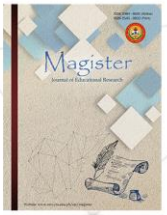

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RESEARCH ARTICLE

Exploring the voices of geography teachers in the teaching of climate change in Eswatini

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Abstract

Teaching climate change has become highly complex for most geography teachers in Eswatini. The teachers are confused by the contestation of two giant voices that inform climate change teaching. The two curricular/voices (professional/vertical and societal/horizontal) conflict when teaching climate change, and the battle distracts teachers' actions. This study applied the moments of the currere curriculum model to engage teachers in reflecting and critiquing their climate change teaching practices to instigate the recognition of their voices that would neutralize the conflict of the giant voice that dominates the teaching of climate change. Eight (8) geography teachers were purposively selected from four (4) high schools in Eswatini to participate in this study. Semi-structured interviews and focus group discussions were used for data generation. The study was framed by the qualitative approach under the pragmatic paradigm and adopted the educational design research. Findings revealed that teachers' voices are lacking in climate change teaching. The currere curriculum model was used to sort the tension between the two giant voices and embrace the personal voice, which would manage the tension of voices in climate change lessons. Consequently, the study recommends that teachers apply the strengths of both societal and professional voices to relieve the tension between the two and embrace teachers' voices, which are critical for climate change education.

Keywords: *Climate Change, Curriculum, Professional Voice, Societal Voice, Personal Voice, Currere Curriculum Model*

1. Introduction

Climate change (CC) has impacted human lives globally (Suleiman et al., 2024). This affects food security, water quality, human health, biodiversity, and economic stability. The effects of CC in most countries have led to increased mortality, extreme weather events, and significant agricultural setbacks. Singh and Shindikar (2023) avow that the effects of climate change led to severe disruptions in ecosystems and human societies. King Mswati III acknowledged the gravity of issues resulting from climate change's effects on Eswatini, as emphasized in his speech at the state opening of the Parliament (SONA) in February 2021. In his speech, the king mentioned the prevalent adverse effects of CC in the country, precisely like those witnessed worldwide. He emphasized the need for the government to conduct research and explore potential solutions to tackle these challenges. This was reported in the Eswatini News on Saturday, February 20th, 2021.

Education could be a valuable tool for raising CC awareness in Eswatini. The United Nations (UN) has reiterated that education is essential for mounting adequate response to CC (UNESCO, 2020). This suggests that teachers should know they are responsible for giving learners specific skills and knowledge to foster pro-environmental values and behaviors. To make this possible, it is essential to explore the effectiveness of CC education by exploring the voices of teachers responsible for implementing the curriculum in schools. Having a clear voice in teaching CC is crucial in Eswatini as its teaching currently occurs in a cloud of controversy.

The issue of climate change teaching complexities has caught the attention of several scholars. Bleazby et al. (2023) confirm that despite the scientific consensus, CC teaching continues to be controversial, as attested by male teachers. The controversy consequently worries teachers about accusations arising from all propaganda on climate change teaching. As a result, Bleazby et al. (2023) assert that many teachers use the "teaching the controversy" approach, which allows learners to make up their minds about climate change, which may not be encouraged in the teaching and learning space. Moreover, a study by Murat (2023) revealed that even though most geography teachers recognize CC as a significant issue, they feel inadequately prepared to teach it effectively because of the numerous voices that confuse them. Additionally, a study by Ben Zvi Assaraf et al. (2024) found a consensus among geography teachers on the need for professional development to enhance their teaching capabilities as they teach CC. From the studies

mentioned in the literature, it remains unclear why the teaching of CC is submerged in such controversy. Thus, this study aimed to explore a new dimension of engaging the teachers' voices, which was proposed as a solution to address the challenge teachers face in CC teaching.

1.1 Epistemology and Ontology in Climate Change Content

Knox (2023) and Biri (2022) confirm that the epistemological and ontological stances regarding climate change content are critical. This is because the standpoints are essential in understanding the discourse surrounding the global subject of CC. Epistemologically, the focus is on how climate change knowledge is constructed and communicated, particularly in schools and the context of prevalent climate change debates. Ontologically, this addresses the nature of reality and how climate change challenges our understanding, but there is also a debate as there are many views surrounding CC teaching.

