TEACHING GRADE 4 ENGLISH IN MULTILINGUAL CLASSROOMS: HEDEGAARD'S DOUBLE MOVE REVISTED

by

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Abstract

For many Grade 4 learners within South Africa, the transition to English as their Language of Learning and Teaching (LoLT) is often turbulent and troublesome due to current approaches and practices falling short or failing to meet the unique contextual needs of their learners. This paper investigates the potential practical applications of Vygotsky's theory of learning and Hedegaard's Double Move in these classrooms, in an attempt to understand if these concepts and methods are or could be utilized to better accommodate for multilingual learners

The data for this multiple case study was collected through observations of Grade 4 English Home Language lessons at two rural primary schools within Limpopo, as well as through semi-structured interviews with the participating teachers.

Within these English Language classrooms, the utilization by teachers of Everyday Concepts in an attempt to aid in the understanding of Scientific Concepts occur naturally. This occurrence was also often coupled with increased learner engagement. This signifies teachers gravitate towards Hedegaard's Double-Move Method intuitively, despite not having prior knowledge or familiarity with the model, due to its found usefulness by the teacher during instruction. However, due to their lack of knowledge on the model there were no complete Double-Moves throughout the lessons.

These findings indicate that a space exists within English Language classrooms for a conscious application of the model. Furthermore, the use by teachers and learners of their mother tongue within the classroom when engaging in discussion or instruction suggests that a place already exists for it and thus could potentially be utilized as a tool to further facilitate learning. With both educators indicating the inability of learners to cope with the transition and, in turn, their struggle to meet the needs of their learners, a need for a new approach clearly exists. This, coupled the positive results within STEM classrooms, both in relation to learners' ability to grasp the content as well as in providing them with the tools to reclaim foreign topics as their own (Hedegaard & Chaiklin, 2005; Hardman & Teschmacher, 2019; Fleer, 2020; Fleer, 2008; Fleer & Ridgway, 2007), led to the assertion that it held the same potential for English Language classrooms.

Chapter 1: Introduction

1.1. Introduction

With the everchanging face of society, education and all things related are forced to continuously adapt to meet new demands and needs. No longer do learners need to be prepared for the mindless assembly line work that marked the industrial revolution era, but rather skills relating to adaptability and creative problem-solving are in demand instead (Wells, 1994). Furthermore, with the continuous adaption and push for inclusivity, educational contexts have become populated with learners with diverse values, interests, and social backgrounds (Wells, 1994). Within South African society this is also the case. Moving into a post-apartheid era, South Africa and its people are still attempting to ensure the correction of the fault of its past. Thus, education had to adapt and be restructured to better reflect society and to ensure the accommodation and inclusion of all its learners (Beynon, 2004). One such attempt within education was the introduction of the Curriculum Assessment Policy Statement (CAPS) in 2012. One of the aims CAPS encompasses is to 'ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives' (Curriculum Assessment Policy Statements, 2012, p. 9). However, despite its intentions, CAPS has been criticised for still adhering to a 'one-size-fits-all' approach (Hardman & Teschmacher, 2019).

With many of these 'one-size-fits-all' approaches falling short or failing to adequately prepare learners for the real world, educators and researchers are questioning the appropriateness of current educational practices to meet the unique contextual needs of their learners. Many teachers have resorted to methodologies from their own childhood in attempt to meet the demands that are placed on them – which are not compatible to the current society and its learners (Beynon, 2004). Leaving many teachers to wonder what the way forward is or how they as educators must attempt to meet the demands and aims of CAPS with methodologies that are insufficient.

In an attempt to answer this, many educators and researchers have started to explore different theories and approaches to pedagogy which could be compatible for the South African context. More recently, Vygotsky's pedagogy and the expansion thereof by researchers such as Hedegaard, has shown promise. However, the study of its application to South African classrooms is fairly new and thus requires further

research. Following the work completed by Hardman and Teschmacher (2019), which focused on this pedagogy and this approach within a South African context, in this study I investigated whether this approach is present within English language classrooms.

1.2. Rationale

1.2.1. Personal rationale

Both through personal and professional experience, the gaps within our current education system, and more specifically its pedagogy, became apparent. One of the bigger gaps, in my opinion, relates to how language and learning integrate within the classroom, not only in teaching subject-matter but in aiding learners' ability to reach their potential. Being a non-native English speaker myself, growing up in a context that offered little exposure to the language, I struggled to cope with the demands of learning tertiary level content in English, when I had become accustomed to learning predominantly in my mother tongue, Afrikaans. However, I was fortunate enough to face these frustrations and struggles at an age and within a context that allowed me the resources to address them. Unfortunately for the many pupils that entered my classroom and for many others within South Africa, this is not the case. As an English teacher, I have dealt with many capable learners, who grew frustrated and distraught when faced with English subject-matter. For my Grade 4 learners this was the most apparent and led to me spending many hours with learners to revise and practice the basics, which the curriculum expected them to have mastered at that point.

1.2.2. Academic rationale

In a country that prides itself on having 11 official languages, the South African Language-in-Education Policy (LiEP) only accommodates for mother tongue as preferred medium of instruction in the Foundation Phase (Grade R- 3) (Steyn, 2017). This results in many learners having to transition to English as their Language of Learning and Teaching (LoLT) in Grade 4, despite it not being the learners' mother tongue. This transition is often turbulent and troublesome for these learners as many of them struggle to succeed despite having the potential to do so. Steyn (2017) suggests that it is because they must receive and process information in a second language, despite many not yet mastering the first. This was confirmed by Prinsloo and Krause (2018) following the results of The Progress in International Reading Literacy Study (PIRLS) in 2016. The PIRLS concluded that 78% of South African

Grade 4 learners could not read for meaning, despite the test being conducted within their own mother-tongue (Prinsloo & Krause, 2018). This serves as an indicator of the struggle learners face within the English classroom. This is further facilitated by English being regarded as a foreign entity, both due to the limited exposure many communities have to it and to its fraught colonial origin and related history within South Africa. Therefore, a need exists to explore possible new avenues in pedagogy within English classrooms in an attempt to alleviate some of the issues that mar them.

Studies done making use of Hedegaard's Double-move model yielded positive and beneficial results, both in relation to learners' ability to grasp the content as well as in providing them with the tools to reclaim foreign topics as their own (Hedegaard & Chaiklin, 2005; Hardman & Teschmacher, 2019; Fleer, 2009; Fleer & Ridgway, 2007). My goal, ultimately, was to examine how this model, discussed below, can be utilised within language classrooms to alleviate some of the struggles learners often face, but the first step in achieving this lay in understanding how the concepts relating to the model are utilized within language classrooms currently.

1.3. Statement of purpose

I wanted to study how teachers explain scientific concepts in English language classrooms and how they proceed to link these to everyday concepts. This was done in order to explore potential practical applications Vygotsky's theory of learning (1987) and Hedegaard's (1998) Double Move method has within these classrooms.

1.4. Research Question

1.4.1. Primary question:

How do teachers within a Grade 4 English Home Language classroom explain scientific concepts in said classroom and link these to everyday concepts?

1.4.2. Secondary questions:

- Do teachers use scientific concepts in the lesson?
- Are scientific concepts elaborated in the lesson?
- Do teachers use everyday concepts in the lesson?
- Are scientific concepts linked to everyday concepts? If so, how are they linked?

1.5. Brief Outline of the Study

Building from Vygotsky's notion that everyday and scientific concepts must be linked through mediation for development to occur, Hedegaard produced a mechanism for

its application within pedagogy. This mechanism, known as the Double-Move, sees educators intentionally link everyday concepts of the child to the scientific concepts within the subject-matter in a way that is meaningful and relevant. The potential for the application of this method within English Home Language classrooms was explored within this study.

Working from a qualitative research design, a case study was conducted utilising both non-participant observations and semi-structured interview as data collection methods within English Home Language classrooms. The collected data from the observations were coded according to a predetermined coding system derived from the theory and both inductively and deductively analysed to answer the posed research question. Furthermore, data from the interviews underwent a thematic analysis, to gain further insight into the classroom context.

1.6. Conclusion

Within this chapter, the often-strenuous experiences many learners face surrounding the enforcement of English as Language of Learning and Teaching is highlighted. These experiences are frequently marred with various difficulties and barriers learners and educators need to overcome – made worse due to the lack in pedagogy that addresses the unique issues surrounding their classrooms. Therefore, a need exists to explore possible new avenues in pedagogy. Within this study, Hedegaard's Double-Move is explored as a potential new avenue.

Chapter 2: Theoretical Framework & Literature Review

2.1. Theoretical Framework

2.1.1. Constructivism

The introduction of constructivism in the social sciences challenged the traditional ideas which viewed development as some predetermined design that unfolded or was innate (Vianna & Stetsenko, 2006). Instead, it adopted a more transactional approach towards social and psychological processes, that considered the context in which the individuals were located. According to Vianna and Stetsenko (2006), constructivism considered these processes to be interlaced with the context of the individual. Echoing the constructivist paradigm, Vygotsky's ideas embraced a more socio-interactionist approach in regards to development (Vianna & Stetsenko, 2006).

According to Vygotsky (1978), development takes place as individuals actively engage with the world they live in. Within this line of thinking, development lies in 'mastering higher order, culturally embodied symbolic structures' (Bruner, 1997, p. 68). This can only be achieved through continuous social interaction mediated by cultural tools, that, in turn, become internalised (Vianna & Stetsenko, 2006; Bruner, 1997). In other words, development occurs on an interpsychological level (between people) before it occurs on an intrapsychological level (within the mind) (Vygotsky, 1978). To use this approach in pedagogy, Vygotsky's opinions regarding teaching and learning need to be accepted. To him, teaching and learning were intricately related, but learning did not mean development. '*Obuchenie',* which refers to both learning and teaching*,* could be better understood as the active collaboration and interaction between the learner and teacher; that is, development is a socially mediated process, where individuals obtain mental tools and problem-solving strategies through interacting with members of society and, in turn, develop higher mental processes (Vygotsky, 1978; Wertsch & Sohmer, 1995). Furthermore, according to Vygotsky (1978) "learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (p. 90), implying that, though social learning utilizes the achievements of development, it still precedes it (Hardman & Teschmacher, 2019; Vygotsky, 1978).

However, it is teaching which paves the way to development and it is through that instruction that development can occur (Bruner, 1997). The introduction of the

concepts of the zone of proximal development (ZPD) allowed this idea of intersubjectivity to integrate with pedagogy, while providing an analytical tool through which development could be understood and instruction could be planned (Bruner, 1997; Hedegaard, 1990). According to Vygotsky (1978), the zone of proximal development can be defined as:

> "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peer" (p. 86).

