Reducing Cognitive Load through isiZulu Explanatory Videos in Introductory University Economics: A Pedagogical Exploration

Suriamurthee Maistry
ORCID: http://orcid.org/0000-0001-9623-0078

Jessica Schroenn Goebel
ORCID: https://orcid.org/0000-0002-9906-0139

Abstract

Research on higher education pedagogies suggests that multimodal teaching approaches reduce university students' cognitive load as they engage with learning at a tertiary level. In contexts where the medium of instruction is different from the mother tongue of students, cognitive load is likely to be higher for students who are not fully proficient in the former. Instructional videos that explain discipline content in learners' mother tongue are potentially beneficial supplementary resources for lecturers and students. This article reports on a qualitative study exploring students' experiences of learning economics using videos featuring isiZulu explanations of economic concepts. The methodology employed for this study was guided by the tenets of Interactive Qualitative Analysis (IQA), a robust data collection and analysis protocol. A purposive sample of thirteen participants was recruited from a Foundation Economics class. In keeping with the IQA procedure, data was generated through focus groups and individual semi-structured interviews. Participants revealed that video explanations of economic theory and concepts in mother-tongue language, that were accessible, conversational and connected with lived experiences, eased and enabled concept comprehension. They also contributed to increased student confidence and motivation, and reduced anxiety associated with assessments. Intentional, fluid engagement with both English and mother tongue was a strategic modus operandi, with students

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recognising the need to ultimately develop conceptual mastery in the language of instruction and assessment. Participants' meta-cognitive awareness of their having shifted from superficial rote-learning towards deeper comprehension was of particular significance.

Keywords: translated disciplinary content knowledge, threshold concepts, trans-languaging, instructional video, mother-tongue learning resources, cognitive load

1 Introduction

This article reports on a study that set out to explore students' experiences of using isiZulu explanatory videos for the specific purpose of economics threshold concept learning. In the peculiar South African context, where English is the medium of instruction in most universities, limited scholarship addresses the problem of non-mother tongue English speakers learning specialist disciplinary knowledge. This perennial research problem relates to strategies to ease and enable student learning. It remains a germane research focus, especially in high-enrolment subjects like economics, which are often mandatory in commerce degree programmes. Research on higher education pedagogies suggests that multimodal teaching approaches reduce university students' cognitive load as they engage with learning at a tertiary level. The findings of this study are significant as they draw attention to how translated disciplinary content knowledge might scaffold learning for students who receive instruction in a language that is not their mother tongue. An important premise that this study departs from is that all students, irrespective of their language competence and heritage, have the cognitive potential to succeed in higher education. In this article, we argue that cognitive load in introductory economics will likely be reduced for mother tongue isiZulu-speaking students when translated isiZulu videos are used to support teaching.

The genesis of this pedagogical exploration (teaching and learning intervention) was the mandatory shift to remote teaching during the 2020 pandemic. At that time, we set out to develop video resources narrated in isiZulu to support introductory economics modules. We used a "threshold concepts" lens to identify difficult, important and transformative disciplinary ideas that students tend to struggle with (Davies & Mangan 2007) and to guide the design of the video resources. We developed about twenty short videos

(five to fifteen minutes in length), each focused on an economic concept or technique likely to have 'threshold' properties for students. The videos were scripted and recorded by two teaching assistants (TAs) – economics PhD candidates, experienced tutors, and speakers of the mother tongue, isiZulu. At an inception workshop, we introduced the idea of threshold concepts. We brainstormed (based on our own experiences of teaching and learning economics) to identify likely topics for the videos. Over the next several months, we prepared and (the TAs) recorded twenty short videos on identified concepts or techniques, which we referred to as the Conceptual Videos in isiZulu (CVZs). The specific videos used in the Foundation Economics modules on which this study is based addressed the following topics:

- Trade-offs and opportunity cost;
- Choosing at the margin;
- Diminishing returns;
- 'Positive' and 'normative';
- The Production Possibilities Frontier (Parts 1 & 2);
- Graphs in economics (Parts 1, 2 and 3);
- Price elasticity of demand;
- Income elasticity of demand;
- Circular flow;
- GDP;
- 'Nominal' vs 'real'; and
- Unemployment (Parts 1 & 2).

The explanations in the videos are not direct verbatim translations from existing English sources; instead, the TAs prepared intuitive explanations with original illustrative examples based on their understanding. We were confident that their discipline training and pedagogical content knowledge would inform the conceptual explanations and ensure that nuances in meaning and discipline-specific terminology were correctly captured. Developed on a limited budget under lockdown conditions, the low-tech videos are recorded using PowerPoint slides, including pictures, graphs (where relevant), and summary text. The CVZs are distinct from and complementary to lecture translation videos. They are not specific to a particular module or textbook, since the concepts underpin many areas of economics and could supplement several modules. CVZs were made available as optional extras for isiZulu-

speaking students through the virtual learning environment (VLE) pages of foundation, first and second-year economics modules. Each focuses on conceptual understanding and application, uses relatable examples, and is narrated in isiZulu in an informal, conversational style. English terms are retained for specific disciplinary ideas, even within the spoken isiZulu explanations, and summary text on the slides also remains in English. We hoped this approach would make the module content more accessible to students by offering a bridge from English to isiZulu, from formal to less formal presentation, and from abstract theory to relatable concrete applications.

