Learning about fostering student engagement during online teaching: A collaborative reflective inquiry of two lecturers

TETFLE
TEACHER EDUCATION THROUGH
FLEXIBLE LEARNING IN AFRICA
JOURNAL

Learning about fostering student engagement during online teaching: A collaborative reflective inquiry of two lecturers

Yemisi Deborah Ali

University of Pretoria, South Africa
Email: d.babie1@gmail.com

Hlologelo Climant Khoza

University of Pretoria, South Africa
Email: climant.khoza@up.ac.za
ORCID Identifier: https://orcid.org/0000-0003-0359-6586

TETFLE TEACHER EDUCATION THROUGH
FLEXIBLE LEARNING IN AFRICA
JOURNAL

Abstract

The rapid shift to online teaching and learning during the COVID-19 pandemic required lecturers to consider altering their pedagogical approaches to suit online learning. One of those pedagogical approaches is fostering student engagement. We are two lecturers who collaborated using a self-study methodology to look into our practice to learn about fostering student engagement in an online teaching environment. The theory of experiential learning and collaboration guided this study. Data were collected from our journal entries and collaboration discussions to narrate how our collaborative endeavours enabled us to learn about fostering student engagement in an online teaching platform. While the findings of what we learnt about fostering student engagement when teaching online are not entirely new in literature, we found that our collaborative endeavours helped us deal with our fears and vulnerabilities and notice pertinent aspects of student engagement in online teaching. Therefore, we recommend that lecturers need to embrace collaboration in negotiating new and challenging educational situations.

Keywords: student engagement, self-study, online education, COVID-19, collaboration

Introduction

In 2020 South Africa experienced a wave of COVID-19, as in other parts of the world. Higher education institutions in South Africa had to rapidly shift to fully online teaching and learn to curb the spread of the virus (UNESCO, 2020), which continued up to the year 2022. Such a dramatic change was challenging for most lecturers as none of the educational institutions was prepared for it (Chidi, Khoza & Matlala, 2021). Literature suggests that not only did students experience challenges and dilemmas (see Mpungose, 2020) but lecturers were also anxious about teaching their respective courses online (Landa, Zhou & Marongwe, 2021). We (authors) were not exempted from these challenges and dilemmas. One of the dilemmas we experienced was not being sure whether we could still teach and use the same pedagogies we used during the traditional face-to-face teaching. During COVID-19, we both had to teach our science education modules to pre-service teachers. We were concerned about teaching pedagogy online since we had not been exposed to it before. Amongst other things, one of our pedagogical concerns was how we foster student engagement in the online teaching platform. We saw this as a problem particularly as science lecturers. This is because there is enough evidence that when students are engaged, they tend to make meaning of the science concepts better (see for example, Hymers & Newton, 2019; Khoza & Nyamupangedengu, 2018). However, we had not learnt how this can be done in an online teaching and learning environment. Intending to help each other deal with this pedagogical dilemma of fostering student engagement, we collaborated and embarked as two science lecturers. In this paper, we report on the insights from this collaborative endeavour. We sought to understand how our collaboration, as reflective scholars, can help us learn about fostering student engagement when teaching online. We mainly address the following research question: *In what ways do our continuous collaborative endeavours during the COVID-19 pandemic help us learn about fostering student engagement when teaching online?* We expect that the answer to this question will contribute to understand how collaboration between lecturers can assist in tackling pedagogical issues, especially during educational changes like moving from face-to-face to online teaching.

Literature Review

Online teaching and learning

In literature there have been arguments about whether online teaching is synonymous with distance education. According to Traxler (2018), an online space could be assumed to be one of the instructional delivery channels for distance education. Attempts have been made by various researchers like Xu and Xu (2019) to differentiate between distance education and online teaching. To Xu and Xu (2019), distance education is synonymous with a correspondence educational system in which learning materials are delivered to students by post in the past but now through online methods. Their reasoning stems from the fact that distance education has existed for quite some time. However, the advent and ubiquity of technology are fast changing the face of distance education. These technologies have made possible synchronous and asynchronous modes of teaching and learning in distance education. As such, authors like Roberts (2019) consider online learning a newer version of distance education. In this study we view online teaching as a distance education component. Therefore, the pedagogical implications of online teaching are relevant for distance education.

Online instruction has gained attention over the years due to technological advancements and access to higher education demands in South Africa (see Letseka, Letseka & Pitsoe, 2018) and recently due to the COVID-19 pandemic that has affected most parts of the world (Chidi *et al.*, 2021). Of particular interest to this study is the rapid shift to online teaching due this pandemic. Online teaching is differentiated into two modes: synchronous and asynchronous. In synchronous teaching, students attend the lectures virtually and have real-time interactions via an online platform, usually through a university's learning management system (LMS) – Blackboard. Asynchronous teaching means students access the learning materials, including pre-recorded lectures, at their own time and pace (Fernandez *et al.*, 2022). Teaching in the two modes placed a demand on the readjustment of pedagogies. Lecturers were required to identify themselves as online lecturers and develop a particular mindset to effectively teach their modules (Chidi *et al.*, 2021). This adaptation first involved an 'immediate' change of pedagogies, student tasks, and assessments that align with the online teaching demands. In our case, what became the most important adjustment was to think about how to foster student engagement.