For the epistemological stance, the primary debate that this paper sought to contribute to is the issue of CC content knowledge construction. The general discourse on CC teaching has often neglected to evaluate the reliability of CC content knowledge, which creates different epistemic positions that leave the teacher liberty to choose. However, the teachers' voice is silenced in the curriculum (Biri, 2022; Poole & Hayes, 2023). From the CC ontological standpoint, Knox (2023) admits that there are diverse perspectives brought about by scholars, thus creating an ontological unsettling space for teachers who have to teach CC to learners. Just as this study purposed to explore, while the epistemological focus often emphasizes professional voice knowledge and social voice belief systems on climate change, the ontological perspective challenges such a fundamental understanding of reality, proposing that both stances (professional and societal voices) are essential for a comprehensive approach to CC teaching, this study is a product of this dilemma on the two voices in CC teaching. The study concludes that the teachers' voices are silenced by the dispute between the epistemological and ontological standpoints; the battle between professional and societal voices leaves the teacher in the wilderness on how to teach CC correctly. Most studies on CC teaching have dealt with the controversy of CC and understanding it, Dlamini (2016), ignoring the position of the teacher within the tension of the voices. Thus, this paper aimed to explore how to address the tension for CC teaching to be smooth for the geography teacher in Eswatini.

1.2 Objectives

The research objectives that guided the study were:

a. To identify teachers' voices in teaching climate change in Eswatini.
b. To explore how teachers' voices may influence the teaching of climate change in Eswatini.

The following sections explore literature, understanding the voice in this study, and theorizing on the two giant curriculum voices and the personal voice at the end. Next will be the currere curriculum model, followed by the methodology findings and conclusions at the end.

2. Literature Review

2.1 Understanding of the "Voice" of a Teacher in Climate Change Teaching

The conceptualization of the term voice is varied in the educational landscape. Thus, it is proper to state what, throughout this paper, the term voice refers to. The teachers' voices in this paper refer to the geography teachers' perspectives, experiences, and agency. It is crucial to note that all these elements that describe the teacher's voice are essential for fostering practical CC lessons (Cotton, 2022). Similarly, Khoza (2018) refers to the voice as a specific view or feeling that a teacher articulates through interrogating his/her subconscious thoughts and experiences using the conscious mind. Worth noting in the voice description and what it means in this paper is that, firstly, the voice talks of actions that individuals exhibit. Secondly, it is eminent that the voice is personal as it denotes an individual's feelings that reveal their experiences or thoughts. This suggests that this study, which explored geography teachers' voices in teaching climate change, sought to solicit their individual views, explanations, or meanings on their experiences about CC teaching.

2.2 The Significance of the Teacher's Voice in Teaching Climate Change

The importance of exploring teachers' voices in teaching and learning spaces has been valued by several scholars, such as Khoza (2021) and Dlamini (2022). Accordingly, Shoba (2018) asserts that it is necessary to explore teachers' voices as they offer an opportunity to recognize causal factors of failed or successful curriculum enactment. In essence, the teachers' voice is crucial in understanding "how, what, and why" teachers handle a topic like climate change the way they do in

teaching and learning (Rahimi & Zhang, 2015). Moreover, the teachers' voices enhance the value of teaching and learning about climate change, as geography teachers use their voices to construct and re-construct climate change content (Fomunyam, 2014). This implies that exploring geography teachers' voices may benefit and improve the teaching of a contentious topic like CC. In essence, teachers gain their voices from the curriculum they get exposed to. Historically, this study has had two major curriculum perspectives termed voices: vertical and horizontal. These curricula give teachers voices that summon teachers' actions. The third voice, the personal voice, has been concealed, and it is the main focus of this study. The following discussion gives insights into the nature of each of the three voices.

2.3 Professional Voice in Climate Change Teaching

The teachers' professional voice is informed by teachers' experiences acquired from professional spaces where the strict rules of a specific profession guide actions and habits. According to Khoza (2021) and Waghid and Davids (2016), these stringent rules and procedures are acquired through formal learning and are founded on scientifically researched facts. This indicates that the geography teachers' professional voices are produced from the CC content obtainable from formal sources and learning spaces. Such formal spaces include learning that occurs in schools and or tertiary institutions. Under the professional voice, individuals are forced to follow specific instructions to meet the needs of the discipline, climate change (Khoza, 2021; Khumalo et al., 2023).