English medium instruction is gaining ever greater currency in international higher education (Preece & Marshall 2020). In higher education institutions in South Africa, English is the predominant medium of instruction, but not the mother tongue of indigenous students (Abongdia 2014; Munyaradzi & Manyike 2022). University study for such students is likely to present with particular challenges. A distinct feature of South Africa's peculiar segregationist history is that indigenous African languages had not gained currency as a medium of instruction at universities, a phenomenon that has carried into the country's democratic era (Nkosi 2014). While the official language of instruction in schools is English, instruction in mother tongue languages remains a critical feature. The outcome is that many indigenous African students enter university with English language competencies that inhibit the transition to a teaching and learning context that applies academic English as the modus operandi for instruction. While some impetus exists to accommodate non-English mother tongue students in South African universities, this effort has been fragmented and sporadic and often not supported by decisive policy initiatives at different institutions. Clearly, English is not likely to be dislodged as the dominant (and often the only) medium of instruction in South African higher education institutions.

The question of 'students' graduateness and employability prospects' makes English alluring, but may come at the cost of cultural identity loss (Maseko & Tennyson 2019:264). A compounding factor is that in specialist disciplines like economics and the sciences, students with limited English proficiency might encounter particular learning challenges because the discourse is usually replete with discipline-specific concepts and constructs (Cobbing 2011). There is limited understanding of how such students navigate the higher education teaching and learning space, or how mother-tongue video explanations of disciplinary content knowledge might scaffold the learning of

fundamental (threshold) concepts and principles, a research focus that this article attempts to address.

The section that follows considers some responses to the challenges of linguistic inequality at university level in the South African context, with a focus on trans-languaging. Next, we consider how the principles of multimodal teaching, cognitive load and threshold concepts theory may inform teaching and learning in a multilingual context. We then review the use of instructional videos in economics education. An outline of our research methodology precedes the key findings we draw from participants' accounts of their learning economics with the CVZs. We offer some reflections and implications for promoting effective learning in multilingual higher education settings.

2 Translanguaging and Organic, Intuitive Translation

There is a genuine concern by university teachers 'about their students' inability to survive, or better still thrive, when taught through English' (Macaro et al. 2018:36). In the South African context, recent scholarship that attempts to address linguistic inequality as barrier to academic success through curricular innovations, has begun to emerge (see for example Parmegiani & Wildsmith-Cromarty 2022; Wildsmith-Cromarty *et al.* 2022; Ngcobo *et al.* 2016). Paxton and Tyam, in their study of code-mixing and codeswitching practice at a South African university, reflect on the Xhosalising of English as a means of negotiating 'meaning, identity and status' by economics students and tutors (Paxton & Tyam 2010:247).

In attempting to embrace a broader pedagogical conception, researchers have begun to invoke 'translanguaging' as theoretical/ conceptual device as they attempt more inclusionary language practices in the higher education context (see Batyi 2022; Hurst & Mona 2017; Ngcobo *et al.* 2016). Translanguaging has been applied in general reading comprehension studies of higher education students (Hungwe 2019), academic literacy studies (Motlhaka & Makalela 2016), and discipline-based (Chemistry) pedagogy studies (Charamba & Zano 2019). In a study of South African medical students' experiences of translanguaging (Mbirimi-Hungwe 2021), harnessing students' linguistic resources has proven useful for meaning-making. Clearly, translanguaging pedagogy is emerging as an effective and inclusive orientation to teaching and learning in higher education contexts where the medium of instruction is not students' mother tongue.

Translanguaging is a practice of 'using one's idiolect, that is one's linguistic repertoire, without regard for socially and politically defined language names and labels ... [to] think beyond the boundaries of named languages' (Wei 2018). It has much appeal as a theoretical heuristic as it suggests that learners have an innate translanguaging instinct and that the 'act of Translanguaging creates a social space for the language user by bringing together different dimensions of their personal history, experience, and environment; their attitude, belief, and ideology; their cognitive and physical capacity, into one coordinated and meaningful performance' (Wei 2018:23). Translanguaging's recognition of the link between identity construction and language is central to the learning experience in that it offers 'opportunities for the learner to make links – often in ways not available to their teachers – between their experiences outside the classroom and those within' (Conteh 2018).