Student engagement

Student engagement can be grouped into three categories: student–student engagement, student–lecturer engagement, and student–content engagement (Bolliger & Martin, 2018). Student-student engagement is explained by the ability of students to work collaboratively and exchange ideas regarding the content they are learning (Leslie, 2019). In an online teaching environment students can interact on a discussion board or during teaching and learning in synchronous sessions. A study by Banna, Lin, Stewart, and Fialkowski (2015) indicates that chat sessions and group assignments have increased student-student engagement in online teaching contexts. This suggests that student-student engagement can also take place beyond synchronous sessions. The lecturer's involvement here is essential as they must design tasks that could lead to student-student engagement, as Leslie (2019) argues. Such tasks require a high level of cognitive engagement so that students can then share their thinking and collaborate on a specific activity.

Student-lecturer engagement focuses on how the students, as a group or individuals, interact with the lecturer (Bolliger & Martin, 2018). This kind of engagement can take place during both synchronous and asynchronous sessions. In synchronous sessions the interaction is influenced by how the lecturer facilitates classroom talk, just like during face-to-face teaching. That is the verbal communication between the lecturer and the students through asking and responding to questions (Khoza & Nyamupangendegu, 2018). However, the way the lecturer communicates with students on an online platform may reveal different dynamics. In asynchronous settings, responding to student questions via emails and engaging in discussion forums is also part of student–instructor engagement. Alzahrani (2017) discovered that an online discussion forum encourages student collaboration and engagement. In this study we contend that engagement depends on the opportunities the lecturer provides—for example, providing students with authentic assessment tasks that they need to do collaboratively. Wu (2019) concurs that this engagement category leads to high student achievement because the lecturer would drive the interaction in a direction that aligns with the learning outcome.

Student-content engagement is defined by how students engage and make sense of the content provided to them (Bolliger & Martin, 2018). In this case the content Biology, usually in the form of learning material. During synchronous sessions, students can engage with the content by reading from a PowerPoint presentation or

any material. In the asynchronous content delivery method, students engage with the posted material, like narrated PowerPoint presentations and readings. This is essential in online learning for students to learn at their own pace and fosters self-directed learning in students (Rashid & Asgar, 2016). As such, the lecturer should present well-thought material that allows students to learn (Stadler & O'Reilly, 2021).

Experiential learning and collaboration as our conceptual framework

This study is underpinned by Kolb's (1984) theory of experiential learning and the notion of collaborative learning. We considered learning about fostering engagement in an online teaching environment as an experiential and collaborative endeavour. Kolb (1984:41) defined learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience". Grasping experience is defined by the first two stages of learning: concrete experience and abstract conceptualisation (Kolb, 1984). In the experience the individual is exposed to complex situations that count as information. In our case, these complex situations entails learning how to foster student engagement in an online teaching mode. In abstract conceptualisation the individual must make meaning out of these experiences by reflecting and organizing the information (Kemp, Goodman & Tenenbaum, 2010).

In this study, these two processes of grasping and transforming experience involved our attempts to gather information and plan for teaching our modules in ways that can foster student engagement. The last two processes, reflective observation and active experimentation, are about transforming and applying the knowledge in the context. Experience is transformed through reflective and active experimentation because experiences shape one's learning. Although the four processes are cyclic in Kolb's (1984) model, we perceived them as interrelated. For example, we would abstractly conceptualise ways of fostering student engagement while engaged in active transformation. For example, putting some strategies to foster engagement in practice while thinking of how we can collaboratively improve these. As such, we iteratively moved within these stages. The inter-relationship between these four stages is about acquisition and transformation as an individual responds to what is observed or experienced (Kayes, 2002). The acquisition and transformation of our experiences

about fostering student engagement were collaborative and reflective endeavours.

It is difficult to define the notion of collaboration due to its fluid nature in different contexts (Inchaouh & Tchaïcha, 2020). According to Inchaouh and Tchaïcha (2020), collaboration is a social interaction amongst students that facilitates shared meaning-making and the construction of new knowledge. In teaching, collaboration involves reflecting and learning together and from one another. As a result, the parties gain knowledge about shared practice or concern (O'Dwyer, Bowles & Ní Chróinin, 2019), which is about fostering student engagement in an online teaching environment. As Loughran (2006) points out, "sharing with and learning from one another offers meaningful ways of framing and reframing existing practice" (p. 57); we worked jointly while providing a space for one another to reflect and understand student engagement when teaching online.