Specifically, professional voices are formed from teachers' acquaintance with prescribed climate change content. This content is available in schools and tertiary institutions where learners consume prescribed climate change-researched scientific knowledge (Bernstein, 2006; Tyler, 2013). The given climate change content is also referred to as formal schooled knowledge or powerful knowledge, which is also said to be factual (Hoadley, 2017). Professional voices certainly support the performance curriculum described by Bernstein (2006), which puts specific and particular emphasis on objectives, content, activities, and assessment practices. These concepts anchor the professional voices of geography teachers (Dlamini, 2022; Tyler, 2013).

This performance/vertical/professional voice curriculum is characterized by having universally identified content for every subject; the assessments that learners undertake are summative and concentrate

more on what learners achieve and focus mainly on what is cognitively missing in the learners' responses. Khoza (2016) opines that the professional voice encourages mastering climate change content more than reconstruction and application of climate change knowledge. Fundamentally, teaching follows a climate change curriculum document that is a blueprint that expects teachers to efficiently enact specific content following laid down objectives that guided teachers' activities in class, and at the end, learners had to be given summative evaluation based on international standards (Thijs & van den Akker, 2009; van den Akker, 2013). The professional voice relies on prescribed climate change textbooks, which fail to accommodate constructivist learning driven by a teacher's voice (Morote et al., 2023).

In the context of Eswatini, where this study was done, for a long time, the geography curriculum has been summoned by a professional voice. The curriculum, Ordinary Level (O' Level) driven by London Cambridge, was prescriptive and expected teachers to rely on schooled climate change content without consideration of local or new changes in content. It also expected a teacher to assume the instructor role, which implies that learners were not engaged in climate change knowledge construction. In 2009, the country replaced the prescriptive curriculum with a localized competency-based Eswatini General Certificate in Secondary Education curriculum, which was assumed to be competency/societally inclined. The societal voices curriculum is presented next.

2.4 Societal Voice in Climate Change Teaching

Scholars describe the societal voice in curriculum spaces as the kind of knowledge that is sourced from viewpoints/opinions that are socially initiated (Berkvens et al., 2014; Bernstein, 2006; Khoza, 2016a; Khoza, 2016b; Thijis & van den Akker, 2009; Waghid & Davids, 2016). This means that societal voices align with horizontal knowledge. Horizontal knowledge, as described by Bernstein (2006) and Khoza (2019), is practical or communal knowledge based on learners' information generated from what they hear, see, and experience in their immediate society. This indicates that local and general knowledge on a particular topic, such as climate change, informs and influences societal voices. In the 21st century, media has become one key source of the societal voice. Bleazby et al. (2023) observe that media has exacerbated the challenge of teaching factual climate change content. Media is a powerful societal voice that learners rely upon. Ngubane-Mokiwa and Khoza (2016) and

Dlamini (2018) believe that the general local knowledge that is socially constructed is sufficient to meet the daily needs of geography learners as they learn about climate change.

According to Booyse and Du Plessis (2017), Hoadley (2009), and Elliott and Norris (2012), teaching in the societal voices' spaces should draw from the real-life and local experiences of learners. These experiences provide a strong foundation for learning and building confidence from the known to the unknown. Additionally, societal voices uphold that learning can occur anywhere, including at home and school. As a result, learners have significant control over their learning, with the teacher serving as a facilitator or guide. This means that learners can choose the sequence, selection, and pace of their learning (Mabuza & Khoza, 2019); Makumane, 2023). In the spaces of societal voices, every learner is viewed as competent and capable of achieving outcomes, as their built-in competence is encouraged to emerge (Dlamini, 2018; Hoadley, 2009). From describing climate change content to pedagogy, professional and societal voices clash. This study argues that the rattle between the curricular voices affects climate change teaching. Thus, teachers need to develop personal teachers' voices, which are discussed next.