While translanguaging has been applied to studies that focus on discipline-specific concept literacy and the development of glossaries (see Madiba 2014; Mbirimi-Hungwe & Hungwe 2018), there is a distinct absence of research into concept-rich and accretive disciplines like economics in which the acquisition of threshold concepts is crucial to accessing and progressing in the discipline. The creation of glossaries is often associated with direct translation, which entails the conversion of text or speech from one language to the target language with the distinct intention of matching the original meaning to the extent possible. It is beyond the scope of this paper to offer an account of the field of translation studies except to indicate this is a growing body of scholarship (Tajvidi & Arjani 2017), with recent scholarship highlighting the potential of digital technologies in the world of translation (Jiménez-Crespo 2020). Of significance, is that the emphasis in translation is on planning for and preparing the translated product and testing its accuracy. This is somewhat different from the more process-oriented notion of translanguaging. In this study, we consider the notion of intuitive, organic translations as a distinct exercise in which disciplinary experts instinctively and spontaneously harness their economics disciplinary knowledge and principles for conversion, in this instance, into isiZulu. The translation of academic texts such as doctoral abstracts and the politics and pitfalls of translation from English to isiZulu have begun to gain attention in recent local scholarship (see Dlamini 2023; Ndlovu 2013; Mlotshwa 2024; Dlamini & Dlamini 2021), an indication that this is emerging as an important research focus in the SA context.

3 Harnessing from Multimodal Teaching, Cognitive Load and Threshold Concepts Theory

Multimodality encompasses the diverse ways in which people communicate and represent experiences. This includes language, gesture, gaze, posture, movement, sound, writing, and images – essentially any medium through which meaning is constructed and conveyed (Jewitt 2014). In education, multimodal teaching applies this perspective by integrating various communicative channels, such as visual, auditory and textual modes, to enhance learning. It acknowledges that learners engage with and process information through different cognitive styles, and research suggests that combining multiple modes of instruction leads to better learning outcomes than relying on text alone (Sankey & St Hill 2005).

Technological advances, together with the changing needs, preferences and behaviours of today's learners, have driven an ongoing shift from conventional media (books and face-to-face lectures) to computer-based media, including instructional video, narrated animations, hypertext, games and simulations (Mayer 2019; Bouchey *et al.* 2021). This shift has enabled the fuller use of multiple modes, enriching teaching with a broader array of tools (Hartle *et al.* 2021). Presenting information using multiple sensory channels should enhance students' engagement, enjoyment and assessment outcomes (Sankey & St Hill 2005). Further, offering alternative modes – such as visual and auditory representations in instructional videos – can facilitate understanding when text does not fully communicate a concept (Sankey & St Hill 2005). Multimodal teaching also gives students more control over their learning (Bouchey *et al.* 2021).

Multimodal teaching is partly underpinned and informed by Cognitive Load Theory (CLT) (Sweller 1988), Dual Coding Theory (Paivio 2006), and the Cognitive Theory of Multimedia Learning (Mayer 2019). These theoretical perspectives suggest that learning entails active cognitive processing aimed at meaning-making, and relies on prior knowledge and working memory. Cognitive Load Theory, in particular, holds that learning makes three types of demands on the learner's working memory (Sweller 1988; Sweller *et al.* 2011). While extraneous cognitive load refers to the mental effort caused by how information is presented, often involving material not directly relevant to the learning objectives, intrinsic cognitive load relates to the inherent difficulty of the content itself and the mental processing required to achieve the learning goal, depending on the complexity of the material for the learner. Germane

cognitive load is the mental effort generated by the learner's active engagement, including the development of schemas and the process of automatization.

A complementary perspective on learning is offered by the Threshold Concepts Framework (TCF) (Land, Meyer & Flanagan 2016) – a view of learning that emerged in economics education research (Meyer & Land 2005), and has since become widely influential in framing enquiry into learning, and in informing teaching (Flanagan 2020; Davies *et al.* 2024). The TCF suggests that in probably all disciplines, particular concepts serve as gateways to progress in disciplinary thinking. Reaching an understanding of such a threshold concept is likely to be experienced as transformative and integrative, bringing about a shift in learners' worldviews as they develop disciplinary ways of thinking and practising. Threshold concepts are also often troublesome for students in that they may present knowledge which is counter-intuitive or alien or includes tacit elements, troublesome language or an unfamiliar discourse. Crossing conceptual thresholds may thus entail confusion, uncertainty and anxiety as learners fluctuate between previous and emerging, reconstituted understandings (Cousin 2006). In this view, learning encompasses cognitive and affective elements and is entwined with the learner's context and personal biography.

The TCF aligns with CLT and its offshoots, focusing on mastering complex knowledge from distinct perspectives. While the TCF emphasizes the transformative, often troublesome concepts critical to advancing in a discipline, CLT centres on how the brain processes and manages information during learning. Both views converge in their understanding that mastering these concepts demands significant effort from learners. CLT stresses the need to reduce extraneous cognitive load, freeing up working memory to handle intrinsic and germane cognitive demands – the very type of integrative thinking that the TCF highlights. Both perspectives recognize that the cognitive effort essential for such learning can be supported through teaching methods that manage cognitive demands and avoid overwhelming the learner.

It may be argued in terms of both these theoretical perspectives that the challenges inherent in disciplinary learning at university are likely to be heightened when students have to reach conceptual understanding through an additional language as a medium of instruction. Conversely, if learners are introduced to new concepts in their mother tongue without having to first translate content from English, cognitive processing would likely be eased, allowing for more effective integration of the new information into learners'

existing schema. Roussel *et al.* (2022) hypothesize that the presentation of content in a second language not yet mastered brings excessive, extraneous cognitive load and that having first to translate to learn content reduces learning of both content and the second language. They conclude that providing content in learners' mother tongue before (and to a lesser extent, after) the second language lecture is likely to better support the learning of both language and academic content, compared to immersion in second language teaching without mother tongue support.