Through this collaborative activity within the zone of proximal development (ZPD), between the more knowledgeable other and learners, learners can internalise tools, skills and new concepts (Hedegaard, 1996; Wells, 1994). Thus, meaning in the ZPD is co-constructed between teacher and student.

2.1.2. Vygotsky's doctrine of scientific concepts

When it comes to concept formation, Vygotsky considered two levels - the everyday and scientific (Fleer & Ridgway, 2007). These two levels were opposite yet strongly related. Where everyday concept formations resulted from generalisations made by the child that stem from the everyday personal experiences and direct interaction with the world, scientific concept formation resulted from conscious and voluntary generalisations about humankind (Karpov, 2003; Fleer & Ridgway, 2007; Wells, 1994). Everyday concepts are intuitive and are formed without any external guidance, through a process of comparing various objects and identifying the primary characteristic they share (Karpov, 2003), whereas scientific concepts are abstract and are formed through theoretical learning and systematic formal instruction within the educational context of schooling (Karpov, 2003). To understand how these two concepts are connected within development, let us consider Figure 2.1.1. below:

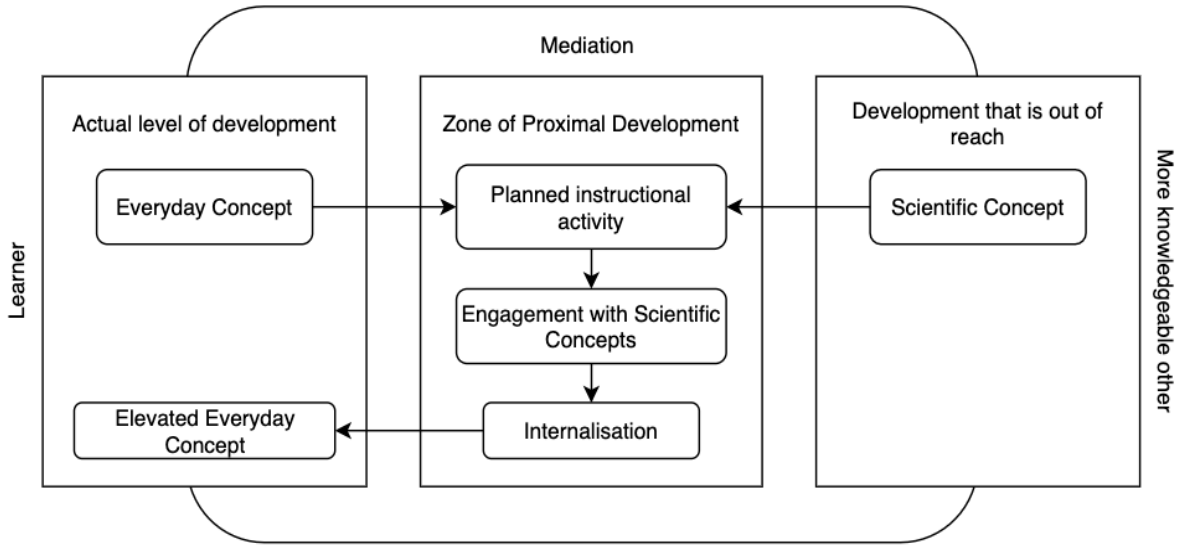


Figure 2.1.1.

Everyday concepts are located within a learner's actual level of development, meaning that it is something that is already known to him/her. On the other hand, scientific concepts are often out of reach and unknown to the learner, until they are introduced by a more knowledgeable other through formal instruction. This formal instruction uses everyday concepts as the foundation for the development of scientific concepts, but it is through this instruction of scientific concepts and its mediation of problem-solving and thinking within the zone of proximal development, that the necessary structures are prepared to allow for the restructuring of everyday concepts to a higher level (Fleer, 2009; Karpov, 2003). Although it is through this internalisation of scientific concepts and the transformation of everyday concepts that development occurs, the direction of development is largely dependent on the instruction that guides it - placing the educator in a crucial position (Hedegaard & Chaiklin, 2005). While Vygotsky indicated that everyday and scientific concepts must necessarily be linked for development to occur, he did not outline a mechanism for doing this. In her work in the later 20th century, however, Hedegaard (1998) provides a mechanism for linking these two concepts in what she calls a 'double-move' in pedagogy.

2.1.3. Hedegaard's Double-Move approach

Hedegaard and Chaiklin (2005) suggest that by bearing in mind both everyday and scientific concepts, the educator has the ability to create a powerful learning context. Their conceptual approach to teaching, that interlaces everyday and scientific

concepts in order to transform a learner's thinking, is called the 'Double-Move' (Hedegaard & Chaiklin, 2005). The main idea within the Double-Move approach is that 'core conceptual relations within subject-matter areas have to be related specifically to children's life situation so that this academic knowledge can become integrated with local knowledge, thereby qualitatively transforming children's everyday concepts and their possibility to use this knowledge in their local practice' (Chaiklin & Hedegaard, 2013, p.30) - See Figure 2.1.2 below:

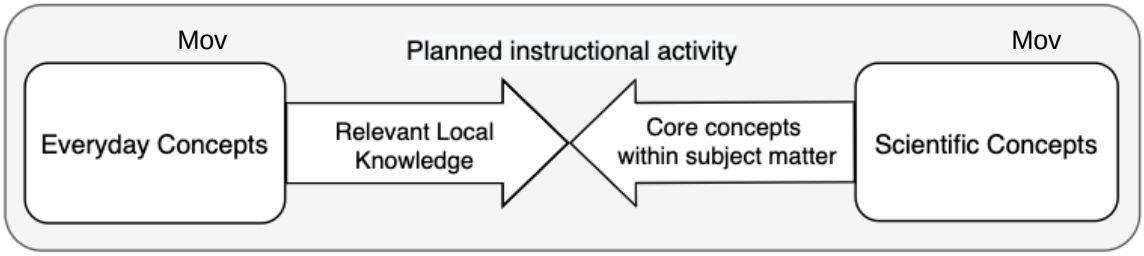


Figure 2.1.2

Practically, this would require the educator to carefully plan instruction and instructional activities, bearing in mind the knowledge learners bring to class, in order to intentionally link these everyday concepts of the child to the scientific concepts within the subject-matter in a way that is meaningful and relevant (Fleer, 2009; Chaiklin & Hedegaard, 2013). Perhaps a process that might seem tedious to some, but one that promises significant benefits if done successfully – such as facilitating learners' motivation to participate and engage with the content and potentially transforming the way they think (Chaiklin & Hedegaard, 2013).

2.2. Literature Review

Within the last few decades, the popularity of Vygotsky's work has grown significantly, especially within the field of developmental psychology. Vianna and Stetsenko (2006) accredits this to his theories' ability to bridge the gap between the knowledge in developmental psychology and practice within classrooms. Subsequently, there has been a rise in research within the field of education that draws on his ideas. Many researchers utilise his theoretical framework as a basis for analysis of current practices (Muthivhi, 2014), whereas others adapt and elaborate on them to apply to the contexts of the researcher (Muthivhi, 2010). Nevertheless, his work has proven beneficial in both regards. However, the body of literature regarding it is expansive and would be difficult to successfully explore within this literature review. Instead, I will specifically

focus on two lines of focus, namely, literature regarding Hedegaard's elaboration on his work and the application thereof, and literature surrounding the application of his theoretical framework on language. The goal in this literature review will be to conduct a critical analysis in order to verify the validity of my study, by exploring the potential benefits or limitations of this theoretical framework and searching for any possible gaps that might exist.

2.2.1. Teaching with Hedegaard's Double-Move

One promising avenue within the body of research has come from the efforts of Marianne Hedegaard. Drawing on the work of Vygotsky and Davydov, Hedegaard (1990) conceptualised a theoretical approach to teaching and learning subject-matter, named the 'Double-Move'. Using a cultural-historic perspective[1], this method allows for the practical implementation of 'everyday' and 'scientific' concepts - as defined within the theories of Vygotsky - within teaching that accommodates for learners from varying contexts. In this segment, I will aim to investigate, analyse, and critique the conclusions made in literature related to the application of Hedegaard's Double-Move within educational contexts, and explore potential benefits and pitfalls that exist within this body of literature.

As a starting point for this literature review, the work of Hedegaard herself is considered, or more specifically the publication on a teaching experiment she conducted in 1990 which paved the way for the creation of the 'Double-Move' approach. Following a single elementary class located within a Danish school from Grades 3 – 5, Hedegaard (1990) conducted a teaching experiment using germ cell models as a tool for instruction on social science subject-matter. Utilizing the germ-cell model as a research tool for exploration, children analysed central subject concepts, such as the relation between animal and nature, with the hopes that this model will become a psychic tool for analysis for problems they encounter in their life. Through making use of guided questions, the children were tasked to engage in a written activity that saw exploration of themes related to the topic of 'evolution of animals and human origin'; working in groups to create drawings of the relations between various themes. The children were assigned additional written assignments, tasking them to use the model, before and after Christmas break.

[1] Vygotsky's work is generally referred to as Cultural Historical Theory.

The goal of her study was to formulate a theory on children's personality development within cultural and societal contexts and to formulate a theory of instruction. Using the zone of proximal development as the basis, instruction moved from specific concrete examples and the everyday concepts of the children, to more generalised conceptualizing and modelling of what was being observed (Hedegaard, 1990). The analysis of their tasks confirmed the efficiency of the Double-Move method, finding that the children drew on their own experiences when creating the model drawings or engaging in classroom dialogue to understand the topic and related concepts at hand (Hedegaard, 1990). One of the noteworthy results of this experiment is the ability of the class to still function, despite learners' various degrees of understanding – a common problem that plagues teachers. It was through the utilization of the zone of proximal development[2] as a tool of instruction and constant probing for learners to act that both 'slow learners' and 'fast learners' remained motivated to engage with and grasp the content. However, despite the efforts of the researchers, problems pertaining to the planning of teaching still arose – often placing them in a situation where a choice needed to be made between addressing the queries of the children or to adhere to the lesson plan (Hedegaard, 1990). Furthermore, Hedegaard (1990) continues to reject the assumption that concretization facilitates learning understanding. This assumption that children are self-centred and concrete (unable to think abstractly), is often used to explain learner performance. However, Hedegaard argued that instead concretization often leads to confusion in children. These issues highlight the demands of the Double-Move methods that teachers need to face. The most prominent being the continuous, thorough, and strenuous planning of activities. Furthermore, it requires teachers to have a comprehensive understanding of each individual learner's contexts and possible utilisation thereof, and to provide constant and clear guidance during the learners' engagement within them (Hedegaard, 1990). While this is indeed time consuming, the rewards of this developmental teaching lie in the construction of higher cognitive functions such as the ability to think critically and creatively.