2.5 Personal Voices in Climate Change Teaching

Personal voices are produced when a teacher combines the strengths of both professional and societal voices. This paper argues that the teacher can apply the currere curriculum theory.

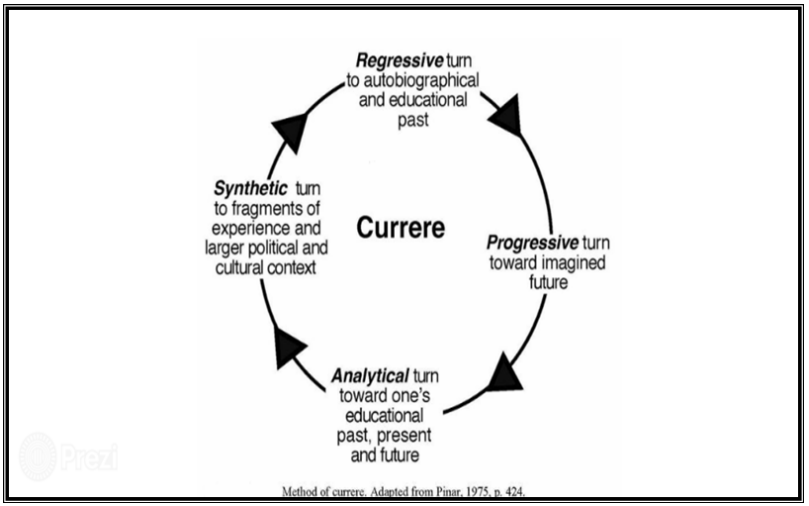
Pinar's "Currere" theory

William F. Pinar (born 1947) is an American scholar and a curriculum theorist. Pinar is credited as one of the scholars who started the reconceptualization of the field of curriculum. He conceives curriculum as educational experiences that are filled with complicated conversations. Through his vast experience in curriculum spaces, Pinar has contributed immensely to curriculum discussions. One of his profound contributions was the coming up with the currere curriculum theory. The currere theory situates the teacher in the center of discussing curriculum issues. In essence, Pinar (2004) believes curriculum is autobiographical. He argues that curriculum should not be about what is to be taught and how it is to be implemented but should also be about teachers understanding themselves. Pinar notes that by applying self-understanding in their work in curriculum practices

and pedagogical approaches, teachers would have specific voices in enacting any curriculum. Self-understanding is made possible by currere since currere affords teachers the chance to become reflexive and, as such, think about themselves and their work, thereby coming up with their voices. As they understand their voice, Pinar (2004) envisages that the teachers' intellectual purpose of the curriculum is made clear as academic freedom is gained. Pinar argues that the curriculum controls usually levied by politicians or/or the state led to the assumption that teachers and professors suffer at the hands of politicians who make commands that limit the academic and intellectual freedom of teachers tasked with enacting the curriculum. Pinar argues that these anti-intellectual tendencies are belittling the teachers, yet academic-intellectual-freedom is essential to the very possibility of education (Pinar, 2004). This illustrates that seeking teachers' voices in the teaching of climate change affords a chance to recognize if the geography teachers have reached academic freedom or if their practice is tied by other factors that limit them from reaching intellectual freedom. Academic freedom is reached when teachers understand themselves. Currere, as a theoretical framework, has the potential of unearthing the personal voices of teachers, which implies that the teachers reach personal intellectual freedom. Currere is grounded in existentialism and psychoanalysis that affords a strategy for self-study (Pinar, 2004). Existentialism, in generic terms, refers to human freedom. This illustrates that currere is anchored in liberating individual teachers from anything limiting their freedom in practice. Existentialism upholds that individuals should experience and practice freedom. Freire (1970) supports the existential beliefs of currere by arguing that teachers need to be liberated by reflecting on their experiences to gain a voice or regain it if it was lost in curriculum spaces. Freire argues that schools are a ground of clashes as far as curriculum enactment is concerned.

The four steps or moments of currere are the regressive, the progressive, the analytic, and the synthetical stage. Pinar and Grumet (2012) observe that cognitive, emotional, and intuitive comprehension are involved in all these four steps. Fig 1.0 below shows the four steps of currere.

Figure 1
The Currere Steps/Moments.