4 Instructional Video in Economics Teaching

The use of video (formal and informal) for instruction has expanded massively in the last two decades (Bétrancourt & Benetos 2018). Because video can actively use and combine several multimedia elements, such as visuals, audio, animated images, and text, it can support learning processes more effectively than any of these elements individually, potentially leading to better retention and transfer of knowledge (Altinpulluk *et al.* 2020; Tani *et al.* 2022). Substantial empirical evidence suggests that well-designed instructional videos can enhance engagement levels and learning outcomes more effectively than traditional live lectures and texts (Expósito *et al.* 2020; Fyfield *et al.* 2019). Additionally, videos have been shown to increase motivation, attention, and memory retention, and are valued by students as learning tools (Fyfield *et al.* 2019). Several studies suggest that to maximize student engagement, videos should be shorter than fifteen minutes (Hong 2024).

In economics teaching, innovative approaches including video-based content have emerged in line with broader shifts in education, the affordances of technological advances, and the preferences of contemporary students. The COVID-19 pandemic, with its sudden and widespread shift to online learning, accelerated this trend, prompting an increased reliance on video as a medium for content delivery within VLEs. The broad use of video as a teaching tool encompasses both 'non-economic' media (such as clips from movies or TV series) to illustrate economic principles and more intentional instructional content. The latter includes lecture capture and purpose-made instructional videos designed for online courses or to supplement face-to-face lectures in a blended/ flipped classroom context. This last category is of most interest here. Emerging research on instructional videos in economics is focused on explaining how videos were developed and deployed, quantitively evaluating their impact on learning, or reporting on students' perceptions.

Instructional videos may be developed and used as pre-lecture introductions and/or post-lecture summary and review tools. Pre-lectures are used most frequently in a flipped classroom setting (Vazquez & Chiang 2016), predominantly at the introductory or other undergraduate level. Videos tend to be short (ten to fifteen minutes), visually intensive narrated animations or live videos focusing on particular concepts or processes (see for instance Vazquez & Chiang 2016; Tani *et al.* 2022; Enz & Kassens 2022; Expósito *et al.* 2020).

In congruence with the aims and tenets of multimodal teaching, studies consistently report positive academic impacts of video use in economics education. Viewing short video lectures before class has been found to improve understanding, recall and retention of content significantly (Vazquez & Chiang 2016; Gulley & Jackson 2016). Additional benefits of instructional videos include better assessment outcomes, especially regarding procedural and evaluative knowledge, and gains in students' metacognitive knowledge (Tani *et al.* 2022). Instructional videos may be especially helpful to novice or less-prepared students who require more academic support in the discipline: Hong (2024) found that beginner economics students (in a class of mixed prior knowledge) made more intensive use of supplementary video resources and recorded greater improvements in exam performance than non-beginners. Instructional videos are valued by economics students, being among the most frequently used activities in VLEs, and typically chosen over more interactive elements such as chat forums, quizzes or blogs (Enz & Kassens 2022; Hamutoglu *et al.* 2020; Barile *et al.* 2022). Despite the indicated learning impacts and positive student perceptions, the use of instructional videos in university-level economics education remains underexplored (Expósito *et al.* 2020).

5 Methodology

To explore students' experiences of learning economics with the CVZs, we used a case study drawing on BCom Foundation Economics modules at a South African university. These modules form part of the BCom4 curriculum – an extended curriculum programme offering alternative access to students from no-fee schools that service indigent communities of South Africa. The majority of the class comprised isiZulu mother-tongue speakers. The CVZs were available and recommended to students in these modules, and general feedback suggested that many students had used and valued them. Students in the Foundation Economics class, whose mother tongue was isiZulu and who had

used the CVZs over the year, were invited to participate in the study; thirteen volunteered to do so, forming the study sample. Since this number fell within the recommended range for our focus group (12 - 20 participants) (Northcutt & McCoy 2004), no further selection was applied, meaning the students effecttively self-selected. This aligns with purposive sampling, where participants are deliberately chosen based on their 'typicality' or specific characteristics of interest (Cohen *et al.* 2011), and their ability to 'shed the most light … on a case' (Rule & John 2011:64). The study was conducted in accordance with the ethical guidelines of the University of KwaZulu-Natal, and ethical clearance was received from the university's Research Ethics Committee.

We used Interactive Qualitative Analysis (IQA) (Northcutt & McCoy 2004) to generate and analyse data. IQA is a structured, protocol-driven research procedure that combines qualitative richness with quantitative rigour, and entrusts participants with an initial analysis of the data they generate, typically in a focus group and in-depth individual interviews (Goebel & Maistry 2022). The thirteen participants attended a focus group session towards the end of the second semester of 2022.