Following the success of the study on the Danish learners, Hedegaard and Chaiklin published a book in 2005 in which they further elaborate and expand on the Double-Move method in teaching. The book offers a comprehensive and detailed

[2] I note here that the ZPD is individual and specific to each child.

discussion on the method and its theoretical underpinnings, as well as a narrative description on an afterschool program the researchers ran in New York City. Furthermore, drawing on the Double-Move method, a radical-local teaching and learning approach was introduced as a way to organize these educational programs (Hedegaard & Chaiklin, 2005). Driven by the idea that instructions should serve as both preparation for a child to engage in society and facilitate the development of psychological functions, radical-local teaching and learning relates subject-matter teaching and practice to the child's societal, cultural, and historical background. Simply put, radical-local teaching and learning encourages meaningful development by equipping learners with the tools and skills relevant to their world (Hedegaard & Chaiklin, 2005). What children learn in schools, then, must have resonance with their lives outside of school. So, for example, if one is teaching the concept of photosynthesis to children in Grade 5, this could have explicit use outside the classroom in that children are learning how to grow their own food. This theoretical perspective was utilised in the creation and implementation of their afterschool programs, which focused on a phased approach, to teaching young children from Puerto Rican backgrounds that reside within East Harlem, New York City, each phase containing their own set of teaching activities, tools, and skills relevant to problems they face within their local community. The goal of the program was twofold. On the one hand, it aimed to improve skills and knowledge related to specific subject areas of the learners. On the other hand, it aimed to improve their understanding and appreciation of their local community and how they related to it. This goal was realized. The program resulted not only in the children being able to apply theoretical-dialectical modes of thinking to both their individual context and their larger community context, but they also demonstrated an integration of narrative and empirical knowledge throughout the program.

In a later article by Chaiklin and Hedegaard (2013), the afterschool program is discussed once again, primarily focusing on the discussion of a clear and concise example of the practical implementation of the radical-local approach. Although the Hedegaard and Chaiklin (2005) publication discussed various programs and instructional activities, its focus had been on the comprehensive theoretical explanation of the Double-Move method and radical-local approach. Therefore, the publication lacked the in-depth perspective necessary for the replication of the programs by other educators. The article remedies this issue through providing a

detailed example of the implementation of instruction built upon the radical-local approach, acting as a potential guideline for educators wishing to apply the approach into their own teaching.

Another noteworthy body of research was conducted by Fleer and associates in 2007 and 2008. In these publications, the Double-Move is explored within early childhood settings. The first study up for discussion by Fleer and Ridgeway (2007), attempted to explore the dialectical nature of everyday and scientific concepts and how these are developed during play. Unlike binary or dualist logic, dialectical logic suggests that aspects such as 'mind' and 'society' are simply opposite sides of the same coin - seemingly opposing but inseparable. Moreover, in a dialectical model, contradictions give rise to dynamic changes in activity settings. Observing a group of twenty-four children at a preschool over the duration of 4 weeks, Fleer and Ridgeway (2007) examined children engaging in 'potion play' - which refers to the guided filling, mixing, siphoning, and labelling of various bottles and liquids provided to them, as if creating 'potions' – since it offered potential for everyday and scientific development. However, the evidence suggested that though everyday concept formation was evident and elaborated, scientific concepts were not fully realized or actively connected, due to the children being engulfed by the physical manipulation and interaction with the materials. Furthermore, the study found that when children did probe it was mostly random, due to the limited knowledge of the concepts of the teacher.

Based on the findings of the study by Fleer and Ridgeway (2007), Fleer and Raban (2007) turned their focus to the role of the more knowledgeable others potentially in attempt to address the pitfalls centred around the role of the teacher that arose previously. Concentrating on concept formation in literacy and numeracy of Australian children between the ages of 0-5, Fleer and Raban (2007) created and distributed tools and resources (in the form of a booklet and cards) to caretakers, teachers, family members or professionals. Selected preschools and childcare centres across Australia distributed the relevant cards and materials, resulting in a total of 349 participants. The goal of these resources and tools were to inform and guide them in how to mediate and relate everyday and scientific concepts to the children. The participating adults found these resources and tools both useful and meaningful when it came to interacting with the children, marking the study as a success according to Fleer and Raban (2007). However, it is important to note that the study did not

measure the children's ability to form concepts in literacy and numeracy, but rather measured the responses from the participating adults. Thus, the success of the study was based on the underlying assumption that by improving mediation from the more knowledgeable other, it will improve the children's concept formation.

Similar to the earlier 2007 study, in 2008, Fleer attempted to explore the relation of everyday and scientific concepts once again and how these are developed during play. Doubling the previous sample size, Fleer and Raban (2007) observed 48 children engaging in play programs run by a rural centre and an urban centre, over the course of four weeks. Both the programs focused on science related topics or skills – the rural centre engaged in 'potion play' and the urban centre created a play programs centred around bugs. Some of the observations reflected the same issues as discussed within the original study by Fleer and Raban (2007), such as learners being more engulfed with the physical manipulation of the materials. However, Fleer (2009) found that when experiential everyday learning integrated with scientific learning (teacher programs more orientated towards concepts than materials), children's play leads to conceptual connections. This reaffirms the argument made by Hedegaard and Chaiklin (2005), regarding the importance of a teacher's acknowledgement of both scientific and everyday concepts in educational activities, in the transformation of learner thinking.

Though most of the previously discussed studies took place in various countries around the world, none of the countries truly mirrored the diverse context of South Africa, thus begging the question whether such an approach would be applicable here. A study conducted by Hardman & Teschmacher (2019) offers insight into the applicability of the Double-Move method within our culturally rich context. Observing Grade 1 and 2 science lessons within a disadvantaged school, Hardman & Teschmacher (2019) investigated teacher and learner interaction to find instances where the teacher linked scientific and everyday concepts. Despite the absence of fully formed Double-Moves throughout the lessons, either due to a of lack of teacher knowledge of this pedagogy and/or insufficient guidance by CAPS, they noted that there were opportunities for it. Furthermore, they argue that if the Double-Move method is utilized through a radical-local approach it could potentially decolonise the curriculum and provide a voice to learners who have been disadvantaged and silenced by the consequences of South Africa's past (Hardman & Teschmacher, 2019). It is because of this argument and the illustrated efficacy of such an approach globally, that further research is needed to not only reaffirm the findings of Hardman &

Teschmacher (2019) but also to pursue the potential benefits thereof. Within this proposed study, a replication of the study Hardman & Teschmacher (2019) will be conducted in order to determine if it holds the same potential benefit to the learners in an English language classroom.

In conclusion, further research surrounding the use of the Double-Move within teaching is required. The analysis of the various bodies of research indicated that there are many perspectives and applications which are left unexplored in the following contexts: Instruction of older children, instruction within a South African context, and instruction in subject-matter not related to STEM subjects.

2.2.2. Language and Learning

Language plays an important role in learning and development, as it allows for interaction between learners and teachers to occur and, as Vygotsky argues, it is through this social interaction that individual cognition originates (Lefstein & Snell, 2011). However, not all interactions that occur are evenly balanced in this development and learning, and classrooms are marked by their own unique discourse (Barnes, 1992). Interaction and discourse within a classroom only become advantageous to learning and the mediation thereof when it is a truly dialogical practice (Barnes, 1992). A truly dialogical practice sees learners and teachers actively engaging to construct or co-construct their own meaning through social interaction and collaborative dialogue. (Guzula, McKinney & Tyler, 2016; Hicks, 2003; Barnes, 1992). However, is questionable whether or not this has been achieved in South African classrooms.

Within the South African context, multilingual classrooms are common, meaning that classrooms are likely to consist of learners who speak a variety of languages. Considering that the navigation of classroom social interaction is already complicated within a monolingual setting, it would be even more so when in multilingual classrooms. In attempt to aid in this navigation, the South African government introduced the Language in Education Policy, in 1997, promoting and enforcing multilingualism within education – a fact that has led to it being described as “one of the most progressive in the world” (Probyn, et al., 2002, p. 29). However, according to Probyn et al. (2002), this policy, however promising, cannot succeed because it is not successfully implemented at school level. In other words, schools have failed to incorporate the Language in Education Policy (1997) into their own

language policies (Probyn, et al., 2002). This fact is illustrated in their selection of their language of instruction or 'Language of Learning and Teaching' (LoLT). Despite the Language in Education Policy (1997) stating that learners be allowed to choose their language of instruction, the power of choice lies with the school's governing body, which consists of teachers and parents (Probyn, 2009). Furthermore, regardless of the Language in Education Policy's (1997) advocacy for the inclusion of local languages, many schools instead opt for children to be educated in English, regardless of the fact that many learners are not 'native' English speakers. This is largely the result of communities and parents harbouring the belief that English will pave a way to a better life for them and their children (Probyn, 2009). However, it seems the opposite is true. Considering the fact that only 9.6% of the population are English first language speakers (Statistics South Africa, 2011), learners, especially those outside of urban areas, often lack the exposure and resources necessary to build their English language skills and abilities. In these cases, English as the LoLT acts instead as a barrier or deterrent to academic success (Probyn, et al., 2002; Probyn, 2009). Nonetheless, the transition to English as the Language of Learning and Teaching (LoLT) from Grade 4 onwards is still a common occurrence across South Africa (Probyn, et al., 2002).

With educators being caught between the desires of the community and the reality they are faced with in classrooms, they are often forced to change and/or adapt their teaching practices. In some cases, teachers disregard the true dialogical practices and instead they engage in ill-suited practices, such as rote-learning[3], in an attempt to cope with English assessments (Probyn, 2006). In other cases, teachers take it upon themselves to adopt a flexible pedagogy to accommodate for learners' linguistic difficulties – such as utilising a learner's home language to help bridge understanding or engaging with learners by drawing on their multilingual repertoire to achieve the lesson goals (Guzula, McKinney, & Tyler, 2016; Probyn, 2019). The latter approaches show promise, but since mixed language practices and flexible bilingual pedagogies are not addressed within the Language in Education Policy, many schools disregard it within their own - many schools even frown upon and discouraged its use (Lin, 2019). When faced with these facts, it prompts us to question whether or not

[3] I am not suggesting that there is no place for rote - learning in a classroom. Indeed, learning the times tables for example, is usefully done through rote. However, if one is learning concepts, you cannot do this via rote learning.

teachers are equipped with the practical guidance and support needed to successfully deal with the challenges of multilingual classrooms. Furthermore, perhaps reflection on the aptness of the Language in Education Policy is also warranted.