In the regressive turn/moment when an individual remembers and reflects on her/his past educational experiences, an individual's lived experiences become the source of data. In the progressive step, one contemplates desires and fantasies about the future moment. Progression is basically about turning towards an imagined future. An individual in this step projects himself/herself into the future and thinks of what the future will likely be in teaching as a practice. As one thinks of the imagined future, issues of pedagogy, societal issues, issues of technology in teaching, and relationships with learners and colleagues need to be considered where all of them appear to be going. In the progressive step, one imagines possible futures that may impact teaching and learning. The analytic moment considers the impact of the past and future on the present's shape. This moment involves a kind of phenomenological bracketing where one spaces oneself from the past and the future (Kanu, 2006). This implies that an individual tries to figure out how the future is present in the past, how the past might be present in the future, and how the past and future might influence the present. This demonstrates that one connects memories and ideas about the future and ascertains how those affect the present.

The last step, the synthetic moment, synthesizes thinking across all three moments to engage one's learning in the present purposefully.

Fundamentally, this step is when an individual combines all experiences to find the true meaning of one's voice. This stage comes out with the voice of an individual teacher, which is critical in successfully teaching climate change. Pinar (2012) argues that through critical reflection, which is necessitated by currere, teachers can identify their voices, which improves teacher instruction and student learning and achievement in any subject discipline.

3. Methodology

3.1 The Research Design

The study was guided by Educational Design Research (EDR). According to Plomp and Nieven (2013) and Van den Akker (2013), EDR is suitable for developing research-based explanations for complex issues, such as teaching climate change in educational practice. Berkvens (2009) explains that EDR involves creating interventions to improve educational practices. This study aimed to explore the perspectives of geography teachers on teaching climate change, a controversial topic. EDR was chosen as the best design for this study as it effectively addresses educators' significant problems, as noted by (Pors, 2014).

3.2 Qualitative Approach

This study utilized the qualitative approach, which is aimed at enhancing self-understanding and gaining insights into human behavior and actions, as well as the reasons behind them (Okeke & Van Wyk, 2016). This approach was suitable for the study since it enabled the researcher to engage with the participants in their natural setting and understand their perspectives (Creswell, 2014). Moreover, according to Kivunja and Kuyini (2017), the qualitative approach is best suited for investigations based on participants' communication, especially within educational practices.

3.3 The Pragmatic Paradigm

This paper was grounded in the pragmatic paradigm. According to Kivunja and Kuyini (2017) and Biesta (2015), this paradigm is beneficial for studying the actual behaviors of participants. Given that the goal of this study is to explore the voices of geography teachers, the pragmatic paradigm's practicality helps to shed more light on their views in a pragmatic manner. Okeke and Van Wyk (2016) submit that pragmatic

researchers satisfactorily explore the participants, as this paradigm places the research phenomenon at the center. Additionally, Kivunji and Kuyini (2017) argue that the pragmatic paradigm allows the researcher to be both subjective and objective in analyzing the participants' viewpoints, which is a significant advantage.

3.4 Data Generation

Data was generated through semi-structured interviews and focus group discussions. Semi-structured interviews were beneficial since they allowed the researcher to probe and clarify the participants' answers. This led to the researcher being able to collect thick data from the participants (Maree, 2020). According to Bertram and Christiansen (2020), interviews are ideal for obtaining participants' viewpoints, voices, attitudes, and experiences with the curriculum. For triangulation, focus group discussions allowed participants to react to each other's views. Unlike one-on-one interviews, focus group discussions create a natural environment for participants to influence each other, leading to a deeper understanding of the phenomenon under study.

3.5 Sampling

Eight geography teachers were purposively selected as participants in this study. According to Nyimbili and Nyimbili (2024), purposive sampling is a non-random technique used in qualitative studies to select participants based on specific characteristics relevant to the study's objectives. Among various types of purposive sampling techniques, this study used the criterion sampling method, which involves selecting participants that meet predetermined criteria and ensure relevance to the research questions (Nyimbili & Nyimbili, 2024). The inclusion criteria for selecting the eight teachers were that the teacher should teach senior-level geography where CC is taught. Geography teachers who were not teaching CC while conducting this study were excluded. The researcher conveniently selected four high schools, one in each of the four districts of Eswatini. Two teachers who met the inclusion criteria were selected from each school, forming eight participants.