In the focus group, participants were guided through a brief reflective exercise, encouraging them to recall their experiences using the CVZs in their economics studies over the year. They were then invited to write down their thoughts freely in a silent brainstorming process. The researchers facilitated inductive coding, as the participants collectively undertook thematic clustering of responses. This was followed by axial coding – a deductive process in which the participants as a group identified and named several 'affinities' (themes, or clusters of responses) that together comprised their shared understanding of learning economics with the CVZs (Northcutt & McCoy 2004).

The emergent affinities are listed (with summary explanations) below:

Examples: The use of relatable, real-life examples in the CVZs enhanced understanding and aided recall of economic concepts.

Length and format: The short format and integration of visuals promoted engagement.

Understanding and overcoming challenges[1]: Interaction of language and content affects difficulty, either positively or negatively; informal explanations in isiZulu made challenging economic concepts easier to understand.

Academic benefits: Using the CVZs contributed to a stronger grasp of content, more effective studying, and improved academic performance.

Attitude: Learning with the CVZs fostered more positive attitudes toward economics, increasing motivation and confidence in the subject.

Feelings: Engaging with the CVZs evoked a range of positive emotions, influencing students' perceptions of themselves, the discipline, and the university.

Suggestions: There was strong support for continuing and expanding the use of CVZs to benefit future students.

Individual in-depth interviews with twelve participants subsequently allowed for elaborating their understanding. Following IQA guidelines, we coded the interview transcripts according to the affinities identified in the focus group. We then combined axial data – quoted excerpts that support or point to a theme – from the transcripts into a composite table for each of the four key findings we present below. We identified recurring sub-themes within each broad thematic finding and combined the quotes that alluded to each element. These composite quotes form the source material for the presentation of our findings. Because they amalgamate the responses of all participants, the source quotes run to many pages and are too lengthy and repetitive to reproduce in their entirety. (The full data set is available on request from the authors.) In presenting our findings, we have thus selected representative, rich, verbatim excerpts from multiple participants, melding them together to sound like one voice (Northcutt & McCoy 2004).

[1] Initially the group had separated 'Understanding' and 'Overcoming challenges'; we have merged them here because substantial conceptual overlap suggests that, for analytical purposes, they are best understood as parts of a single theme (Northcutt & McCoy 2004:103).

6 Findings: Participants' Experiences of Learning Economics with the CVZs

Below, we present four key findings. The elements or sub-themes of each are described through verbatim composite quotes, which foreground the perspectives and voices of the participants and offer direct insight into their experiences and perceptions. An unedited summary excerpt serves as the heading for each quote. While we have lightly redacted the quotes for readability by removing minor tics, hesitation or repetition, we have not "corrected" or "polished" the participants' verbal expressions. Our own additions in the following findings are limited to a short introductory explanation before each quote and a summary paragraph thereafter.

6.1 Mother Tongue Explanations Facilitate Economic Concept Comprehension

6.1.1 I watch it once and just understand it right away

In the composite excerpt below, students described challenges with English and the immediacy of understanding that came when isiZulu translated videos were used.

> As I am in the university, I know I am supposed to know English, but sometimes there are particular topics that are hard to understand, but better in isiZulu. When you are listening [in] English, you might find that sometimes the lecturer will release a bombastic word. Then now you are challenged, and you have to go to Google and go to the dictionary... in Zulu, everything is just flowing. The challenges were the English terms that were really difficult ... to use another academic resource really helped me to really understand. I didn't understand the economic terms. Even if I used Google to search and see the meanings of the words, I didn't find the exact meaning of the word. Because I really know isiZulu, so I understand it more than English. I watch it once and just understand it right away. It made me feel comfortable because I didn't have to ask again, what does the word mean, or any terms mean? I'm coming from rural areas, so our teachers, they usually try to explain in isiZulu so that we can have a better understanding. So using isiZulu videos, they help me to understand most of the concepts. It is very easy for my mind to just grasp everything. And then after watching the video it basically makes it – I don't know if the word is

> narrow, but it makes it smaller, as though it's like it's jumping over a puddle.

Students encountered difficulties with complex English terminology, often needing to consult dictionaries or online resources with limited success. IsiZulu explanations provided a more accessible and immediate path to understanding, allowing for smoother comprehension and reducing the frustration associated with deciphering unfamiliar English terms.

6.1.2 Oh, thís is what they meant

Here we see how isiZulu explanations in the videos led to deeper understanding and conceptual threshold crossings as students clarified, corrected, completed and confirmed their understanding.

> It made economics understandable, basically because it's terms that you know that you're used to, but because they are said in a different language you feel as though you don't understand. But now that they are said in in terms that you know and that you use in everyday life, then it becomes understandable and you're able to remember it. You get that oh, *this* is what they meant, and you can see that it's something that you actually do know ... And there are some concepts that I thought I understand before watching the video, only to find out that I was thinking in some bit of a wrong way. Sometimes when things were said in English you wouldn't quite understand ... and then when they are said in Zulu you have like a deeper understanding of it and an understanding that you can remember. So that even when I'm writing tests, I'm able to remember the concepts discussed ... The main reason that I watched it is to really understand ... I just needed to have clarity and to have proof that I understand it in mother tongue and in English.

