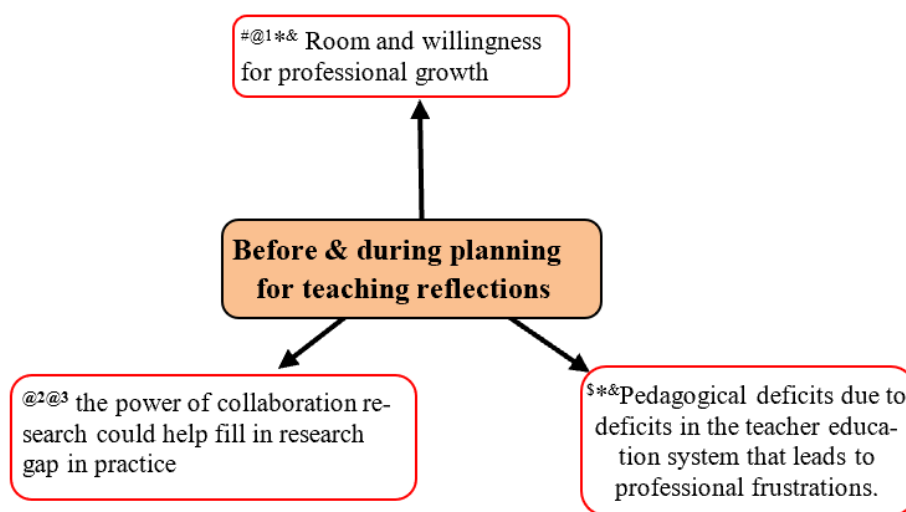


**Figure 6.** Themes that emerged from my reflections before my teaching

The three main themes that emerged before my teaching, as depicted in Figure 6 above, highlight three main issues. Firstly, the issue of conventional wisdom that says, where there a will, there is a way. This is evidenced by the main theme 'Room and willingness for professional growth.' Secondly, the point that most teachers like me experience pedagogical deficits, due to gaps in the way we were trained; Thirdly, the idea that despite teacher training teachers pass through, training gaps will always be there. Thus, practitioners can always engage in life-long learning through for instance collaboration with the diversely informed others. This is because in this study, I was able to identify pedagogical issues I had through the collaboration with others, and thus paving way for research that has the potential to generate knowledge for the self, and for informing practice at large.

After these insights had emerged before my teaching, my quest was to generate insights on how to teach as informed by the insight that emerged from my probed reflections before my teaching. I then engaged in another round of cycles of reflections that followed the same part as those already outlined above. The narrative below started when I considered the critiqued from one of my critical friends in the context of the photo-elicitation objects in Figure 4 above:

**Dave** (pseudonym): Now that you have come up with an understanding of what is missing from you teaching knowledge expertise, what next? [**challenge towards professional growth/ learning**] [@7]

**Narratives:**

After having identified deficits in my pedagogical knowledge bases, as espoused in my teacher training and accrued teaching

experiences, I wonder how I could turn around my teaching **[dilemma of practice]** to incorporate issues of Africanising and decolonising what I teach **[readiness for life-long learning]**. However, I envisage that I should start with a sound literature review of issues on Africanisation, colonisation, and decolonisation of the curriculum to deepen my understanding of what I wish to incorporate in my daily teaching and student learning **[readiness for life-long learning]**. I then need to open my thinking and try out ways of teaching I have never done before **[readiness to think out of the box]**. For this topic of biological fermentation, I envisage that if I try to teach in ways which are different from the way it is presented in students' textbooks, I could overcome my teaching challenges. I could, teach this topic from my students' traditional way of life **[readiness to try out new things].**

After analysing this narrative through coding, five main themes emerged:

**dilemma of practice*&**
**readiness for life-long learning#**
**readiness to think out of the box#**
**readiness to try out new things#**

These themes were further clustered under common themes using the characters as used in the previous narrative. Two main themes emerged as depicted in Figure 7 below:
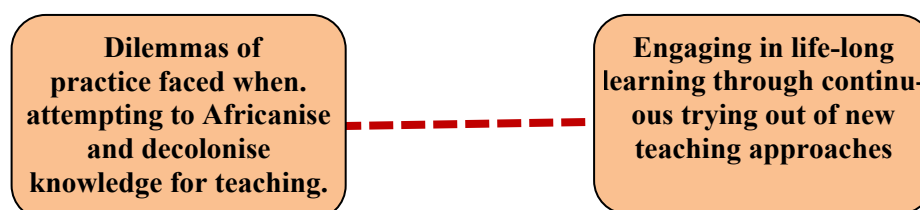