3.6 Ethical Considerations

Ethical clearance for this study was obtained from the Ministry of Education and Training. Moreover, ethical considerations were upheld as the participants were made to sign consent forms and made aware that no one would be paid for participating in the study and that they

were free to withdraw anytime. To protect the participants, pseudonyms were attached to Thulile, Nobuhle, Hlelo, Welile, Hlobsile, Siviwe, Phiwa, and Halle. In essence, pseudonyms are commonly used in qualitative research as they aim to preserve the anonymity of the participants.

4. Findings

Thematic analysis was conducted to address this paper's research questions. Specifically, this study adopted the Braun and Clarke (2022) thematic analysis model. This model is widely recognized in qualitative studies as it provides a systematic approach to identifying, analyzing, and reporting themes within data (Cernasev & Axon, 2023). The Braun and Clarke model was selected because of its flexibility and adaptability. In analyzing this data, the following steps were followed: There was familiarization with the data, which entailed being immersed in the data to understand the depth and context of teachers' voices.

The second step involved generating initial codes by systematically coding the data segments to identify the features relevant to the research questions. Next was searching for themes, which involved collating codes into potential themes that reflected broader patterns of teachers' voices. Afterward, the task was to review the themes and refine them to represent the generated data accurately. Towards the end of the analysis process, data defined and named themes and clearly articulated what each theme represents. Lastly, the process of producing the study began, and the data was analyzed into a coherent narrative that addressed the research questions.

Moreover, the themes were also informed by specific curriculum concepts, discussed in line with the currere curriculum theory in the literature section, to determine and define the voice(s) that geography teachers assume when teaching climate change. Each theme is presented comprehensively using three categories that inform the teacher's voice - professional, societal, and personal. The findings for each theme are presented and discussed based on the participant's responses in the three categories. The themes used to determine the voices of geography teachers in climate change teaching are rationalization and pedagogy. Table 1 summarizes the themes and their categories.

Table 1

Summarized Data Analysis, following the Braun and Clarke Model of Thematic Analysis.

Familiarization/ significant data	Generating initial codes/ meaning	Categories/ suggested voice	Sub-themes	Theme
Most of the teachers highlighted that they teach for knowledge as the learners need to pass examinations	Teachers teach climate change for examinations, so they rely more on professional content than societal knowledge	Knowledge Skills/Competencies Values	The rationale	Rationalization
One is forced to rely on books as most learners have them for CC content	Teachers use textbooks mainly for CC content, ignoring other sources available from other sources like the internet or Indigenous Knowledge	Hardware Resource Software Resources Individual ware	Teaching resources used	Resources
Because of financial constraints to buy weather recording instruments or take learners for educational tours, we end up confined to teaching in the classrooms, which limits the exposure of the learners to the realities of CC effects	Although geography teachers are aware of the value of educational tours, they are limited by finances as learners fail to pay for such trips	In the classroom Outside the classroom Everywhere	Teaching and learning space	Location

A majority of the participants favored the teacher-centered method as the syllabus is long	Teachers decide to use a teacher-centered method, which does not involve societal / Indigenous Knowledge CC content	Teacher centered Content centered Learner-centered	Teaching approach	Pedagogy

4.1 Theme 1: Rationalization

In the study conducted by van den Akker (2013), rationalization refers to identifying an individual's main reason(s) for performing a task or activity. In this case, the theme of rationalization came about as the researcher purposed to establish the reason/s why teachers participating in the study teach CC. The currere moments necessitated that the participants reflect on why they teach CC. Their response indicated the choice that informs their rationale for teaching. Mabuza and Khoza (2019), Makumane (2023), and Shoba (2018) emphasize that teachers should first understand the reasons for teaching their subjects before expressing themselves along the subject's philosophy. This implies that the concept of rationalization is critical in understanding the teaching of any subject, guiding the teacher in implementing all curriculum enactment practices to meet the subject's needs.