Research design and methodology

Narrative self-study
Using a self-study methodological approach in qualitative research is prominent in improving practice and enhancing professional development. We embarked on self-study research to gain a new understanding from our practice of how student engagement can be fostered in an online teaching environment. According to Samaras and Freese (2006), self-study is a self-initiated methodology focusing on understanding practice. In other words, it evokes the reflection of individuals on their practice. Self-study can take a narrative approach to express teaching experiences allowing the researcher to construct meaning within the self in context (Akinbode, 2013). In narrative research, people organise their experiences and tell a worthwhile story (Connelly & Clandinin, 1990) while immersing themselves in their work (Kitchen, 2016). We take Kitchen's (2016) view that re-telling the stories is a personal, multidimensional and multi-layered process as one thinks of the past, present, and future. As such, in this study, we researched our practice to re-tell the story of our learning in terms of fostering student engagement. Working with one another collaboratively and as critical friends (see Samaras & Freese, 2006), we both thoroughly reflected on our practice, individually and collaboratively, thus, co-constructing knowledge from our experiences.

Participants and context of the study

In self-study, the main participant is the researcher (see Hauge, 2021). Since this study was collaborative, we (Deborah and Climant) were the main participants. Although the primary focus of the study was on us, the students we were teaching became participants by being in our lectures. Deborah was teaching third-year Methodology of Biology module to 60 students, and Climant taught a third year Biology education module to 22 pre-service teachers at one of the South African Universities. In the institution a semester comprises 14 teaching weeks. Therefore, although we were teaching different modules, we would attend each other's synchronous sessions and also have access to each other's modules on the LMS.

Data generation and analysis

In self-study, data generation and analysis happen concurrently in an iterative manner. Data were generated mainly from documentation of our online teaching experiences and collaborative meetings. We each kept a reflective journal to record our thoughts and ideas about teaching our modules online. Journaling began during our planning phase, which took fourteen weeks. Throughout the semester we would regularly meet to discuss our thoughts and experiences on online teaching. Before each meeting, we would swap our journal entries and ask each other questions for further thinking and reflection. These questions and comments were the basis of our discussions. The meetings were audio-recorded and transcribed during analysis. However, after each meeting each one of us would go and reflect on the discussion. The other data included our teaching documents like the study guide, assessment documents like assignments and worksheets, and PowerPoint presentations. Our experiences of working with these documents were recorded in our journal. Although we began making sense of the data as the study commenced, comprehensive data analysis was done after the teaching semester by following the steps below.

Step 1: Dividing our journals and discussions into stages. In this step, we divided our journal entries into three stages. The first stage included all the entries and discussions completed before the commencement of teaching—during the planning of our modules. The second stage comprised all the entries done during the actual teaching, and the third stage the entries and discussions we had after the teaching phase. Table 1 shows the number of journal entries and discussions each stage yielded.

Table 1: Journal entries and discussions yielded throughout the study			
Stage	**Journal entries**		**Discussions**
	Deborah	**Climant**	
1. Planning for our modules	6	4	3
2. During the actual online teaching	13	18	6
3. Post teaching	2	2	2

As can be seen in Table 1, most of our journal entries and discussions were yielded during the teaching. This is because we would reflect mainly after conducting a synchronous lecture or as we created pre-recorded lectures. We only met twice post teaching to consolidate our reflections. The focus of these discussions was about our experiences of fostering student engagement in our modules.

Step 2: Coding our journal entries. We coded our journal entries using inductive and deductive approaches, and considered analysis of narratives (see Polkinghorne, 1989). We focused on student engagement and the issues involving this phenomenon. The literature review informed the deductive coding about the three categories of student engagement. We then met, swapped our narratives, and discussed our codes. The purpose of swapping and discussing our codes was to improve the validity of our coding process while acting as critical friends to each other. The discussion led to further analysis where we looked for commonalities in our narratives regarding what we learned about student engagement. These differences and commonalities became the basis of our discussions.

Step 3: Marking points of interest in the discussion transcripts and inductively coding these points. The goal here was to understand how our collaboration led to our understanding of student engagement in an online teaching environment. Table 2 shows an example of coding from our discussion from stage 1 discussion 1.

Table 2: An example of how we coded our discussions	
Excerpt from the discussion	**Allocated code**
Deborah: Sincerely, I am unprepared for the online teaching.	Explicit realisation of unpreparedness.
Climant: So, what did you do to be prepared?	
Deborah: My first thought is that all my learning and instructional methods have to be adapted.	*Deborah*'s first thought of preparing for online teaching.
Climant: And any ideas on how you would like to adopt them?	
Deborah: I have some ideas, but my concern is how and, of course, if they will work out.	*Deborah* expressing concerns and fears.
Climant: What exactly are these methods and your concerns? I mean, I also have some concerns too.	
Deborah: Well, I don't know if my methods will work, like I was used to seeing them [the students] and hearing their voices as we talk.	*Climant* expresses concerns and fears.
Climant: True, I agree with you. Now the issue is if we will be getting the same energy I had in face to face from my students	

As seen in Table 2, the codes emerged from the data in trying to understand how our collaborative efforts helped us learn about student engagement in an online teaching environment. In the next section, we narrate and discuss the findings from this analysis.