2.2.3. Teaching English in South African classrooms

English is one of the most dominant languages globally. Through colonisation, conquest and trade, English was and is established as *the* language of power, with its social practices, ideologies and structures regarded as the 'norm' (Garcia & Lin, 2018; Phillipson, 1994). In turn, many local languages of colonised countries were stigmatised and local practices disregarded, leaving English monolingualism as the only way to access the 'dominant society and its resources' (Garcia and Lin, 2018). As discussed previously, the prevalence of this belief is demonstrated in the selection of English as the LoLT by many schools and parents, leading to struggles in instruction and pedagogy. However, that is not the only issue that exists when considering the role English plays within the South African education system.

According to Phillipson (1994), language has been one of the most resilient aspects of colonisation. This is in large part due to remaining eastern-based structures and ideologies that accompanied the language that were not created to suit the indigenous people but rather to serve the elite, by using them to 'legitimate, effectuate and reproduce an unequal power and resources' (Phillipson,1994, p.339). Considering its past, it is understandable that the relationship between English and multilingual contexts might not be the easiest to navigate. Even after the recognition of indigenous multilingualism, English is still shrouded in inequality and dominates local languages (Garcia and Lin, 2018). Yet, we cannot disregard it because by doing so we stand to lose access to valuable resources. Therefore, many educators are faced with a paradoxical problem - they must incorporate English into multilingual contexts to allow learners access to its resources but they must do so in a way that does perpetuate its dominance (Janks, 2004).

Research conducted by Canagarajah and Said (2010) offers a potential answer. In their article, they explore the concept of different variations of English, also known as World Englishes, that exist across diverse contexts. They describe that many countries have claimed English as their own, disregarding the norms and social practices that were previously enforced, opting instead for ones that were fitting of their own social contexts (Canagarajah & Said, 2010). Furthermore, they suggest that

building on this fact, there should be a shift in how English is taught to allow for these diverse contexts, practices, and English variations. One promising line of thinking within their article centres around the idea that English language teaching should be considered as an adaptable social practice instead of an inflexible system (Canagarajah & Said, 2010). Teaching English as an adaptable social practice entails viewing it as a means to prepare learners to communicate effectively – teaching them communicative strategies instead of simply teaching them the relevant rules and conventions (Canagarajah & Said, 2010). Additionally, this approach to teaching also accommodates for the contexts within which these students find themselves and allows us to adapt our teaching to better suit those contexts (Canagarajah & Said, 2010).

The question then is whether this approach to teaching English can be adapted within the South African context. Firstly, it is important to note this body of literature was not based on the South African context and thus further research on the practicality and adaptability of the aspects proposed by Canagarajah and Said (2010) is required. Secondly, the current education system does not accommodate for this type of approach or line of thinking, since the underlying structures and ideologies still remain very monolingual (Makoe & McKinney, 2014). These monolingual ideologies and structures rely on an are strengthened by monoglossic approaches within pedagogy, which argues that each language has clear boundaries that should be kept within classrooms (Lin, 2019; Creese & Blackledge, 2010). This ‘language separation as bilingual pedagogy’ approach disapproves of teaching in more than one language within a given classroom and reflects the ideals of many ‘Bilingual’ schools (Creese & Blackledge, 2010). Hence, even if teachers attempted to adopt this view to accommodate for the diverse variations of English and accompanied multilingual contexts, they will not have the means to do so. Notwithstanding, many South African teachers still choose to “utilise the learners’ home language/s as a bridge to understanding the lesson content in English” within their classrooms (Probyn, 2019, p. 224). This inclusion of learners’ home language as within the classroom reflects a more heterglossic approach to pedagogy.

Often found within more flexible bilingual pedagogies, heteroglossic approaches disregard the segregation of languages within classroom settings (Lin, 2019). Instead, heteroglossic approaches regard the multilingual learners’ repertoire as a single unit that should be drawn from and used within learning (Guzula, et al.,

2016). Practically, within classroom interactions these approaches allow teachers to use a “diverse range of registers, voices, named languages or codes” (Guzula, McKinney, & Tyler, 2016, p. 2) as tools to accomplish a lesson goal.

Guzula et al. (2016) suggests that one promising pedagogic practice that often includes heteroglossic approaches is that of ‘translanguaging’. Originated from the Welsh term '*trawsiethu',* translanguaging is an approach to receptive or productive language use, that embraces the act of alternating between autonomous languages by bilinguals within multilingual classrooms in order to access ‘different linguistic features or various modes’ (García, 2009, p. 141) of those languages (García, 2009; Guzula et al., 2016; Lin, 2019).

Guzula, et al. (2016) argues that translanguaging could be used as a tool to further facilitate learner understanding. Nevertheless, its implementation into classrooms faces some challenges, due to the lack of inclusion of mixed language practices within the Language in Education Policy and, in turn, language policies implemented by schools. This omission from both the school and government policy leaves many teachers without the practical guidance and support needed to include such an approach. However, despite the subsequent challenges, translanguaging has already become a common practice in many South African classrooms - highlighting both a need to reflect on the aptness of the Language in Education Policy and a need to explore practical approaches to aid teachers in their implementation of translanguaging (Probyn, 2019).

With the research conducted by Teschmacher and Hardman (2019) concluding that Hedegaard’s radical-local pedagogy, through the double-move approach, was beneficial, it could hold potential in language classrooms as well. Unfortunately, in the search for literature applicable to teaching language specifically, research drawing on the Double-Move method was largely absent. Consequently, the criteria for literature was expanded to focus on the concepts and principles underlying the method as well.

Wells (1994) highlights a need for semiotic perspective to Vygotsky’s doctrine of scientific concepts, calls for approaches to instruction that focus on the mastery of semiotic tools, and provides some practical guidelines on how to do so. Nevertheless, it did not explicitly discuss language as a subject or the Double-Move but instead focused on language solely as a tool in learning and teaching.

This was echoed through other studies, where either language as a subject was discussed in regards to Vygotsky’s scientific concepts but without mention of

Hedegaard's Double-Move (Wells, 1994; Brooks, Swain, Lapkin, & Knouzi, 2010; Inglis, 1992), or Hedegaard's Double-Move was discussed but language was considered as a tool for instruction and not a subject (Hedegaard & Chaiklin, 2005; Chaiklin & Hedegaard, 2013; Fleer, 2009)

Regardless of the lack of research, it is valuable to explore the application of the Double-Move and the radical-local approach in language classrooms. Considering that it was found useful in both mastering concepts and combatting colonialization within subject matter (Hardman & Teschmacher, 2019), it could hypothetically provide a way of incorporating English into our multilingual context without giving it power and ensuring its accessibility to the majority of our population to access valuable resources without perpetuating its dominance (Janks, 2004). Furthermore, it may pave the way for the practical inclusion of more heteroglossic perspectives and approaches such as translanguaging.

2.2.4. Conclusion

The purpose of this literature review has been three-fold. Firstly, it served to prove that teachers are often not equipped to successfully deal with the challenges of multilingual classrooms, due to the lack of support and practical guidance to do so (Probyn, et al., 2002; Probyn, 2006; Probyn, 2009). Secondly, it served to prove that teachers lack the means to successfully incorporate English into classrooms, due to the fragile balance between perpetuating its dominance and allowing learners access to its resources. (Janks, 2004; Makoe & McKinney, 2014; Garcia & Lin, 2018). Lastly, it serves to prove the benefits of the Double-Move approach within pedagogy (Hedegaard & Chaiklin, 2005; Fleer and Raban, 2007; Fleer & Ridgway, 2007; Fleer, 2009; Chaiklin & Hedegaard, 2013; Hardman & Teschmacher, 2019).

Ultimately, what was found was a need for a new approach in South African multilingual classrooms and the potential ability of the Double-Move approach to meet that need. Furthermore, the approach's proven usefulness in both mastering concepts and combatting colonialization within subject matter (Hardman & Teschmacher, 2019) may alleviate some of the issues, as highlighted in the literature, teachers face when it comes to English, both the subject and language.

When these findings are considered collectively, it serves to prove the value of exploring the application of the Double-Move and the radical-local approach in language classrooms. However, despite the abundance of research on the Double-

Move approach, a gap in the research of its application exits within the South African context and non-STEM subjects.

Chapter 3: Research Methodology

Planning is a crucial step in ensuring that research is conducted in an effective and successful manner. Therefore, to ensure this, the research 'onion' model created by Saunders et al. (2019), illustrated in Figure 3 below, was used as a guide for research planning. This model allows for the researcher to consider every aspect of their research while bearing in mind that one aspect often relates to the next, building on each other to create a thorough and credible research methodology.

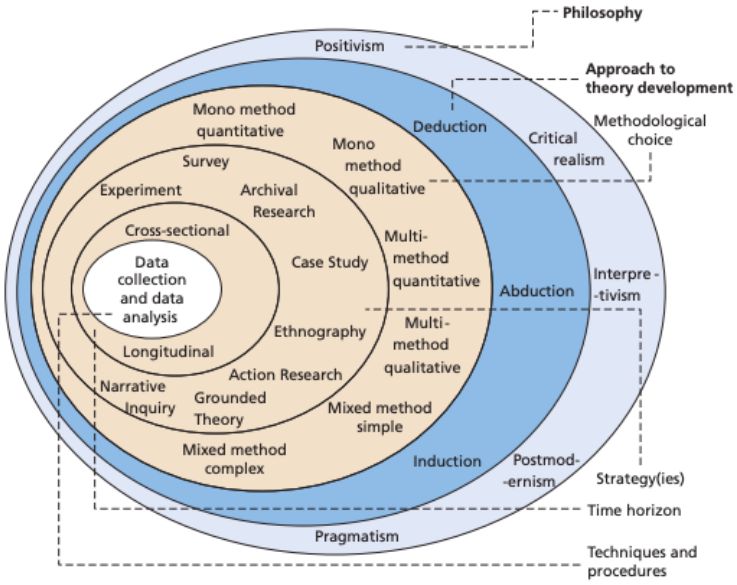


Figure 3: The research 'onion' (Saunders et al., 2018 p.130)

Keeping to this model, the chapter discussion will start from the outer layer (Philosophy) and move inward toward Data Collection and Analysis. Furthermore, ethical principles will also be considered and discussed to ensure that the research is conducted in an ethically.