As seen in Table 1, the rationalization toward teaching climate change was substantiated by three categories: knowledge, skills or competencies, and values. The study assumes that geography teachers are influenced by professional voices to teach climate change knowledge, social voices to share and inspire skills and competencies, and their voices to communicate values to learners (Bernstein, 2006; Van den Akker, 2013).

The data collected revealed that geography teachers have various reasons for teaching climate change. Surprisingly, very few teachers considered all three categories of reasons at once. However, the explanations provided by the teachers indicated that they were taught CC for knowledge purposes that would allow their learners to pass geography in high-stakes examinations.

"Although it is a difficult question to respond to why I teach climate change, my simple response to that one would be that I teach it because of the love I have for my job and I enjoy teaching climate change; in fact, I liked geography from my

secondary school days, and I so much wish all learners I teach should fall in love with the subject as well" (Hlobsile, Thulile, Welile. Phiwa, Hlale).

This response revealed that the teachers relied on the professional voice and ignored the societal voice, which suggests that learners would benefit from specific competencies from learning CC. The researcher argues that if such a voice guides teachers, climate change enactment will remain problematic as it requires learners to benefit from societal and personal competencies that will curb the effects of CC (Allan et al.,2021).

Other participants revealed that they taught climate change so learners would not be disadvantaged when writing exams. "My learners have to pass any climate change questions, so one makes sure the textbook is followed so that learners are not disadvantaged in their exams (Siviwe,Hlobsile, and Hlelo)

These participants were driven by the professional voice, which aims for high-stakes examinations. Such a voice removes the personal voice of the teacher and thus may disadvantage learners as climate change content is dynamic.

4.2 Theme 2: Resources

In generic terms, teaching-learning resources refer to the means or tools teachers use to assist learners in meeting the curriculum's learning expectations. Amory (2014), in harmony with Dlamini (2022), defined resources as materials used by a teacher to supplement classroom instruction or stimulate learners' interest. Khumalo et al. (2023) divide resources into three parts: hardware and physical materials that a teacher can use; software resources being taught are available from the internet or through technology. Then, the individual or personal wear describes a teacher who uses unique personal means to teach CC. In this concept, the participants said:

"I use the textbook as the formal resource that even the learners are given to use for CC teaching" – Thulie.

"I do not need to worry with searching for other teaching means; learners are given the textbook, so why worry myself?"- Hlale.

"The prescribed book has CC content, and one is covered. There is no need to worry as even the examinations are based on this resource."- Hlobsile, Phiwa, Siviwe, and Hlelo.

The participants' accounts indicated their complete dependence on the professional voice. When probed further if they knew they could obtain CC content from software resources, the participants stated there was a lot of CC content on the internet, but they were scared of using it as they doubted its authenticity. This indicated that the teachers lacked a personal voice that they would engage in to get CC content for their learners. This finding was unfortunate as the teaching of CC requires a blend of hardware and software resources to enhance learners' educational experiences. Accordingly, blending the hardware and software resources facilitates understanding CC and engages learners meaningfully (Chopra et al.,.2024). This is because some textbooks may not be able to capture some current information, which may disadvantage learners, yet societal voices may have current information. Moreover, Van Eeden et al. (2018) and Young (2013) lament the overreliance of teachers on textbooks as they limit knowledge construction to learners. In essence, Hinaloc (2022) blames the overreliance on one voice, which limits constructivism, a recommended practical learning approach. This paper argues for using current information (from social voices) and textbooks, which a teacher, as a learned individual, should use to teach climate change. The personal voice is at play if a teacher selects the right content.

4.3 Theme 3: Location

This theme referred to the actual place where CC teaching and learning takes place. The categories indicated the preferred places where teachers favored teaching CC. Almost all the participants indicated that because of the lack of money for parents to pay for educational tours to allow learners to experience the effects of CC. Thus, all of them indicated that they teach in the classroom.

"Because of financial limitations, even if one wishes to take them out for field trips, there are always challenges"- Hlobsile, Welile, THulile, Hlelo, Hlale, and Siviwe.

This meant that learners were not encouraged to use Indigenous Knowledge or any form of social media sources for CC learning. This finding again indicated that the professional voice tied the teachers, and their voices were silenced. Scholars have unveiled that learning CC outside the confines of the four-walled classroom significantly enhances

learners' understanding of climate issues through immersive lived experiences.