**Figure 7.** Themes that emerged from my reflections during my teaching

The main single theme portrayed by Figure 7 above is that when one faces pedagogical deficits in one's practice, one ought to think out of the box and try out new things. Based on these themes that emerged, I shared my views on how I envisaged I could teach in ways that incorporate the Africanisation and decolonisation of the curriculum when teaching the specific topic of fermentation. I presented my ideas to the critical friends following the same reflexivity cycles outlined above. After the reflection cycles and feedback from my critical friends, I then taught this topic and having them to observe my teaching in the context of what I had perceived I could try to them. My lectures with the students stretched over a period of one week. In instances where my critical friends could not c observe me teach, I sent them recordings of my teaching for them to see how the lectures where developing.

## How I taught the topic of biological fermentation

During my teaching of the topic of biological fermentation, I deviated from my usual textbook us approach. This involved contextualising the topic of fermentation in the context of the students' indigenous and traditional knowledge systems. This teaching approach involved invoking students' knowledge of 'home beer brewing,' or what is termed 'umqombothi' amongst the Zulu or Xhosa indigenous people of South Africa where this study was conducted. An elderly woman acclaimed to be a custodian of indigenous and cultural knowledge system by the community was requested to steer the traditional experiment as a guest teacher within the school grounds. She brought a clay pot, sorghum, and red sorghum. The traditional experiment involved the guest traditional teacher leading the class in the following process. The students were doing the 'traditional experiment' under the guidance of the traditional teacher.

## Materials used for the indigenous fermentation approach

A clay pot, grinding stones (one large and one small), traditional fibre beer sieve, white

sorghum and the small-grained red sorghum were the main tools and ingredients used to brew the beer (see Figures 8, 9, and 10 below).



**Figure 8.** Clay pot



**Figure 9.** 10 kg white sorghum



**Figure 10.** 1 kg small grained red sorghum

**Method followed during the indigenous fermentation process**

The large grained white sorghum and the small grained red sorghum were both soaked in water and placed in separate sacks (aerated containers). These were left in a dark room for 7 days. After seven days, both the types of seeds were showing signs of germination, with little roots coming out (see figure 11 below).



**Figure 11.** Partially germinating sorghum seeds

The seeds where then placed in the sun to dry for about three days. After complete drying these were separately ground into powdered meal using grinding stones (Figure 12). The 10kg sorghum meal was then used to make porridge (*Umhiqho* in local language), which was left for hours to cool down. After cooling, the ground red sorghum meal was added and mixed well. The mixture was left in a warm place for 7 days. The warmth was provided by cow dung manure (*umquba* in local language) that was placed around the bottom of the clay pot.



**Figure 12.** Sorghum grinding into powdered meal using a grinding stone

**Traditional fermentation results after a week**

The porridge (*Umhiqho*) had turned into a fizzy mixture with foam bubbles (*amagwebu*) coming out. When asked by the students what this was, the teacher explained that this was the final product umqomboti which just needed sieving to remove the rough part of the ground meal (*Amasese*) (Figure 13).

After my teaching through traditional brewing experiment, the Critical friends observed the entire experimental lessons. One of them critiqued: **Sam**: *How are you sure that the students*

*can see the similarity between the traditional experiment and the conventional fermentation experiment?* [**challenge towards professional growth/learning**] [@7]

**My response**: I see the possibility that my students may take these two experiments as isolated units that are not linked to each other. I now see the need to verify that thinking. **[readiness to try out new things]**

After the above dialogue, I designed a group discussion task. Based on the notion that students learn from each other through interpersonal interactions (Su & Tsai, 2020), students were given group tasks (see Table 2 below) where they discussed the names of the bottom row in the light of conventional science terminology.

**Table 2.** The students' perceptions of the similarities and differences between traditional and scientific fermentation brewing

| Fermentation | Container | Main substrate | catalyst | Products | |
|---|---|---|---|---|---|
| Conventional science | Beakers and flask | Cane Sugar | Yeast | ethanol | Carbon dioxide |
| Traditional brew | Clay pot | Ground sorghum | raphoko malt | Umqhomboti (traditional beer) | Amagwebu (Bubbles) |

It was fascinating to note that most groups managed to come up with the traditional brew terms that are equivalent to conventional science on the topic of fermentation.