Ethical consideration
Although the data used in this study emanates from our reflections on our teaching,

ethical clearance was granted by the University Of Pretoria, Faculty of Education Ethics Committee.

Findings and discussion

Our continuous collaborative endeavors helped us be aware of online teaching and learning as a mode of content delivery, thus shaping how we plan for our modules. Second, through our collaboration we dealt with our fears and vulnerabilities while experimenting with new things online. Third, by reading each other's reflective journals we noticed pertinent features of student engagement, thus strengthening what we learned about student engagement. These aspects are interrelated. For example, as we realised online teaching and learning was a new mode of delivery, we also noticed pertinent aspects of student engagement while helping each other deal with our fears and vulnerabilities. We, therefore, narrate these findings below.

Our first point of departure from our orientation of traditional face-to-face teaching was helping each other to realise and be aware that we are entering a new online teaching mode. This emerged during our planning, which is taken as abstract conceptualisation (Kolb, 1984). As Kumm, Harmon, Evans, Plunkett, and Widuch (2019) argued, strategic mapping out of the curriculum and instructional tools can be enhanced by embarking on collaborative efforts of lecturers. The example below speaks to designing instructional material in ways that would foster student engagement. In other words, it is about learning that how we used to construct material during face-to-face teaching may no longer be efficient in online teaching.

> **Deborah:** Would it not be appropriate that we change our teaching materials to ones that fit the online pedagogy? There may be the need to adapt the study guide as well.
>
> **Climant:** The department requires a study guide, so I want to just edit last year's one and send to our departmental administrator. I feel like there is no need to have many things except the module outline and assessment information.

The above quotations from our journals reveal different viewpoints about online teaching. Deborah had already begun to understand that online teaching differs from what we were used to. She had also started to imagine the complexities that she may be confronted with in terms "keeping students on the work", which is an aspect of

student engagement (Leslie, 2019). On the contrary, Climant was still holding on to how he did things in the past. Our first discussion became a catalyst for helping each other understand the demands of the new terrain.

> **Deborah:** I see that you want to take last year's study guide and upload it to the system for the students.
>
> **Climant:** Yes, nothing has changed mos? I am still teaching the content that was taught last year.
>
> **Deborah:** True. I am just thinking of other parts of the study guide. Will it be the same?
>
> **Climant:** Other parts like what?
>
> **Deborah:** Or maybe I am having a wrong impression of what the study guide is supposed to do, but I have a different view that I can be used to lure students into the learning.
>
> **Climant:** Ohhhh…so, the issue here is that students may not read the study guide if it is just the routine information?
>
> **Deborah:** Yes, that also, and it has to be appealing to lure students into the module.

In contrast to Climant's perception, Deborah seems to have thought that the study guide is an important tool to foster engagement, as acknowledged by Hudson, Ormsbee, and Myles (1994:102). She noted the significance of thinking through what is put in the study guide and how it is arranged as she stated that "the study guide to some extent, can have some explanation of the content". Through our continued collaboration endeavours and conversations, we ended up together detailing our study guides and thinking about different ways of presenting the contents so that the students can find the information they want at any time and have multiple presentations.

Due to realising that we were entering a new mode of teaching (Kumm *et al.*, 2019), and the discussions, our objective then became to transform the study guide into a tool for student engagement. This is because Barkley and Major (2020) acknowledge the study guide as the main document to involve students in the teaching and learning process. As we were thinking about it, we ended up including a concept map that summarises how the content and concepts (see Morgan, Eddy & Coffey, 2022) that we have selected for the module are interrelated and fit into the school biology curriculum. We also added visual representations for accessibility of the information that in turn enable learning. Climant realised that the study guide is one of the tools

for engagement that is usually taken for granted.

In one of our discussions during the teaching stage we reflected on implementing our study guides and how the students received them.

> **Deborah:** You know, in my first lecture I was surprised to see that two of my students asked me about the study guide.
>
> **Climant:** Asking you what questions because they usually ask about assessment things.
>
> **Deborah:** In fact, one of them spotted that she did not understand the concept map.
>
> **Climant:** Did you ask them about the map?
>
> **Deborah:** No, I didn't. She just raised it, and the other student supported her …
>
> **Climant:** So what did you do?
>
> **Deborah:** We discussed the map for about 10 minutes and other students joined.
>
> **Climant:** Ohhhh, for me, I projected the map and we talked about it as an overall structure of the course before commencing with the lecture.
>
> **Deborah:** I think maybe I should have also done that before starting with the lecture.
>
> **Climant:** But in your case, it sparked a discussion, so what one can do in the future is to have questions for them then have a whole class discussion.