3.1. Research Philosophy and Approach

Throughout the course of research, there are underlying systems of beliefs and assumptions held by the researcher that act as its foundation (Nieuwenhuis, 2016). These sets of beliefs, regarding knowledge and knowledge construction, are better known as the research philosophy (Saunders et al., 2019). Moreover, it is from the basis of the research philosophy that researchers pursue new and dependable knowledge, which in turn influences the research strategy, methodology and even the statement of the research problem (Žukauskas, Vveinhardt, & Andriukaitienė, 2018).

According to Saunders et al. (2019), a research philosophy is made up of three sets of assumptions, namely, ontological assumptions (relating to what one perceives as 'reality'); epistemological assumptions (relating to what one perceives to be acceptable human knowledge); and axiological assumptions (relating to the role one's values play). These assumptions collectively form a paradigm through which the researcher perceives the world – influencing and guiding the methods utilized to study and understand knowledge (Mackenzie & Knipe, 2006). According to McKenzie and Knipe (2006), since paradigms ensconce the aim and motives for the research, selecting a paradigm during the initial planning stages ensures that all subsequent decisions regarding methodology and design will have a solid basis (Mackenzie & Knipe, 2006).

3.1.1. Interpretivism

Broadly, interpretivism as a paradigm focuses on understanding social interactions while emphasising an individual's ability to construct and assign meaning to their experiences (Nieuwenhuis, 2016). Unlike the objective nature of positivist research, interpretivist research does not aim to generalise or predict cause-and-effect relationships. Instead, it provides a viewpoint from which to analyse and understand a situation as those who are studied would (Nieuwenhuis, 2016). Moreover, it considers the social contexts and conventions as crucial when assessing the behaviour of individuals, with intersubjective meanings being key in reaching understanding (Jansen, 2016). In order to fully comprehend the motivation behind selecting this as the research paradigm, the foundational assumptions of the interpretivist philosophy need to be considered i.e., its ontology, epistemology, and axiology.

Ontologically, interpretivism allows for the acceptance of multiple meanings, interpretations, and realities; considering 'reality' as complex and socially constructed through language and culture (Saunders et al., 2019). Epistemologically, it focuses on narratives, perceptions, and interpretations as acceptable sources of knowledge (Saunders et al., 2019). Lastly, axiologically, interpretivism views the research process as value-bound and subjective.

This makes it apt for the study, since Hedegaard's Double-Move method, the method being investigated, was built upon Vygotsky's cultural-historical perspective, which harbours the same views. This is evident when considering aspects of the model that will be investigated, such as 'Everyday Concepts'. Everyday Concepts are

subjective, usually contextually bound, and socially constructed. Thus, to explore classroom interactions and the applicability of the model, it is only logical to approach the study from a paradigm that allows for these aspects.

3.1.2. Inductive and Deductive Approach

The conclusions drawn and arguments made from the data collection and data analysis are influenced by the type of inference the researcher adopts. The two commonly adopted inferences are the contrasting deductive reasoning and inductive reasoning, though there is also a third, namely, abductive reasoning (Saunders et al., 2019). Using existing laws and rules, deductive reasoning aims to draw valid conclusions about a phenomenon from a given set of premises (Hayes, Heit, & Swendensen, 2010). Alternatively, inductive reasoning attempts to predict untested conclusions from existing knowledge, creating rules and laws by observing phenomena (Hayes, Heit, & Swendensen, 2010; Saunders et al., 2019). Lastly, abductive reasoning initially utilizes existing laws and rules to test a collected set of data, in order to adapt those laws or generate new ones (Saunders et al., 2019).

With the study being conducted within an interpretivist paradigm, it calls for an inductive approach to reasoning (Saunders et al., 2019). Within this approach, data collection will be focused on exploring a phenomenon whilst bearing in mind the context in which it occurs (Saunders et al., 2019). Nonetheless, this research adopts both an inductive and deductive approach to data analysis.

Within the analysis of the observations, codes were utilized that are derived from theory, and thus rely on a deductive approach. However, these codes are also refined through inductive analysis. Furthermore, data analysis of the interviews will be both inductive and deductive, with the researcher attempting to identify patterns or themes from the data but in accordance with predetermined questions (Azungah, 2018).

3.2. Research Design

A research design refers to the plan or strategy of a researcher, to ensure that the various aspects of the study can be integrated to successfully answer the research questions (Nieuwenhuis, 2016). Thus, when selecting a design, it is crucial to consider which approaches and methods would ensure that its execution is efficient in answering the research question and, in turn, ensures the success of the study (Nieuwenhuis, 2016).

3.2.1. Methodological approach

If the aims require more numerical measurements of a phenomenon or a more static setting, the use of a quantitative design is fitting. However, if the aims require an understanding of the meaning individuals attribute to a phenomenon or a more naturalistic setting, a qualitative design is more appropriate. The aims of this study align with the latter and, thus, a qualitative design was selected.

A qualitative design allows the researcher to gain a rich and descriptive understanding of complex processes or phenomena related to human behaviour while keeping in mind social and cultural contexts (Nieuwenhuis, 2016). As the study aims to understand the process of concept formation through mediation within a specific context (Grade 4 English language classroom), to answer the primary research question a qualitative design is necessary. A qualitative design, allows the researcher to draw on a new understanding derived from the existing theoretical framework outlined previously (Nieuwenhuis, 2016). However, both qualitative and quantitative methods of analysis are utilised. The collected qualitative data was transcribed and coded, per the predetermined code (See Table 3.3). In the form of coded language, the data allowed itself to be recorded, counted and analysed quantitively.

3.2.2. Research Strategy

Case studies are in-depth empirical inquiries into context-bound phenomena. The study draws on social constructivism and cultural–historic theories, marking the context as crucial (Nieuwenhuis, 2016). Its naturalistic approach and sensitivity to the intricacies of a specific context, allow the researcher to gain a comprehensive understanding by exploring the processes and relationships of that context (Frelin, 2015).

According to Zainal (2007), three of the most common categories of case study design are descriptive, explanatory, and exploratory, each distinguishable by its purpose or goal. As its name suggests, the goal of a descriptive case study design is to describe the natural phenomenon as it occurs. On the other hand, an explanatory case study design examines data deeper than the surface level of its descriptive counterpart, with the goal of explaining presumed causal relationships (Zainal, 2007; Nieuwenhuis, 2016). However, for this study, the third category, namely, exploratory case study design was selected. The goal of an exploratory case study design is to explore a phenomenon of interest to the researcher within the data (Zainal, 2007). In

this study, the phenomenon of interest, within the observed interactions, is the occurrence and use of the concepts laid out by Hedegaard's model.

Furthermore, the case study will also be collective in nature. Where the exploratory case study design pertains to the goal and approach of data collection, a collective case study type speaks more to the sample being investigated. A collective case study allows for the selection of more than one case in order to attain a representation of the phenomenon (Cousin, 2005). An additional benefit of collective case studies is that it allows for the possibility of generalisation to a larger population, which is often a limitation of case study designs (Zainal, 2007).

3.3. Sampling

3.3.1. Sampling Method

Non-probability sampling, more specifically purposive sampling, was used in this study. Purposive sampling refers to a method of sampling where the researcher decides which participants are selected (Nieuwenhuis, 2016). In this study, the selection of participants was done utilising a criterion sampling strategy, which means that selection was based on their ability to meet a set of criteria, as predetermined by the researcher. This sampling strategy allows the researcher to gain insight into groups and contexts from which different forms of behaviour arise, by purposively defining the 'case' which will be investigated (Creswell & Poth, 2018). Furthermore, the selection of cases was further narrowed down based on teacher availability, geographic location, accessibility of the school and, most importantly, high similarity amongst contexts.

3.3.2. Target population

The sample for this study focused on Grade 4 learners in English Home Language classrooms within non-government schools situated in the Limpopo province of South Africa. In accordance with the predetermined criteria, both schools' LoLT was English, whilst being located within communities which offer little exposure to English, and predominantly consisting of learners whose mother tongue is not English. This criterion allowed for the study to be relevant to a wider population of South African schooling contexts.

3.3.3. Sample Size

The sample size included two different English Home Language teachers' classrooms from two different schools. Of the two schools that were selected, one teacher was selected from each. Both teachers were assigned pseudonyms and will be known as Mrs Uys and Mrs Miller, respectively, from this point onward. See *Table 3.1* below for further information regarding the teachers' demographics and backgrounds.

Table 3.1 – Teachers' Demographic and Background

Teacher	Gender	Age	Home language	Language of Instruction	Years of Experience	Qualifications
Mrs Uys	Female	31	Afrikaans	English and Afrikaans	6	Education Degree at UNISA
Mrs Miller	Female	54	Afrikaans	English	30	Education Degree at NKP; Honours degree at NWU

The demographic and background of the two selected teachers' classrooms are laid out in Table 3.2 below:

Table 3.2 – Sample Classrooms' Demographic and Background

Teacher	Number of Students	Gender	Student Home language(s)	Language of Instruction	Availability of ICT Resources
Mrs Uys	8	Female – 3 Male – 5	Afrikaans	English	Yes
Mrs Miller	38	Female – 14 Male – 24	69% Sepedi, 11% Setswana, 8% Sesotho, and 12% Other	English	Limited

Despite each school being contextually similar and located within rural a village, the class size differed significantly. The primary reason for this difference lies in the schools' proximity to townships and the availability hostel facilities. The classroom by Mrs Miller is located within closer proximity to the township, with the majority of its learners residing within the hostel.

3.3.4. Elaborating on the contexts

Both participating schools are located in very rural areas within the Limpopo province, which are predominantly made up of farmlands. Furthermore, both schools are private schools and are, therefore, not subsidised by the government. Instead, both schools are completely financed by the local and surrounding farming communities.

Mrs Miller's classroom

The school is located in a rural area that is comprised of a community of farmers and farm workers. The village the school is located in reflects this, offering very few services and businesses that mostly cater for the needs of the farming community. Despite the lack of job opportunities and subsequent low population of the village, the school consists of about 290 learners, with an average of 35 to 40 learners per classroom. This is largely due to the fact that many people within the larger area send their children to this school, both because of its proximity (it is the closest school in the area) and for its good reputation. In comparison to other schools within the area, the school is well maintained and functions efficiently despite overcrowded classrooms.