**Teaching complex science ideas**

As shown in Journal entry below, I have always struggled with teaching the topic of balancing fermentation equations:

**Journal Entry (16 July 2020):** My teaching of how to balance chemical equations has always been a nightmare for me and for my students as well over the years as seemingly (**pedagogical deficits**), from my teacher training and in-service practice, I had not seemingly got any topic specific PCK for teaching this section of fermentation **[Gaps in teacher training programs].**

**Critical friend (Mary):** Your challenges with teaching of how to balance fermentation equations could be a crisis you will hold for your entire career, what is it that you could do? [**challenge towards professional growth**] [@7]

In terms of teaching complex science ideas of balancing chemical equation, I had to think out of the box and move away from my comfort zone. I had to attempt to use students' traditional systems and childhood traditional games. I

panned to engage my students in social interactions so that they learn from each other as recommended by Vygotsky (1978) and in the context of their preferred learning styles (Sharon, 2018).

In Zulu/Xhosa traditional origins of South Africa, there is a traditional game called "macatshelana' (hide seek). The students, dress in different t-shirts colours, red (for oxygen atoms), black representing carbon atoms), hydrogen represented by student in white t-shirts and blue representing the yeast cells. During the Macatshelana traditional game, 24 students formed a ring structure of a glucose molecule by joining hands as shown in Figure 14. I used a whistle to start the process of fermentation that involved students disjoining hands and rejoining again (bond breaking).

The students who were wearing blue t-shirts functioned as yeast as they played the role of disjoining hands (bond breaking). The students then joined hands after mingling (hiding and seek with each other). After the final whistle, all the 24 students had joined hands to form two sets of both ethanal and carbon dioxide each as shown in Figure 15. Students in blue were the only ones free depicting the yeast cells as typical enzymes.
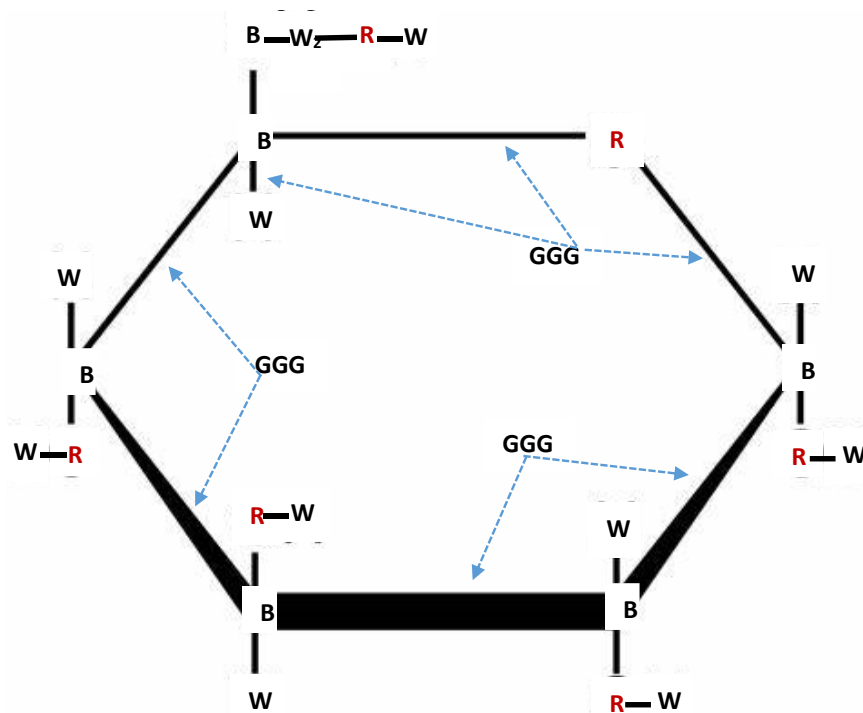
Key to the game: R: Oxygen atom, B: carbon atom, W: hydrogen atom: GGG-enzyme

**Figure 14.** The initial distinct group of 24 students with hands joined

The number of groups of ethanol and carbon dioxide formed were then counted as illustrated in Figure 15 below.
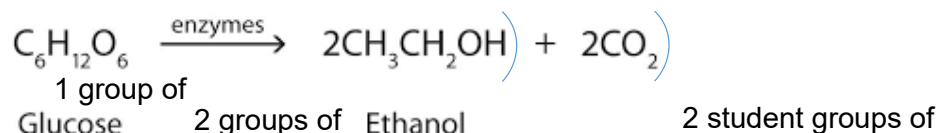
$$C_6H_{12}O_6 \xrightarrow{\text{enzymes}} 2CH_3CH_2OH + 2CO_2$$

1 group of
Glucose        2 groups of  Ethanol                        2 student groups of

**Figure 15.** The numbers of ethanol and carbon dioxides student groups formed from the initial single group of 24 after all had joined hands.