In the excerpt above, Deborah reveals that her students had engaged with the contents of the study guide before the first lecture. Hence, they asked questions during the lecture. This resulted in a discussion between Deborah and the students and among the students themselves (Martin & Bolliger, 2018). However, although the study guide may have engaged the students out of the synchronous sessions, Climant took a different approach to discuss what was in the study guide without being prompted by students' questions. At the end of the discussion, we both came to realise that the way we had structured our study guides worked, and our different approaches to bringing student engagement with the study into the synchronous sessions. Giesbers, Rienties, Tempelaar, and Gijselaers (2014) argue that the interplay between synchronous and asynchronous learning sessions would greatly impact the effectiveness of student engagement. This was made possible through our intentional and deliberate reflections while listening to each other's stories of what transpired in

the lectures, which Kumm *et al.* (2019) state can lead to improved practice.

One of the important aspects of online learning and distance education is that students need access to the learning material at their convenience. This is important to deal with the socioeconomic issues like lack of connection at certain times (Letseka *et al.*, 2018). Contrary to face-to-face traditional teaching where we would have real-time interactions, during our planning we realized that we needed to establish our presence for student engagement even outside synchronous sessions. This example manifested during our third meeting in stage 1 when Deborah read Climant's reflective journal that he is planning to use narrated PowerPoint often.

> **Deborah:** I never knew about narrated PowerPoint before now and it worries me, seeing that we have limited time in our synchronous sessions to explain all the 'nitty-gritty' of the topics.
>
> **Climant:** Really? But now you know…what worries you?
>
> **Deborah:** My problem is how to do it.

Deborah exposed her vulnerability by saying she did not know how to do the narrated PowerPoint. This concurs with the finding by Hordvik *et al.* (2021), realizing that their collaboration led to others revealing their fears and seeking assistance in their work. At this point we have established enough trust between ourselves to explicitly voice our struggles and to seek help. As noted by O'Dwyer (2018), trust is a big issue when working collaboratively to better each other's practice. Meanwhile, Climant only knew how to make narrated slides, but not how to construct engaging narrated slides. After spending around 15 minutes and showing each other how to do narrated slides, the following discussion took place:

> **Climant:** It seems like you can play around with these features like pausing, deleting, and re-recording.
>
> **Deborah:** Yes, I get that. So here, one just talks throughout and then posts the narrative on blackboard for students to listen to?
>
> **Climant:** Yeah, but it might depend on how you want to do it. I mean making it more interactive than just having students listening to it.
>
> **Deborah:** That is actually my point so that students do not get bored. How can I make it engaging?

Deborah learned how to make a narrated PowerPoint presentation, but later noticed that the way it was made would not foster student engagement. She then stated, "students would passively listen to the recorded slides". Climant also expressed the

same sentiments. Collectively we moved from the issue of how to make a narrated PowerPoint presentation to the dilemma of how to construct the PowerPoint to allow student–content engagement. The issue of constructing engaging PowerPoint presentations is also supported by literature (see Bolliger & Martin, 2018). Through continuous discussions during our abstract conceptualisation (Kayes, 2002) and showing each other how to do things, we learned that to foster student engagement with the narrated slides in our absence, the presentation has to reveal thought-provoking content and questions. Thought-provoking questions are essential because they reveal students' deep thinking.

We then tried what we had conceptualised through active experimentation and reflective observation (Kolb, 1984). In terms of thought-provoking questions, we noticed that these would need to be authentic questions that relate to our students' everyday lives. Students tend to engage with issues that relate to their everyday lives (Ali & De Jager, 2020). For example, in Climant's synchronous lesson following the topic of genetics, students brought to the session a question that Climant had posed in the narrated slides. This was evidence that the students engaged with the question, otherwise they would not have initiated a discussion during the synchronous session. Again, we learned this lesson through our prior reflective exercises during planning. In their study, Girvan, Conneely, and Tangney (2016) found that collaboration of teachers led to professional development and significant pedagogical changes. In our case, this collaborative abstract conceptualisation led to a mutual understanding of how we can foster student engagement when teaching online.

Through active experimentation, Deborah noticed that not only asking thought-provoking questions and providing relevant content can lead to student content—she stated the following in her journal:

> As a biology teacher, I understand that the use of diagrams is a great learning tool, especially for students with visual learning preferences. It gets the student engaged with the content. Sometimes I use the interactive diagram as a kind of assessment of ongoing learning process of the student.

Given the nature of our subject, that it is all about structure and function, diagrams became the main sub-tools through which we engaged students—for example, presenting an unlabelled structure of a male reproductive system. Owusu (2020) explains that it is easier for the mind to process information presented in multiple ways, such as the audiovisual in the slides. In addition, Deborah states that "it really

helped me to maximise the time we had for synchronous sessions, since the students have already engaged with the content outside the session". Her discovery seems to agree with Walker (2007) that narrated PowerPoint could serve as an interactive self-learning tool. This realisation led us to explore ways to link the narrated slides to our synchronous sessions. Climant shared the following in his reflective journal: "How do I entice my students to listen and interact with the narrated slides I make? After all, they have to gain from these narrated slides." In his first attempt Climant posed questions from the previously narrated slides, but only a few would engage with those questions. Revisiting her experiences that seemed to relate to this issue, Deborah wrote:

> My experience in the lecture showed me that only a few have listened to the narrated PowerPoint. I planned that I would use some of what I covered to facilitate the discussion in the live session. There was almost nothing I could do at that point.