4.4 Theme 4: Pedagogy

In a teaching and learning environment, the philosophy behind the pedagogy taken by the teacher is crucial in achieving the desired outcomes. Anyanwu (2015) suggests that an effective pedagogy for teaching climate change should involve presenting learners with practical situations that illustrate the reality of climate change in society. This approach should encourage learners to ask questions and discuss climate change issues openly during class. This study explores three teaching methods about climate change: teacher-centered, content-centered, and learner-centered. The teacher-centered approach focuses on the teacher transmitting knowledge to the student, as supported by Tyler's model and by research conducted by (Hoadley, 2009). Most participants in this study seemed to prefer this approach. Six participants declared, "We rely on the prescribed textbooks for all climate change content. It is difficult to trust material other than the *textbooks"- Thulile, Phiwa, Hlelo, Hlobsile, Siviwe, and Welile.* These teachers relied entirely on professional voices that trusted Young's (2013) powerful content. The shortcomings of this overreliance cannot be overemphasized as it reduces learners' chances of gaining current climate change trends.

In the content-centered approach, the main focus is on covering the required subject matter. In this, the teacher may allow students to contribute their knowledge of climate change and add relevant content from outside sources. This approach is more aligned with social voices, for which other participants stated they ask for the learners' knowledge. However, the challenge with this, as raised by participants, is that the learners need to be given direction as some of the societal voices' content misleads.

Contrary to teacher-centered and content-centered pedagogy, there is leaner/problem-centered pedagogy, which considers the teachers' voice (Celia & Elize, 2018; Van Eeden et al., 2018). Kennedy (2016) proclaims that the learner/problem-centered pedagogy emerges from taking advantage of content and teacher-centered pedagogy to come up with this pedagogy. Learner-centered pedagogy is favored because it promotes and supports enhanced knowledge construction and problem-solving skills for learners. The prominent strength of learner-centered pedagogy is that learners are actively engaged during the

teaching and learning process (Hoadley, 2009; Pinar, 2012). The teacher utilized a personal, unique voice to meet the diverse needs of the learners, and the teachers in this study said it was an area they had not thought of. However, as they engaged in the focus group discussions, it was clear it was possible.

5. Conclusion and Recommendations

The findings of this study demonstrate that the teaching of CC is dominated and driven by professional voices and, as such, has created problems for the effective teaching and learning of CC. The findings resonate with Beach (2023), who stated that teaching CC presents numerous challenges that teachers must navigate to engage learners effectively. According to Beach (2023), these challenges stem from a lack of teacher voices, cognitive barriers, and the complexity of the subject matter. This study recommends that addressing these issues is crucial for encouraging a climate-literate population capable of understanding and acting on climate-related problems. For climate change education, this study proposed that the personal teachers' voices should be brought on board to neutralize the tension between the professional and societal voices. The study suggests the theory of teachers' voices. The theory addresses the tension by creating a neutral voice (personal voice) that takes from the benefits of both societal and professional voices. The theory of teachers' voices brings about a solution for teachers who, in every given situation, can assume a neutral position that addresses their needs and those of the learners. As presented in this study, by applying the principles, currere teachers can always have their voice for climate change education if they carefully take from the strengths of both the societal and professional voices.

The fact remains that climate change represents a challenging predicament that requires transforming societies' systemic, status-quo practices to generate adaptation and mitigation solutions to address the climate crisis (Stibbe, 2021). As the study has revealed, there is a need to foster some transformations that require teachers to engage learners in the teachers' voices without being pressured by stake examination expectations, fear to use IK, and engaging learners in activities to address the need for change to address the CC effective teaching. This study recommends and supports Cotton (2022) that engaging teachers (voices) as active participants rather than mere curriculum implementers are essential for the overall educational environment and achieving quality teaching actions for critical topics such as CC. Essentially, the

teachers' voices remain vital for their empowerment, which empowers them to present their needs and influence educational practices freely. Moreover, Cotton (2022) affirms that acknowledging teachers' voices enhances their sense of agency, leading to a more outstanding commitment to their work. This endorses the importance of embracing the teachers' voices in CC teaching.

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