## RESULTS AND DISCUSSION

After all the teaching and learning activities, I engaged in the last round of reflections for critical feedback by my critical friends. The lessons learnt are discussed next.

### Final reflections after my teaching

Below is an analysed/coded transcript of my final reflections:

For the first time I found my teaching of the abstract topic of fermentation quite easy and enjoyable [**pedagogical relief from emerging insights/deficits in teacher training system**] $^{\$ @5.}$ For the abstract science ideas which I usually find difficult to teach, it has been an eye-opener on how to teach them with great ease and in concrete ways [**pedagogical emerging insights**]. $^{@5}$ I have now learnt that teaching in ways that are student-centred through rooting the content for teaching in the context of student's familiar indigenous games and everyday lives [**the use of humanising pedagogy**]$^{\%}$**,** teaching in ways that recognise indigenous knowledge [**Africanisation of the curriculum**]^ and also that recognise the students' playful nature as children in every adult [**Power of teaching through doing/ teaching for kinaesthetic students**] $^{!!\%}$ make my teaching easy for the students follow, and also I do not struggle to explain science concepts [**pedagogical emerging insights**]. $^{@5}$ Seemingly, the students' classroom engagement activities are a better

explanatory factor than my trial to explain abstract concepts **(pedagogical emerging insights)** [@5]**.** The issue of using dramatization of content turned my classroom into a kinder garden that raised the children in the adults in every student during my teaching [**Power of teaching through doing/ teaching for kinaesthetic students/ [Africanisation of the curriculum/ humanising pedagogy]** [!!%^]. Thus, seemingly, from the way my students were concentrating on the dramatization activities, this promoted the students to be attentive, which is crucial for effective and concrete learning. [**pedagogical emerging insights**]. [@5]

The students could follow my teaching as evidenced by their active participation and questioning during the brewing experiment and the simulation of balancing equations [**the power of humanising pedagogies/ pedagogical emerging insights/ teaching for kinaesthetic students**] [!!%@5]. This is because most students were able to figure out the traditional brew terms equivalent to the conventional terms used in the conventional science of the topic of fermentation [**emerging pedagogical insights/[Power of teaching through doing/ teaching for kinaesthetic students/ [Africanisation of the curriculum/ humanising pedagogy]** [!!%^ @5]. The observed excitement of my students during my lessons has changed my approach to my perceptions about teaching and student learning [**pedagogical insights/learning**] [@5]. I have come to reconceptualise my idea of teaching and

learning [**pedagogical insights/learning**] [@5]. My original conception of the art of teaching from my teacher training was that I should have the skill to explain the content to my students [**teacher centred pedagogies/ deficits in the teacher education system**][$z]. However, after this inquiry, my understanding of teaching has gone beyond to include pedagogical issues to do with offering opportunities to gain experience the content for teaching in the context of local, regional and continental examples [ **Africanisation the curriculum/emerging pedagogical insights/ the power of humanising pedagogies**] [%^@5]. I also learnt the importance of transforming the content for teaching and representing it in the context of the students' culture, indigenous ways of knowing and everyday local example [**Africanisation the curriculum/emerging pedagogical insights/the power of humanising pedagogies**]. [%^@5]

This is because it came as an insightful eye-opener that the teaching that entails students' everyday learning stems from linking the content for teaching with the students' everyday life context and this teaching [**professional learning/ decolonisation/ Africanisation the curriculum/emerging pedagogical insights/the power of humanising pedagogies**]. [%^@5 @6^]

After analysing the final transcripts through the process of coding, common themes emerged, and these were identified using different characters. These themes, as coded above, are clustered into main common themes by using characters such as [@1*&]

TEACHING IN WAYS THAT UPHOLD:

PROMOTES/ENHANCES:

WHICH ENHANCES:

@7@2@3 collaboration in research for professional growth

zstudent centeredness/contextualising content for teaching in the light of student IKS, indigenous games, everyday & everyday life

!!% The power of teaching through student doing/ teaching for kinaesthetic students

�*& addressing pedagogical deficits due to gaps in the teacher education system that leads to professional frustrations.