Another possible reason for this may be the hostel facilities the school offers. Many parents travel far for work, reside in neighbouring areas/cities/townships or reside on the farms they work on during the week. This leads to many learners being placed in the care of the hostel staff or in some cases their retired grandparents. This is the case with most of Mrs Miller's learners, who mostly reside within the school hostel throughout the week, with family members fetching them over the weekends or the holidays. Mrs Miller herself is the 'hostel mother' and resides on the school premises with her family to watch over and care for the learners.

Mrs Uys's classroom

As with Mrs Miller's case, the school is located in a rural area that is comprised of a community of farmers and farm workers, which offer very few services and businesses. However, unlike the previous case, the school reflects this with its total of 84 learners, with an average of about 12 learners per classroom.

The school is relatively smaller than that of Mrs Miller, both in size of facilities and learner population. With no hostel facilities and its isolated location from cities and townships, the low learner population can be accredited to it being an undesirable option for those that do not reside nearby. Thus, the school population consists mostly of learners whose families work or farm in the surrounding area, and that also have the means to transport them to and from school every day.

Despite the isolated location of the school and low learner population, the school is well-maintained and well-equipped with classroom technology (projectors, wi-fi, smartboards, etc..).

3.4. Data collection

Qualitative data (which was later quantified) was collected and generated from observations of the ‘case’, and interviews with the teachers involved.

3.4.1. Observation

The observations were focused on a single English lesson of an hour duration, which was video recorded and transcribed for analysis and reflection. The teacher and student interactions were observed and recorded, and then, following the completion of the lesson, transcribed and coded by the researcher. The observation was a non-participant observation, meaning behaviour was observed and recorded from a distance (Nieuwenhuis, 2016). This form of observation is the least obtrusive and maintains a classroom environment that reflects its ‘normal’ dynamic – which is crucial to ensure that the recorded behaviour of the students or teacher is not influenced in a way that affects the accuracy of the observation.

3.4.2. Interview

After completion of the lesson, an interview was held with the participating teacher to discuss the lesson that was completed. The interview was conducted in a semi-structured manner, meaning it followed a predetermined line of inquiry but allowed further probing as the need arose (Nieuwenhuis, 2016). This form of interview was utilised to maintain a more open and casual rapport between the researcher and the participating teacher.

The interviews allowed the researcher to corroborate and reflect on the observations made, and the accuracy thereof with the participating teacher. Furthermore, the interviews allowed for a better insight into understanding the context of the participants involved – a necessity in the coding process when determining what was considered an everyday or a scientific concept. Lastly, the interviews served to confirm and highlight the issues regarding English discussed within Chapter 1.

3.5. Data analysis

For this study, an inductive and deductive analysis approach, which aligns with the exploratory case study design, was employed.

3.5.1. The observation transcription

The recorded observation was transcribed for further analysis. Drawing on the coding system created by Hardman and Teschmacher (2019), seen in Table 3.3 below, the

utterances of both the teacher and students were coded. These codes were deductively used to analyse data generated in a transcript. However, this process was iterative, whereby codes could shift depending on the actual data collected.

Table 3.3 – Coding System

Concepts	**Codes**
Elaborated Everyday Concept	EEC
Elaborated Scientific Concept	ESC
Scientific Term	ST
Teacher Repetition	TREP
Student Repetition	SREP
Feedback Elaborated	FE
Non-Elaborated Everyday Concept	NEEC
Incorrectly Elaborated Scientific Concept	IESC
Incorrectly Elaborated Everyday Concept	IEEC
Correct Student Response	CSR
Incorrect Student Response	ICSR
Non-Content Related Student Response	NCRSR
Non-Content Instruction	NCI
Non-Content Instruction Questions	NCI Q
Feedback Non-Elaborated	FN

Utterances in this case refer to complete units of speech that are distinguishable by a pause or change of speaker - these consisted of phrases, clauses, words, or combinations of all three (Green, 2007; Carter & McCarthy, 2006). See Table 3.4 below for examples of utterances for every concept code:

Table 3.4 – Examples of Codes

Codes	**Example**
EEC	Factories cause a lot of air pollution.
ESC	Pollution is the presence and or introduction of a substance which have harmful or poisonous effects.

ST	Pollution.
IEEC	So, sleeping in is when you usually get up at 5 in the morning to come to school and eat breakfast.
IESC	Noise pollution is when something is loud.
NEEC	Ok, like in factories, or loud music.
CSR	*(Teacher: Who knows what type of pollution do we get?)* Water pollution.
ICSR	Sky pollution
FE	No, that's the air.
TREP	(*Teacher: Pollution can be found in water, air, soil and waste.*) Pollution can be found in…
SREP	Soil, air and water
NCRSR	I want an elephant.
NCI	Ok, open your book on page 163.
NCI Q	Are you all shy now?
FN	Well done!

Once utterances were coded, the frequency of each concept was noted to find any emergent patterns and relationships amongst the utilised concepts and student responses.

The benefit of this type of analysis lies in how it moves away from the content of the data to focus on the manner in which it is conveyed, granting the researcher an opportunity to find a deeper understanding of the observed phenomenon. Within this specific study, it allows for the investigation of possible correlations between the context of the participants, the frequency of the concepts, and the coded utterances.

3.5.2. The Interview

A thematic analysis was utilized in the analysis of the interviews. A thematic analysis is a method of analysis that allows the researcher to identify and organize emergent themes within a data set (Nowel et al., 2017). These themes can refer to any significant idea or element within the data that relates to the research question or study (Braun & Clarke, 2006). The benefits of a thematic analysis lie in its ability to provide a detailed and complex description of the data, which allows for the researcher to study the

perspectives of the participants and identify commonalities (Braun & Clarke, 2006)Therefore, using the method allowed the researcher to gain a deeper insight into the complex context of the studied classrooms and generate a better understanding of the observed behaviour and interactions.

Furthermore, both an inductive and deductive approach was used within the thematic analysis. An inductive thematic analysis requires a researcher to code the data without any established coding framework, whereas a deductive thematic analysis is driven by the researcher's theoretical interest (Nowel et al., 2017). In this study, the semi-structured nature of the interview and interview guideline provided primary themes before the onset of the interviews (deductive), however additional subthemes arose from the data upon analysis (inductive).

3.6. Ethical Considerations

The following ethical principles were upheld and adhered to by the research team throughout the study.

3.6.1. Institutional approval

The study adhered to the ethics policy of the University of Cape Town and an application was submitted to the department of humanities' ethics board for ethical clearance before proceeding. Ethical clearance was granted: reference EDNREC20210704.

3.6.2. Informed consent

The researcher informed "the participants about all the aspects of the study" (p.125) and ensure they understand that participation is voluntary (Christensen, Johnson, & Turner, 2015). The researcher held a meeting with the participating teachers and relevant school authorities, where the procedure was explained in detail and consent forms were distributed (See Appendix A for relevant consent forms). Furthermore, due to the sample focusing on minors, the parents/guardians of the participating learners were also approached in the same manner (See Appendix B for relevant consent forms).

3.6.3. Assent

Assent refers to the "agreement from a minor to participate in research after receiving an age-appropriate explanation" (Christensen, Johnson, & Turner, 2015, p. 127). Due to the sample consisting of minors, the researcher ensured that the study was

explained to them in an age-appropriate manner and that learners understood that they have the opportunity to cease participation at any point, should they so wish (See Appendix C for relevant forms).

3.6.4. Anonymity

Anonymity was maintained by "keeping the identity of the research participants unknown" (Christensen, Johnson, & Turner, 2015, p. 134). The researcher concealed the identity of the participants and participating schools, providing a pseudonym where necessary, to ensure that the individuals will not be identifiable.

3.6.5. Confidentiality

Confidentiality involves "not revealing information obtained from a research participant to anyone outside the research group" (Christensen, Johnson, & Turner, 2015, p. 135). The researcher ensured that access to the gathered data (observations, recordings, etc.) is restricted and discretely dealt with.

3.7. Limitations

One of the biggest limitations of this study relates to its subjective and contextually bound nature, which is often the issue within qualitative studies. With a relatively limited and specific sample, and the utilisation of a case study design, the study lacks the required justification for scientific generalisations (Zainal, 2007). Aside from generalisation, another significant critique of qualitative approaches and methodologies relates to the rigour thereof. Due to the lack of quantitative instruments and devices, the rigour of qualitative research is vulnerable (Galdas, 2017). However, as this project is exploratory in nature, a purely quantitative study would not have been able to pick up nuances in the data in the way a qualitative study can. Moreover, this study does not seek to generalise to a larger population; rather, it seeks to understand, in-depth, specific pedagogical praxes as they play out in the classroom.

Furthermore, the use of an interpretivist paradigm and an inductive analysis approach implies that the conclusions drawn from the data are researcher-dependent, and thus at risk of research bias. Research bias refers to the distortion of results due to some or other influence, such as the perception and beliefs held by the researcher, during the research process (Galdas, 2017). Consequently, this bias may lead to misinterpretation of data and results and may affect the validity and reliability of the study and its findings (Smith & Noble, 2014). In order to mitigate some of this potential

bias, readers are presented with examples of coded utterances in Table 3.4. In this way, researchers can use the codes to replicate what has been done in this study.

3.8. Conclusion

Following the research onion design by Saunders et al. (2018) as a guideline, interpretivism was selected as the underlying research philosophy, with both inductive and deductive approaches to theory development. Working from this pre-established paradigm, a qualitative research design was selected as the methodological choice, with an exploratory case study as the methodology strategy.

Two Grade 4 English Home Language classrooms for the study were selected as the 'cases', through a criterion sampling strategy. Data was collected and generated from transcribed observations of these 'cases', as well as, semi-structured interviews with the two participating teachers. The interviews were thematically analysed and the transcribed observations were analysed through coding utterances of both the teacher and students using the pre-established codes from Hardman & Teschmacher (2019).

Upon completion of the methodological consideration discussion, the limitations of the study were explored and discussed, as well as the ethical consideration that was implemented before and during the conduction of the study.

Chapter 4: Results and Analysis

In this chapter, the data gathered from the observations and interviews were analysed, in order to answer the research questions. The analysis centred around the English Home Language lessons presented by Mrs Uys and Mrs Miller. Each teacher conducted a single lesson at their respective schools of employment, which was transcribed, coded, and analysed. For the purpose of answering the posed research questions and ensuring an accurate comparison, the coded utterances of each lesson were analysed and presented in terms of its frequency of occurrence and percentage. A frequency count was utilised to calculate the percentages of coded utterances for the teacher and the learners, respectively. This enabled the researcher to compare the presence of scientific and everyday concepts across two contexts, with a view to determining if there were any overt differences. Furthermore, interviews were conducted with the two participating teachers to discuss the observed lessons and gain further insight into the context of participating the learners and teacher. These interviews were also analysed for arising themes and subthemes, in order to allow for a richer and deeper understanding of the context.