Deborah sensed that most of her students had not listened to the recording while she had planned the synchronous session as an extension of the narrated PowerPoint. Climant then shared how he dealt with this in the first half of the course:

> It is a lot of work but I ended up 'cutting' the recording into pieces and then made them listen to that section in the synchronous lecture. This seemed to have sparked the interaction as I asked questions based on what they just heard because some students began asking in the chatbox which recording it is. I was thrilled to observe how much engagement this can create.

The fact that Climant shared his experience with Deborah helped them learn that engagement can be promoted by making explicit links between the narrated PowerPoint presentation and synchronous lectures. The result of our efforts resonates with the study conducted by Nami, Marandi, and Sotoudehnama (2018) where interaction during collaboration fosters the co-construction of knowledge. When Deborah tried this strategy, it made a difference as she narrated, "when I played those parts, they were suddenly interested, and I later found out that the number of views on the narrated slides had increased". This confirms Climant's insights about the move from engagement with the content (narrated PowerPoint presentation) and discussions during the synchronous sessions.

Given that we were entering a new mode of teaching (as argued above), one of the concerns and fears that emerged from our journal entries was the issue of navigating through the synchronous session in ways that allow student engagement. Our data

reveal how we discovered a way of breaking student silence during the synchronous session. In one of her journal entries Deborah expressed her surprise when no one in the class was willing to answer even the simplest question. This is not surprising as Torrisi-Steele (2022) notes that it becomes more difficult to foster engagement in an online environment, especially where body language and facial expressions are not visible. Deborah expressed:

> To me, it was a simple question considering the fact that I had sent the slides earlier and the topic has been taught previously… I was shocked!

She went on to say that although the class was well attended, the students were silent as though they were not there, and "I was not sure if they were thinking about my simple question or not". Deborah realized that students were not responding to her questions when they were verbally asked during the synchronous session. She tried probing the students, thinking they might not understand the question, but this was not the case. In contrast, during a discussion in the second stage, Climant reflected on how he experienced student silence in his teaching.

> Some of my students preferred putting the answers in the chatbox. It was only 2 students that were comfortable with verbalising their responses. It seemed like a dream to me that the students do not want to be heard but after some encouragement, more students started to put their responses in the chatbox. Well, for me, I think they engaged in some way because I also provided them with feedback.

Comparing what Deborah wrote in her reflective journal and what Climant shared during the discussion, Deborah raised a struggle of getting students to talk in synchronous sessions. Considering that she had asked what she considers a simple question, the assumption is that students could have answered. In contrast, Climant had already experienced the struggle and found ways of dealing with it. Collectively we came to realise that the students' silence that Deborah was observing may not have meant silence, but rather some kind of cognitive engagement. Cognitive engagement is described as students thinking about the content without vocalising their thoughts (see Khoza & Nyamupangedengu, 2018). Cognitive engagement in this case was unleashed while encouraging students to post their responses to the questions in the chatbox (as discovered by Climant). However, Climant did not notice that this strategy could have made a difference in terms of student engagement until Deborah tried it. It worked—some of the students that were verbally silent during the lectures could still participate in the chatbox and respond to contributions from those that

are verbally active, thus resulting in student-student engagement and instant feedback from the lecturer, which tends to improve students' achievement (Law, Tobin, Wilson, & Brandon, 2020). This illustrates that collectively we understood that a chatbox in Bb collaborates to engage students. However, as much as the chatbox engaged students, it also posed some potential problems regarding its facilitation.

It is worth noting that although the chatbox was an enabler of non-verbal engagement, we both realized that this could be a distractor. A limitation of the chatbox is that all the students in the session may not get engaged in one way or the other. A typical example is one of Climant's lectures where he had to navigate between slides, chatbox, and students' voices. Climant shared in his reflective journal:

> I am so overwhelmed by the way in which my students want to do things. Now that I have created a space for them to interact, some only want to talk while some only want to post in the chatbox and I also have to focus on my slides.

In our discussion, we engaged on this issue and noticed that Climant's reflection reveals the complexity of a synchronous session, especially when it must engage students. In particular, this entry shows how a chatbox can distract student engagement. Finally, Climant reflected on one of his lectures about meiosis:

> I like using the chatbox but it does not usually work for me, especially if some of my students are raising their hands…then I would have to leave the hands and go check the chatbox. It becomes a bit chaotic.

The extract above shows that Climant saw the chatbox as a distractor. Climant's experience overlapped and had similarities with what Deborah had shared in her reflections. Deborah experienced the following:

> Often, I get confused about which response to answer first (verbal/chatbox), Occasionally, I had to take a break to look through the chatbox in order to respond to the students' answers to my question. This at times makes some students become disengaged.