$ @5 pedagogical relief from emerging insights/deficits in teacher training system

@5 insightful pedagogical learning

$z address deficits in the teacher education system

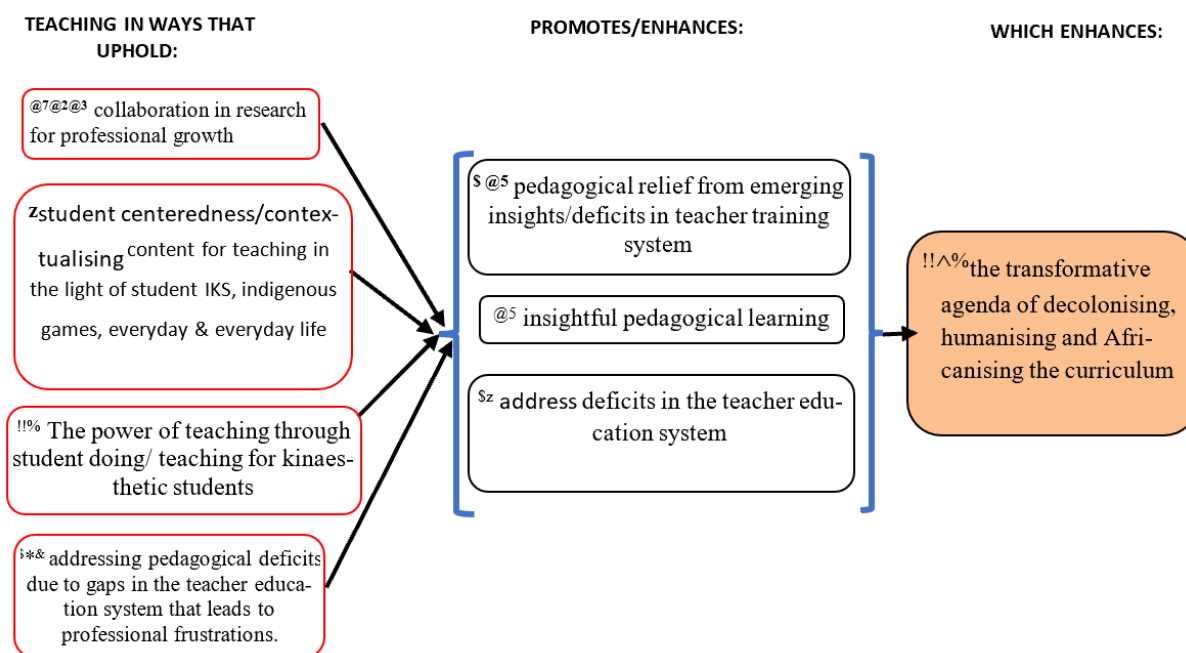!!^%the transformative agenda of decolonising, humanising and Africanising the curriculum

**Figure 16.** Themes that emerged from my final reflection transcript

Based on the themes that emerged as depicted in Figure 16 above, a number of pedagogical lessons were learnt that enhanced my re-thinking and reconceptualization of how to teach abstract concepts in the wake of decolonisation and Africanisation of the content for teaching. The lessons are discussed next.

**Pedagogical practices Lessons learnt**

The following two main themes about how to teach in ways that operationalise the concepts of decolonisation and Africanisation of the curriculum in a classroom context emerged in this inquiry. These are discussed below.

*The power of collaborative and critical feedback from critical friends:* The constant probing from my critical friends did not only enable me to think beyond my personal biases and limitations as a researcher (Alan, Sarıyev, & Odabası, 2021), but also to think out of the box in terms of new pedagogical approaches I could try out (Richards, & Shiver, 2020) to decolonise and Africanise my teaching, e. g:

**Sam**: *How are you sure that the students can see the similarity between the traditional experiment and the conventional fermentation experiment?*

**Mary:** *Your challenges with teaching of how to balance fermentation equations could be a crisis you will hold for your entire career, what is it that you could do?*

It is from such critical feedback from critical friends that I learnt from the probing of others (Edge, & Olan, 2021), and with others (Vygotsky, 1978) about possible practices I could enact in my bid to operationalise the abstract concepts of decolonising and Africanising my content for teaching. For instance, the use of the indigenous experiment and the drama which was used during my teaching was evident of showing the application of abstract ideas in the context of students' everyday lives as recommended by scholars such as Sheldrake, Mujtaba, and Reiss (2017). As shown in Figure 16 from left to right, the probing from others enhanced insightful thinking and re-thing about the idea of teaching (Jara, & Russell, 2022), and this transformed my pedagogical practices towards operationalising the decolonisation and Africanisation of the content for teaching for enhanced content delivery.