4.1. Thematic Analysis

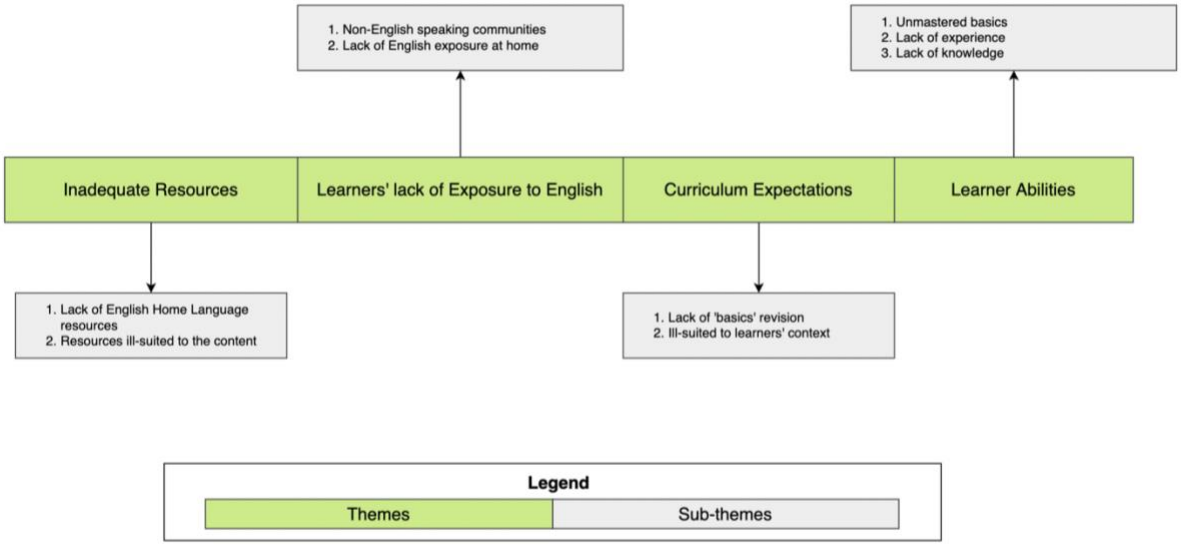
The interviews conducted with the two teachers primarily focused on three aspects, namely, gaining background and contextual information about the teacher and the learners, discussing the observed lesson, and gaining insight into the teachers' experiences in regard to teaching English. The purpose of the first two aspects was to aid in coding the transcription and in laying out a better description of the two samples. However, the latter was analysed to find any arising themes in regard to teaching English.

Within their individual interviews both teachers unanimously stated that they found teaching English as a subject 'difficult'. This opened two lines of questioning from the researcher. Firstly, to investigate what the perceived difficulties they experienced are and, secondly, what they did to overcome these mentioned difficulties.

4.1.1. The perceived difficulties teaching English

The researcher identified 4 main themes in the teacher responses, as illustrated in Figure 4-1 below:

Figure 4-1 – What are some of the difficulties teaching English you have experienced?



The teachers highlighted *inadequate resources, learners' lack of exposure to English, curriculum expectations* and *learner abilities* as the primary difficulties experienced when teaching English.

Inadequate Resources

The inability of available resources to meet the needs of the teachers and the learners within their classrooms was discussed during the interviews. The sub-themes included a *lack of English Home Language resources* and *resources ill-suited to context*. Mrs Miller felt that the available resources fell short in that they covered content that learners could not relate to or were unfamiliar with due to their context. Furthermore, she felt that focus was placed on creating English first additional language resources, leaving English home language resources lacking.

Learners' Lack of Exposure to English

The learners' lack of exposure to English within their various contexts was the most prominent and consistent theme across the two interviews. Within this theme the following sub-themes were noted: *Non-English speaking communities* and a *lack of exposure to English at home*. Both teachers highlighted the fact that their learners' context within their home or wider social environments did not allow for the adequate exposure needed to master the subject or language. Both teachers state that their learners come from homes where the spoken language of choice is *not* English. Additionally, Mrs Miller mentions that the primary caregivers in most learners' homes are their grandparents, who more often than not aren't proficient in English.

Furthermore, the participating learners from both classrooms reside in communities consisting exclusively of non-English speakers. This includes the schooling environment, where most teachers are non-native English speakers.

Curriculum Expectations

In the interview, both teachers highlighted issues regarding the expectations of the CAPS curriculum they follow. For Mrs Uys this related to the lack of basics' revision, whereas for Mrs Miller the curriculum was ill-suited to the context of the learners. Mrs Miller explains that the curriculum does not allow for teachers to go back and touch up on basics, such as sound formation or spelling rules; assuming that these basics must already be mastered. For Mrs Miller, the prescribed assessments and 'curriculum-aligned' textbooks, were not suited to the context of her learners. She explains that much of the content that is expected to be 'applicable' and within their realm of knowledge, is not.

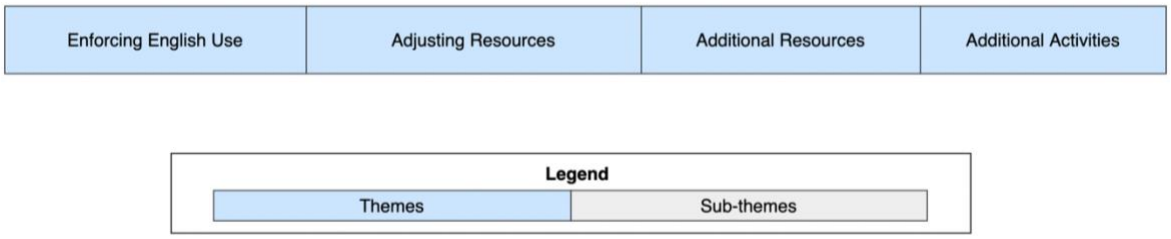
Learner Abilities

Both teachers experienced some difficulty due to the learners' ability in regards to English upon entering Grade 4. The sub-themes include: The *unmastered basics, lack of experience*, and *lack of knowledge*. Both teachers felt that the learners have not mastered many of the 'basic' skills, such as sounding out or spelling words that were on the foundation phase level. Furthermore, due to a lack of exposure, learners lacked knowledge in regards to both the subject and language, meaning that they did not have the vocabulary, mastered concepts, or spelling skills, expected of learners at their level. Lastly, the teachers thought that learners lacked the experience needed to master the subject and language. This is also further accredited to learners' lack of practice outside of the classroom, which, subsequently, led to learner lack of confidence in their ability inside the classroom.

4.1.2. Overcoming these difficulties

The researcher identified 4 common themes in the teacher responses, indicated in Figure 4-2 below:

Figure 4-2 – How have you attempted to overcome these difficulties?



The teachers highlighted *enforcing English use, adjusting resources, additional resources,* and *additional activities* as methods of addressing the mentioned difficulties. No sub-themes were noted.

Enforcing English Use

Throughout the two interviews, both teachers brought up enforcing English use within their classroom as a strategy to address the difficulties they face. This exclusive use of English applies to all interactions between the learners and the teacher that take place within the classroom.

Adjusting Resources

Within the interview by Mrs Miller, adjusting resources was noted as a theme, with specific reference to textbook and assessment content. She states that the content must be continuously adapted to better suit the context of her learners.

Additional Resources

The use of additional resources within lessons as a solution is another theme within the interviews. It was suggested that the use of FAL materials, media and teaching assistants were helpful. Additionally, the inclusion of additional information, such as definitions of words that are found within a task/assessment in preparation thereof, is also useful.

Additional Activities

The use of additional activities that are not expected to be included within the curriculum is important. Both teachers noted a variety of activities they enforce upon the learners in order to address any gaps within the learners' abilities. Some of the mentioned activities include, additional reading, spelling word tasks, and also activities focused on improving language use and vocabulary.

4.1.3. Teaching English as a subject

Within the reviewed literature in Chapter 1 and 2, it is suggested that teaching English within South African classrooms are marred with challenges that teachers are often not equipped to successfully deal with. Considering the aforementioned themes, the two observed lessons seemingly do align with this statement.

The themes indicated that both teachers faced difficulties in relation to teaching English as a subject and also highlighted various strategies used to cope with these challenges. At face value, this suggests that the teachers managed to cope with the difficulties they face. However, this may not be the case. Despite having included these strategies throughout the academic year they still described teaching the subject as 'difficult' or a 'struggle', suggesting that the equipped strategies may aid in coping with the difficulties but do not resolve them.

The significance of this conclusion lies in the apparent need it indicates within these classrooms – a need for an approach to better address these challenges. A need that motivates the exploration of the Double-Move within these classrooms.

4.2. Transcription Coding: Mrs Uys's Class

The class that was observed consisted of 8 Grade 4 learners, all Afrikaans speakers, and the lesson duration was 50 minutes. The number of learners in the lessons contrasts with what is expected from most South African classrooms, which consists of 45 learners on average. Therefore, the observation and analysis do not reflect the reality of the majority of South African classrooms but instead that of a more privileged minority. The low learner count in this specific classroom is largely due to the isolated location of the village the classroom is situated in. Despite both classrooms being rural and similar in location, the classroom of Mrs Miller is within closer proximity of an outlaying township than Mrs Miller, making it more accessible, and therefore preferable, to its inhabitants.

4.2.1. The lesson

The English lesson selected dealt with the topic of 'Pollution', with a focus on improving transactional writing abilities. The instruction of the teacher was delivered in primarily English with some use of Afrikaans during discussions or classroom management. For the purpose of discussion in this dissertation, the Afrikaans was translated to English by the primary researcher, a fluent Afrikaans speaker.

4.2.2. Analysis and Results

A total of 463 utterances were coded from the lesson transcription. Of the coded utterances, 81% were that of the teacher and 19% that of the learners. This type of teacher dominance indicates that the discourse of the lessons leans more towards presentational teaching, where the teacher presents all the content as is often done in direct teaching and is thus not truly dialogical teaching (Barnes, 1992). Considering that active participation and collaborative activity are required in the co-construction of meaning, non-dialogical interaction implies that instruction was not optimal in accessing learners' ZPD (Barnes, 1992; Wells, 1994; Hedegaard, 1996).