The isiZulu explanations, using familiar terms and everyday language, facilitated students' understanding of economic concepts and led to moments of realization and clarity that they had not experienced when learning the concepts in English. The videos helped them to correct misconceptions and gain a deeper understanding that they could recall, even during assessments, and provided confirmation that they had grasped economic concepts in both isiZulu and English.

6.1.3 Using learning material in isiZulu made me feel more clever, because I understood everything

The data here reveals that newfound access to understanding boosted students' confidence, motivation, and academic performance.

> They made me comfortable. Yes, I was comfortable, and I was okay .... They took the stress away from me because I had anxiety, anxiety before writing the exams. Like, how am I going to fit all of these things in my mind? .... I felt relaxed because I felt like most of the things are covered in isiZulu. So that's like minus one problem, you see. It kind of motivated me, even on my lazy days where I feel like, 'oh but this is a lot'. It is something that builds up your knowledge about economics, on my understanding, and it is something that makes me catch things easy. Using learning material in isiZulu made me feel more clever, because I understood everything. They helped me not to fall behind in the module of economics, and I was able to get higher performance after studying them. Even when I was writing the tests, it was beneficial for me because I remembered the way some words were translated in Zulu language.

The videos positively impacted students' confidence and motivation, reducing assessment anxiety and making them feel more comfortable with and less overwhelmed by the material. This translated into improved academic performance, with students reporting better understanding, higher marks, and a sense of accomplishment in their economics studies.

6.1.4 Everyday conversation (and a little bit of English)

What became clear from this excerpt below is that students favoured informal, accessible and mixed language over 'strong' isiZulu in the video explanations.

> They were in Zulu language, and they were less formal than lectures. [The explanations] felt like everyday conversation, with everyday terms, no new terms, [that] helped understanding better. It was nice listening to them as they were translated in Zulu but also had a little bit of English of which made them more nicer. The difficult thing in CVZs is the use of strong Zulu language .... Ah, some other words are not easily understandable, they need Zulu Dictionary ... There was a

> concept that was changed into Zulu, but it was really hard to pronounce it, and to like 'have' it. But it helps when you just go to Google and find similar words, to relate to the ways that you can remember. Firstly, it was an English term and the Zulu word, it was really not understandable until I found a similar word and simple way of explaining it. I think the isiZulu that was used there was a little bit more strong for others and for me, I think it shouldn't be more strong.

Students liked the conversational tone, everyday language, and retention of some English in the videos. They found that simpler isiZulu terms and explanations were easier to understand and remember, and some suggested toning down the 'strong' isiZulu language used in some of the videos, for greater accessibility.

6.2 isiZulu-narrated Contemporaneity and Applications to Lived Experience bring Meaning to Disciplinary Learning

6.2.1 You can't forget what you usually see happening

In this composite quote, students describe how the illustrative examples in the videos revealed the practical relevance of economic concepts, and enhanced their understanding and recall.

> I can say that the examples are good, yes ... because these examples are things that happen in real life, you see. And now when they are told to us in isiZulu, then we start now to think more, and sit down and think more, and say, oh, this is how this thing happens ... For me, examples were more relevant, what's happening in real life ... Examples that we see every day, maybe in businesses, how they operate. I can relate to the examples, what is happening around us. So, in that way, you can't forget what you usually see happening. So, the examples made me to understand the concepts and to apply it whenever I needed to. She [video narrator] tried to use the examples that we are familiar with so that everyone could understand each content that she was trying to explain. Those examples made me remember how to deal with the concept.

The use of relatable examples, drawn from everyday life and familiar contexts and explained in their mother tongue, facilitated students' understanding and

retention of economic concepts. The examples also highlighted the real-world relevance of the content they were learning.

6.2.2 I looked at it in a different way than before

Here we see how real-world applications, and the deeper conceptual understanding they facilitated, could change students' views of the world and the discipline.

> Examples make it more clearer because you are able to apply these examples in the real world. And you actually get more understanding. You can also use your examples that you make in your own mind and you are able to understand better. When the unemployment was explained, the structural unemployment and the classical unemployment – when those examples were made, then I said, oh, now I understand .... As a result, I looked at it in a different way than before. I can apply it now. Like I can see it in the real world ... now I can understand to see, okay, this person is structural unemployed. I think that example was really great because it's made me see things in a way that I never thought they were. The CVZ videos made me see this economics, it's not just a theory. But it can also be applied to real life events.

Examples presented in the videos deepened students' understanding of economic concepts by enabling them to connect the theoretical with the practical. They were able to see how economic concepts applied to real-world situations, gaining a new perspective on economic phenomena and recognizing the practical relevance of economics in everyday life.

6.2.3 Now I was no longer cramming

Students' descriptions suggest increased motivation and deeper engagement with disciplinary learning as they gained understanding of relevant and meaningful content.