We both had similar experiences regarding the navigation between the three spaces, yet they allow for student engagement. It is through sharing such experiences that we learned about fostering student engagement. As Deborah notes, "I would even though the engagement was intensive, I would continuously lose focus of where I was in my sequencing of ideas." Deborah then implemented what we call taking turns. Taking turns, in this case, meant allocating time based on a single idea to engage with the chatbox and invite those that want to share their voices.

Conclusion

This self-study aimed to investigate how our collaboration endeavours help us learn about student engagement when teaching online. We learned two main aspects about fostering engagement when teaching online. The first is that student engagement starts from the planning stage, which includes the preparation of, for example, the study guide and PowerPoint presentations. How these materials are prepared has a lasting impact on how much student engagement will be achieved. The second is that synchronous and asynchronous modes of online teaching are inseparably working together. Although both the modes have their limitations they complement each other. The discovery of the collaboration tool's complementary nature on blackboard and discussion board where narrated PowerPoints were used to achieve effective student engagement was noteworthy.

We acknowledge the limitations of this study—namely, that it was just about two lecturers and that what we learned about fostering engagement may not be new. However, we argue that our collaborative endeavours and iterative discussions helped us to notice and be aware that we are operating with a new understanding of online teaching. We contend that if each of us was working in silos, we would not have come to understand and resolve some of the issues and dilemmas we encountered during the shift to online teaching. While experimenting with new pedagogies, collaboration is invaluable when navigating new modes of teaching, in this case, a shift from face-to-face to online teaching.

Implications for distance education

Since online teaching and learning is a newer version of distance education (see Roberts, 2019) the findings in this study have implications for distance education. The significance is that distance education lecturers can collaborate through reflection to understand their practice, especially learning about certain pedagogies like student engagement. Distance education demands meticulous planning and well-considered learning materials to achieve a high-quality education (Gujjar & Malik, 2007). This may be daunting for many teachers when working individually without collaboration with a critical colleague as noted by O'Dwyer et al. (2019) who argue that collaborative learning in the workplace can enhance individual and joint teacher practice. Establishing a support structure with colleagues that share similar concerns

through collaborative effort would foster a sustainable shared learning experience within the distance learning milieu.

Acknowledgements

References

Ali, Y.D. & De Jager, L.D. 2020. Linking Life Sciences concepts with everyday life: A learners' perspective. WEI International Academic Conference on Education, Teaching, and Learning. Washington-Boston. ISSN 2167-3179

Akinbode, A. 2013. Teaching as lived experience: The value of exploring the hidden and emotional side of teaching through reflective narratives. *Studying Teacher Education*, 9,1: 62-73.

Alzahrani, MG. 2017. The Effect of Using Online Discussion Forums on Students' Learning. *Turkish Online Journal of Educational Technology*, 16,1:164-176.

Banna, J. Lin, M FG. Stewart, M & Fialkowski, MK. 2015. Interaction matters: Strategies to promote engaged learning in an online introductory nutrition course. *Journal of online learning and teaching*, 11,2: 249-261.

Barkley, E. F., & Major, C. H. (2020). *Student engagement techniques: A handbook for college faculty*. John Wiley & Sons.

Chidi, BL. Khoza, HC & Matlala, LS. 2021. Do we need 'triggers' to embrace online teaching and learning in higher education? A reflection paper. *African Perspectives of Research in Teaching and Learning*, 5: 20-26.

Connelly, FM & Clandinin, DJ. 1990. Stories of experience and narrative inquiry. *Educational researcher*, 19,5: 2-14.

Giesbers, B. Rienties, B. Tempelaar, D & Gijselaers, W. 2014. A dynamic analysis of the interplay between asynchronous and synchronous communication in online learning: The impact of motivation. *Journal of computer assisted learning*, 30,1: 30-50.

Girvan, C. Conneely, C & Tangney, B. 2016. Extending experiential learning in teacher professional development. *Teaching and teacher education*, 58: 129-139.

Gujjar, AA & Malik, MA. 2007. Preparation of instructional material for distance

teacher education. *Turkish Online Journal of Distance Education,* 8,1: 55–63.

Hauge, K. 2021. Self-study research: Challenges and opportunities in teacher education. *Teacher Education in the 21st Century-Emerging Skills for a Changing World*.

Hordvik, M. Fletcher, T. Haugen, A.L. Møller, L & Engebretsen, B. 2021. Using collaborative self-study and rhizomatics to explore the ongoing nature of becoming teacher educators. *Teaching and Teacher Education*, 101: 103318.

Hudson, F. Ormsbee, CK & Myles, BS. 1994. Study guides: An instructional tool for equalizing student achievement. *Intervention in School and Clinic*, 30,2: 99–102.

Hymers, D & Newton, G. 2019. Investigating Student Engagement in First-Year Biology Education: A Comparison of Major and Non-Major Perception of Engagement across Different Active Learning Activities. *Canadian Journal for the Scholarship of Teaching and Learning*, 10,1: 1-22.

Inchaouh, G., & Tchaïcha, J. D. (2020). Online collaboration and experiential learning in higher education: Designing an online cross-border collaborative project for business students. *International Journal of Technology,* Knowledge and Society, 16(4), 37.