*Reconceptualisation of abstract content delivery*: It also emerged in this study, after thematic coding of the final reflection transcript (as depicted in Figure 16), that thinking out of the box and using teaching strategies and experiments beyond those found in the textbooks transforms one's pedagogical practices. The coding of my final reflection shows insightful pedagogical learning. For instance, *I also learnt the importance of*

*transforming the content for teaching and representing it in the context of the students' culture, indigenous ways of knowing and everyday local example.* As it emerged in this inquiry, incorporating the students' everyday life knowledge, indigenous ways of knowing that entail the use of indigenous games and experiments made teaching of abstract science ideas easy. This student-centred teaching approach transformed my rethinking of what is teaching and, also enabled me to learn how to Africanise and decolonise the curriculum. Through probing from critical friends on the meaning of this reflection, …. *the students' culture, indigenous ways of knowing and everyday local example,* I realised that my teaching had transformed to using typical African examples and indigenous ways of knowing related to the science in the textbooks (i.e. Africanising and decolonisation of the content for teaching). In addition to this, the idea that I used student-centred teaching where the students played an active role through drama and use their indigenous knowledge to learn abstract science also supported the notion of having used humanising pedagogy as also unveiled by scholars such Geduld and Sathorar (2016).

Thus, contextualising the content for teaching in the light of the student's IKS, indigenous games and African knowledge is one way of Africanising and decolonisation of the content for teaching. Such practices have the power to give the content for teaching a human face (Tshuma, 2023) for enhanced teaching.

In this inquiry, the integration of Indigenous Knowledge Systems (IKS) has been found to simplify the teaching of complex scientific concepts in biology. Notably, comparable results were also unveiled elsewhere in biology (e.g. Sitsha, 2023), technology education (e.g. Blose & Gumbo, 2024) and across different STEM subjects (e.g. Chahine, 2022; Ogunniyi, & Iwuanyanwu, 2024). However, what is notable is that these other studies were not self-studies. In addition to this, none of these studies involved the combination of IKS and traditional games in a typical self-study as was tried out in this inquiry.

## CONCLUSION

Based on the findings from this inquiry, where the thrust was to find how one could decolonise and Africanise the curriculum as guided by the main research question: How could one decolonize and Africanise the curriculum at a rural institution of higher learning?, it emerged that teacher pedagogical practices that contextualise the content for teaching in the context of the student every day knowledge simplifies the teaching of abstract ideas because students have the opportunity to build their learning from what they know to what they do not know. This makes teaching relatively easy because the teacher does not struggle to explain abstract concept as the students can learn from simple (what they know) to complex (new abstract ideas). It also emerged teaching from what the students already serve a crucial purpose of humanising the content for teaching.

Furthermore, transforming the content for teaching through incorporation the students' indigenous knowledge systems, and traditional childhood African games is one powerful way for operationalising the contentious issue of Africanising and decolonising the curriculum. The use of humanising pedagogies during teaching simplifies the art of teaching and student learning and thus enhances the decolonisation and Africanisation of the content for teaching. It is thus, recommended that teachers in any part of the world could enact decolonising and Africanisation or design their curriculum through the use in line with continental attributes through humanising their pedagogies. Such pedagogical practices involve representing the content for teaching in the context of the students' everyday life knowledge, indigenous knowledge systems, and indigenous games.

Thus, in any part of the globe, and not limited to Africa, transforming the content for teaching and learning into representations that encompass the students' everyday social lives, cultural artifacts, indigenous knowledge systems, and traditional games has unlimited potential to decolonise and Africanise/Europeanise the curriculum in typical education settings for enhanced teaching and student learning.

**Limitations of the study and suggestions for future research**

Whilst the findings from this study are based on a single self-study scholar and other academics from a multi-disciplinary perspective in the Africa continental context, the research could be conducted in research settings that involve more than one self-study scholars in different contexts involving critical friends who are specialists in a selected discipline of study. Furthermore, because as grounded in this inquiry that decolonization and Africanisation of the curriculum is not limited to the continent of Africa, future studies could consider doing the same study in other contents. The insights from such further studies could help shed insights and a broader understanding on the idea of 'decolonization' and 'Africanisation' of the curriculum beyond the African context.

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