> I can say the examples that were made in the isiZulu videos, they influenced my feelings into loving economics more than before, because I could even relate ... because now I was no longer cramming. I was listening to my mother language. And as I was listening, I

> thought of things that happened in real life. Before those videos, I was just reading, reading everything, you see, and cramming. But when they were being explained to me, and I started understanding those things, now I can relate. The videos helped me to fall in love with economics. In that way, I make a lot of time to study it. The examples gave me the ideas, the ideas to actually ... ngingathini [what can I say?] to see the economics in the real world, to understand it in different parts. Yeah, I can see that. They also made my mind to be able to think of other examples.

Together with the immediate understanding afforded by mother tongue explanations, seeing the practical relevance of economic concepts increased students' motivation and engagement with the learning material. They shifted from reading and rote-learning to deeper understanding, spent more time studying, and extended their disciplinary understanding as they applied an economic perspective to the world around them.

6.3 Agentic and Strategic Movement between isiZulu and English for Learning and Assessment

6.3.1 Everything that I write is in English, but I understand in Zulu

In the excerpt below, we observe student agency at work as they strategically use both their languages in the learning process.

> They helped me a lot when I was preparing for the exams. When I was answering the question papers, they made it easy for me because I was taught in isiZulu. So, I could easily understand. I think in a mixture, because it's also important to think in English, because all the questions in tests are asked in English. But sometimes, I also think in Zulu so that I could easily understand. The main reason I watch them is that I just want to understand more each and every topic. So, let's see, even when I'm going to write a test, already I have [a] clue, even though I'm lost, but when I'm taking it to my mother tongue language, I clue *ukuthi* [that], oh, this question is meaning this. I will think of it in isiZulu and then try by all means to translate it in English. Everything that I write is in English, but I understand in Zulu and try to make an

> example. I can do an example of Zulu and make an example of English where I can say, okay, it was like this and this, and turn and translate everything from Zulu to English and get it, okay, it is like this. So, it gives us the opportunity to be able to write in an exam situation.

Students consciously switched between languages in understanding and applying economic concepts. They leveraged the clarity and accessibility of isiZulu explanations to grasp the concepts, then transitioned to English for assessment purposes. This process involved active translation as students moved between isiZulu and English to bridge the gap between understanding economic ideas, and expressing that understanding in English-based assessments.

6.3.2 The Course (Assessment) it is written in English

In the excerpt below, we discern students' firm realisation/recognition of the critical importance of eventual proficiency in English as this was the language of assessment.

> Yeah, it's helpful if you know how to write in English. Yeah, it's helpful. Because I have some English in me. But if you don't know how to write in English, I think it would make things worse for you. Because everything would be in isiZulu, in your mind. But one thing that I can say is that not everything should be in Zulu, because obviously there, the course it is written in English, everything it is in English. So, in Zulu is to like make a student to understand.

While recognizing the value of isiZulu in aiding comprehension, students acknowledged the importance of English proficiency and understood that academic success required the ability to engage with and express economic ideas in English.

6.3.3 It's obviously going to be a mix

The data excerpt below indicates that students engaged both languages, fluidly and intentionally, in their thinking and speech.

> I think in both [languages], because I can't finish a Zulu sentence without adding an English word, I can't finish an English sentence –

> okay I can, but most of the time when I'm generally talking or thinking, it's obviously going to be a mix ... Most of the time I think in English. Yeah, but when it comes to like school, isiZulu helps me a lot, even though I think a lot in English. Yeah, I also think in isiZulu, but when it comes to school and reading things, I love isiZulu.

Students described using a mix of both languages when thinking and talking, often moving between them seamlessly, although isiZulu was most helpful for academic understanding.

6.4 Visual Elements Support Economic Concept Acquisition

6.4.1 I still have the picture in my head

In the excerpt below, we see how powerful, relevant and interesting images work towards improving both comprehension and memory associations.

> The way it was presented, it encourages me to listen at the same time enjoying the picture. When you are watching the videos you don't get to fall asleep or get bored because there are pictures that you can see that are interesting. The colourful pictures put the unforgettable idea in my mind. So, I remember from those pictures of things that we can see, so things that we know. I think these pictures made it easy to remember; like for instance when we spoke about how when we have money, we want substitute goods, so I still have the picture of noodles in my head – that ... when you have less money, you're gonna go for noodles and when you have money, you're gonna opt for different things. I also loved them because, yes, the things that the lecturer was saying was the same things as the things that I was watching in the videos. So, whenever you watch the videos, and you see some pictures, they usually contain some message, they usually try to explain something ... and that way you understand, you quite understand some concept. So, you can actually do better in academics.

The pictures and illustrations in the videos were engaging and kept students interested, preventing boredom and encouraging active listening. Relatable images reinforced economic concepts and aided in recall. The alignment between the visual content and the lecturer's explanations further solidified students' understanding and contributed to improved academic performance.

7 Discussion of Findings

In this study of a pedagogical exploration with creative language manoeuvring, we did not comply with the tenets of an experimental study involving experimental and control groups, nor did we administer pre-tests and post-tests. We were particularly concerned with contemplating pedagogical strategies that might make introductory economics more accessible to students studying its concepts and theories in a second language that they did not have an authoritative grasp of. Aiming to reduce the cognitive load that comes with learning complex constructs in a second language, we considered layering the traditional face-to-face contact teaching with a visual intervention that was nuanced with intuitive language mixing. The power of the visual to jog memory and trigger comprehension is an important finding that this study has confirmed.