Kayes, D.C., 2002. Experiential learning and its critics: Preserving the role of experience in management learning and education. *Academy of Management Learning & Education*, 1(2), pp.137-149.

Kemp, C., Goodman, N.D. and Tenenbaum, J.B., 2010. Learning to learn causal models. *Cognitive Science*, 34(7), 1185-1243.

Khoza, HC & Nyamupangedengu, E. 2018. Prompts used by biology lecturers in large lecture group settings to promote student interaction. *African Journal of Research in Mathematics, Science and Technology Education*, 22,3: 386–395.

Kitchen, J. 2016. Looking back on 15 years of relational teacher education: A narrative self-study. In Williams, J & Hayler, M (Eds.), *Professional learning through transitions and transformations*. Cham: Springer.

Kolb, D.A. (1984) Experiential Learning: Experience as the Source of Learning and Development. Prentice-Hall, Inc. Englewood Cliffs, NJ.

Kumm, BE. Harmon, LK. Evans, K. Plunkett, D & Widuch, D. 2019. The benefits of collaboration: From curriculum mapping to a community of practice. *SCHOLE: A Journal of Leisure Studies and Recreation Education*, 34,2: 71-83.

Landa, N. Zhou, S & Marongwe, N. 2021. Education in emergencies: Lessons from COVID-19 in South Africa. *International Review of Education*, 67,1: 167-183.

Law, YK. Tobin, RW. Wilson, NR & Brandon, LA. 2020. Improving student success by incorporating instant-feedback questions and increased proctoring in online science and mathematics courses. *Journal of Teaching and Learning with Technology*, 9,1: 64-78.

Leslie, HJ. 2019. Trifecta of student engagement. *Journal of Research in Innovative Teaching & Learning*, 13,2: 149-173.

Letseka, M. Letseka, MM & Pitsoe, V. 2018. The challenges of e-Learning in South Africa. *Trends in E-learning*, 8: 121-138.

Loughran, J., 2006. *Developing a pedagogy of teacher education: Understanding teaching and learning about teaching*. Taylor & Francis.

Martin, F & Bolliger, DU. 2018. Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, 22,1: 205-222.

Morgan, JD. Eddy, B & Coffey, JW. 2022. Activating student engagement with concept mapping: A Web GIS case study. *Journal of Geography in Higher Education*, 46,1: 128-144.

Mpungose, CB. 2020. Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. *Humanities and Social Sciences Communications*, 7,1: 1-9.

Nami, F. Marandi, SS & Sotoudehnama, E. 2018. Interaction in a discussion list: An exploration of cognitive, social, and teaching presence in teachers' online collaborations. *ReCALL*, 30,3: 375-398.

O'Dwyer, A. Bowles, R & Ní Chróinin, D. 2019. Supporting collaborative self-study: An exploration of internal and external critical friendships. *Studying Teacher Education*, 15,2: 139-159.

Owusu, A., 2020. The impact of audio-visual technologies on university teaching and learning in a developing economy. *South African Journal of Information Management*, 22(1): 1-9.

Polkinghorne, D.E., 1989. Phenomenological research methods. *Existential-phenomenological perspectives in psychology: Exploring the breadth of human experience*, 41-60.

Rashid, T. and Asghar, H.M., 2016. Technology use, self-directed learning, student engagement and academic performance: Examining the interrelations. *Computers in Human Behavior*, 63, 604-612.

Roberts, JJ. 2019. Online learning as a form of distance education: Linking formation learning in theology to the theories of distance education. *HTS: Theological Studies*, 75,1: 1-9.

Samaras, AP & Freese, A. 2006. *Self-study of teaching practices*: Peter Lang publishing, Inc.

Stadler, D., & O'Reilly, M. A. (2021). Student engagement with online course content at a two-year college. *Journal of Library & Information Services in Distance Learning*, 15(3), 170-186.

Torrisi-Steele, G. 2022. "I Do Better, Feel Less Stress and Am Happier"—A Humanist and Affective Perspective on Student Engagement in an Online Class. *Issues in Informing Science and Information Technology*, 19: 121-133.

Traxler, J. 2018. Distance learning—Predictions and possibilities. *Education sciences,* 8,1: 35-48.

UNESCO 2020. *COVID-19 Educational Disruption and Response*. Available at: https://en.unesco.org/covid19/educationresponse. Accessed on 2 August 2022

Walker, L. 2007. Narrated PowerPoint as a Self-Learning Resource. *International Journal of Learning*, 13,12: 1-5.

Wu, Z. (2019). Academic motivation, engagement, and achievement among *college students. College Student Journal*, 53(1), 99-112.

Xu, D & Xu, Y. 2019. *The Promises and Limits of Online Higher Education: Understanding How Distance Education Affects Access, Cost, and Quality.* American Enterprise Institute. Available at: https://files.eric.ed.gov/fulltext/ED596296.pdf. Accessed on 2 August 2022.