The analysis of the qualitative data generated reflects an overwhelmingly positive reception of the video-recorded isiZulu teaching materials. Student participants in the study were convinced that the video explanations in isiZulu eased their comprehension of economic concepts. Using everyday isiZulu instead of formal, academic isiZulu appeared to be a distinct enabler that scaffolded concept comprehension. Students preferred a kind of informal, accessible, mixed language overlaid with the use of relatable examples or critical incidents from their everyday lived experiences. Connecting new conceptual learning to familiar contexts in a conversational tone that moved between students' mother tongue and English had particular appeal as it helped students bridge the gap between abstract economic theory (and concepts) and its practical real-life application. Bridging the theory-practice gap will likely challenge English second language speakers when such theories/concepts are presented only in English. Translanguaging, as revealed by the findings, has much potential to move beyond simply recognising how theory is applied in practice; it may also move into a meta-cognitive realm in which students might see how the practice of everyday economic life actually informs theory. In this instance, acquiring key threshold concepts is an important portal to deepening economic thinking – as transformative and integrative (Flanagan 2020; Davies *et al.* 2024).

Wei (2018) reminds us that translanguaging's power is its ability to harness the affective, creating socially inclusive spaces. Such spaces (un)wittingly and positively afford recognition and acknowledgement on multiple levels – a condition in which non-English students experience affirmation of language (and cultural) identity and personal lived experiences.

A key issue worthy of further discussion is that translanguaging appears instinctual (Wei 2018), having non-contrived innateness that is likely to feed and strengthen student confidence and improve motivation, a distinct finding that emerged in this study. A compelling observation is that students were deliberately intentional and strategic as they fluidly engaged with both languages. This strategic interplay of languages highlights students' resourcefulness in leveraging their full linguistic repertoire to enhance their learning and achieve academic success. They actively moved between languages to clarify their understanding, generate examples, and, ultimately, communicate their knowledge effectively in English-based assessments. This purposeful manipulation and movement between languages is powerful as it reveals a sober recognition that, ultimately, demonstrating conceptual comprehension of economic theory and concepts in English is still a mandatory compliance that must be adhered to in order to succeed in the learning programme. Arguably, the most pleasing and productive outcome of this pedagogical exploration is the revelation by students that they had shifted from the unhealthy practice of memorizing (rote-learning) economics content, towards deeper conceptual comprehension thereof.

8 Conclusion

This study drew on a small, self-selected sample of students from a foundation economics module in an alternative access programme; different student groups might yield different results. Additionally, the self-reported nature of the data introduces potential bias, and we did not attempt to verify students' perceptions of improved understanding and performance through objective testing. We also acknowledge that while features of IQA enhance credibility, its findings depend strongly on focus group dynamics, and alternative methods might have produced different insights. Notwithstanding these limitations, participants' descriptions provided first-hand insight into how isiZulu videos supported their learning in economics. Informal mother-tongue explanations allowed them to bypass troublesome English terminology and cross conceptual thresholds to understanding, boosting confidence and motivation. Relevant images enhanced recall, while contemporary examples connected to lived experiences enriched understanding, revealing the practical relevance of economics and fostering a shift from rote-learning to meaningful engagement. Students moved intentionally and strategically between both languages, using isiZulu to reach understanding, and English to articulate it in assessments.

The findings from this study have implications for how higher education institutions develop language policies, especially for those located in country contexts where language debates are politically charged. This particular pedagogical exploration with translanguaging and instructional videos suggests that language choices do not necessarily have to amount to a zero-sum game of exacting language gains and losses. It suggests that university language policies, especially in contexts like South Africa, might well be constructed along lines of flexibility and nuance that an understanding of a translanguaging approach might afford. This then paves the way for creative curriculum, pedagogic and assessment 'experimentation'.

As an exploratory study, the findings make a distinct contribution to advancing knowledge in the field of economic education. With its focus on teaching and learning economics in a particularly fraught language policy context, it draws attention to creative pedagogic contemplations that have the potential to affirm student populations whose home language has been historically marginalised. The study reaffirms the strong and complexly connected relation between language, culture and identity and the positive, productive outcomes that might ensue when this is recognised and enacted with the genuine intent of easing the cognitive load that comes with learning in a language in which one is not fully proficient.

One of the outcomes of an inquiry into this kind of pedagogical exploration is that it reveals the prospects for further research that might advance knowledge in this field (economics education). It opens the way for wider application to higher-level economics programmes, expanded sampling and large-scale quantitative studies that might test impact amongst other research foci. This study, while modest in its scale and contribution, is novel in that it brings into purview the particular language pedagogy experimentation needed in a context with limited resources for expansive and radical higher education language policy change.

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Suriamurthee Maistry
School of Education
University of KwaZulu-Natal
Durban
Maistrys@ukzn.ac.za

Jessica Schroenn Goebel
School of Education
University of KwaZulu-Natal
Durban
schroenn@ukzn.ac.za