Table 4.1 - Teacher's utterances: Mrs Uys

Code	Frequency (%)
Instruction	
EEC	2%
ESC	1%
ST	2%
NEEC	8%
IESC	1%
IEEC	1%
NCI	30%
Feedback	
FE	4%
FN	13%
TREP	6%
Teacher Question Types	
Closed	16%
Open	0%
NCI Qs	16%

Table 4.1 shows that 45% of instruction was non-content focused. By itself, a high frequency of non-content instruction (NCI and NCIQ) could prove problematic, as it fails to teach any specific content and thus fails to engage learners' ZPD (Hardman & Teschmacher, 2019). The majority of non-content instruction was due to classroom management, for example, the teacher would say "no, come come" or "you have to participate", and that would be coded as NCI.

Of the content-focused utterances, 4% consisted of Scientific Concepts, 1% being Elaborated Scientific Concepts (ESC), 2% being Scientific Terms (ST), and 1% being Incorrectly Elaborated Scientific Concepts (IESC). The following extract provides an example of one of the Incorrectly Elaborated Scientific Concepts (IESC) within the lesson:

Extract 4-1

Line	Speaker	Dialogue	Code
1.	Teacher:	Noise pollution is when something is loud.	IESC
2.	Teacher:	It's too loud.	NEEC
3.	Teacher:	Ok, like in factories, or loud music.	NEEC

In this extract, the teacher attempts to explain the concept of 'noise pollution', defining it as 'when something is too loud'. However, according to Gupta et al. (2018), noise pollution is defined as the unwanted, loud or unpleasant 'sound present in the environment, for a duration which causes or can cause temporary or permanent harm to the human beings or animals' (p.300). Considering this definition, it is clear that the elaboration provided by the teacher was lacking and, therefore, created the opportunity for learners to form incorrect assumptions. By stating that noise pollution is 'something that is too loud', learners may assume that this is its defining feature and classify anything they perceive as 'too loud' as noise pollution.

In comparison to Scientific Concepts, 11% of utterances consisted of Everyday Concepts, 2% being Elaborated Everyday Concepts (EEC), 1% Incorrectly Elaborated Everyday Concepts (IEEC), and 8% being Non-Elaborated Everyday Concepts (NEEC). The preference for Non-Elaborated Everyday Concepts over Elaborated Everyday Concepts, suggests that there were opportunities for the inclusion of learners' local knowledge that was missed. Consider the following extract:

Extract 4-2

Line	Speaker	Dialogue	Code
1.	Teacher:	What does it mean, Chris, to go green?	CQ
2.	Student:	It means to recycle more.	CSR
3.	Teacher:	Ok, and to waste less.	FE
4.	Teacher:	Om meer groen te lewe. (*To live more green*)	NEEC
5.	Teacher:	Use, umm, less electricity, ok.	NEEC
6.	Teacher:	To recycle our waste at home, ok.	NEEC

In the elaboration of the concept ‘going green’, the teacher provides the learners with examples of ways in which one can ‘go green’. She provides practical and relevant ways in Line 3-6; however, she does not elaborate further on what exactly each entail. Most of the students come from farming backgrounds and are highly familiar with the concept of composting to create fertilizer for crops, as it is a practice that many surrounding farms engage in. This could have been used as an elaboration on the concept ‘to recycle our waste at home’ (line 6). This would have furthered learner understanding through the inclusion of their local knowledge.

Throughout the lesson, there were 3 attempts of linking Scientific Concepts to Everyday Concepts. Extract 4-3 below is an example of one such occurrence:

Extract 4-3

Line	Speaker	Dialogue	Code
1.	Teacher:	Acid rain.	ST
2.	Teacher:	What is acid rain?	CQ
3.	Student:	Suurreën. (acid rain)	ICSR
4.	Teacher:	Ok.	FN
5.	Teacher:	Dit is suurreën in afrikaans. (*It is ‘suurreën’ in Afrikaans*)	TREP
6.	Teacher:	Why is it bad for the environment?	CQ
7.	Student:	It eat our plants and trees.	ICSR
8.	Teacher:	Ok.	FN
9.	Teacher:	It can damage the plants.	NEEC
10.	Teacher:	Especially when your dads are planting tomatoes, ok.	EEC

The Scientific Concept of ‘acid rain’ was linked to the farming context of the learners, linking it to the effect it has on the tomatoes grown by the families. This aids in the contextualisation of the concept. Ultimately, making it more relevant to the lives of the learners. However, this did go far enough to develop learner understanding because the teacher fails to elaborate on why acid rain causes the damage, or why this rain is called ‘acid’.

Another aspect to consider is the utilization of different question types by the teacher. Of the questions asked, 50% were closed-ended questions (CQ). Closed-ended questions have pre-established correct answers, that often only prompt Yes/No, one-word, or short factual responses from the learners. This prevents learners from sharing their own local knowledge in the learning context and, therefore, sacrifices the opportunity for a meaningful exchange with the learner (Hardman & Teschmacher, 2019).

However, closed-ended questions are often a useful way for teachers to initiate interaction and learner participation, often resulting in Initiation-Response-Evaluation/Feedback (IRE/F) pattern cycles (Hicks, 2003). These cycles place the teacher into an instructional role, where they as the more knowledgeable other shapes the classroom discussion by providing conversational slots for learners to fill (Hicks, 2003). The provided learner responses from these slots are then evaluated by the teacher, who would provide feedback to the learners. This teacher feedback can take many forms and fulfil various functions, mostly with the goal of reinforcing learner motivation and engagement or reshaping learners' understanding of the concept at hand (Hicks, 2003; McKinney, 2011; Lefstein & Snell, 2011)

The alternation and turn-taking within IRE/F cycles, at face value, promote active participation and collaborative activity between the teacher and learners. The extract below is an example of such an IRE/F pattern cycle:

Extract 4-4

Line	Speaker	Dialogue	Code
1.	Teacher:	Ok, so what is the main cause of pollution?	CQ
2.	Student:	Waste	ICSR
3.	Teacher:	Ok.	FN
4.	Teacher:	But who causes that?	CQ
5.	Teacher:	What causes that?	CQ
6.	Teacher:	Wie maak 'waste'? (*Who makes waste?)*	CQ
7.	Student:	People.	CSR
8.	Teacher:	So, it's the humans.	FN
9.	Teacher:	Ok.	FN
10.	Teacher:	So how can we prevent pollution?	CQ

Extract 4-4, shows the teacher initiating interaction through the use of a closed-ended question, following the presentation of a video on pollution. The interaction largely follows the conventional IRE/F pattern, with closed-ended questions prompting one-word factual responses, before feedback is provided and the cycle restarted. However, considering that for every 1 utterance made by a student, the teacher makes 4, it suggests teacher-dominated interaction instead of the development of a collaborative dialogue. This implies that interaction is non-dialogical, and therefore at risk of being ineffectual in the process of learning (Lefstein & Snell, 2011).

Additionally, closed-ended questions are also criticized for not prompting learners to participate in critical thinking (Lefstein & Snell, 2011). A criticism that is

validated when the questions and resulting responses from the extract above are considered. Instead of challenging learners to construct their own meaning through critical thinking, the utilized closed-ended questions relied on the learner's ability to recall the information they were presented within the video. This implies that despite the posed closed-ended questions resulting in 62% correct student responses (CSR), it does not reflect learner understanding but rather learners' ability to recall factual information. In short, a feat for short-term memory, instead of for the ZPD.

Feedback encompasses 23% of teacher utterances, with 57% of the feedback being non-elaborated feedback (FN), 26% teacher repetition (TREP) and 17% elaborated feedback. The domination of non-elaborated feedback undermines the dialogical nature of the interaction, by shifting it to a more presentational talk. In most cases throughout the lesson, non-elaborated feedback (FN) and teacher repetition (TREP) was often followed by another closed-ended question instead of elaboration on the discussed topic, suggesting that the utilized questions did not create an opportunity within the IRE/F cycles for learners to further engage with the topic. This shift minimises the opportunity for learners to engage in a collaborative dialogue that is necessary for mediation and the co-construction of meaning (Lefstein & Snell, 2011).

Furthermore, the lack of elaboration on the feedback indicates a missed opportunity for the teacher to facilitate learner understanding through the inclusion of their local knowledge (Hardman & Teschmacher, 2019). As an example, consider that pollution, especially water and solid waste pollution, is something that learners are privy to within rural villages, where this study was carried out.

Table 4.2 - Student utterances

Code	Frequency (%)
Student Responses	
CSR	25%
ICSR	15%
SREP	4%
SQ	4%
NCRSR	52%

Student responses take up 19% of the overall utterances, with 52% thereof being Non-Content Related Student Responses (NCRSR), and 48% being Content-Related

Responses. For example, common student utterances such as “yes, ma’am” or “no, ma’am” are coded as NCRSR when followed by a Non-Content Instruction Question (NCIQ) by the teacher, such as her periodic check-ins with the students about their task progress. However, these could also be coded as Content-Related Responses if the student response followed a closed-ended question by the teacher.

The continuous use of closed-ended questions, which prompts one-word responses rather than open dialogue, could be the reason that students don’t occupy much talk time as no real dialogue is opened. Furthermore, though observation was done on a non-participant basis with the intention of being unobtrusive, there was still a high possibility that many learners were unwilling to participate for fear of speaking in front of a stranger. Consider the following extract:

Extract 4-5

Line	Speaker	Dialogue	Code
1.	Teacher:	Peter?	NCIQ
2.	Peter:	Ah ah. (*no*)	NCRSR
3.	Teacher:	No, come come.	NCI
4.	Teacher:	You have to participate.	NCI
5.	Teacher:	Peter?	NCIQ
6.	Peter:	Ah ah. (*no*)	NCRSR
7.	Teacher:	Otherwise, I'm gonna do it.	NCI
8.	Peter:	Ek wil nie. (*I don’t want to*)	NCRSR
9.	Teacher:	Come on, you have to pronounce the words.	NCI
10.	Teacher:	Come.	NCI

As a consolidation activity, the learners were asked to write a short paragraph on what they learned about pollution and then to share it with their friends. In this extract, one of the students, Peter, refuses to share what he has learned with his friends or teacher. This extract is one example showing 1 of 8 instances where students refused to participate. At first glance, the extract could serve to prove the lack of active participation and, in turn, reinforces the idea that interaction was non-dialogical. However, it is important to consider the influence that the presence of the researcher may have on learner behaviour.

4.3. Transcription Coding: Mrs Miller’s Classroom

The specific class of Mrs Miller that was observed consisted of 36 Grade 4 learners, a mixture of 69% Sepedi, 11% Setswana, 8% Sesotho, and 12% Other speakers, and

the lesson duration was 65 minutes. This sample is a more accurate reflection of the reality of many South African classrooms.

4.3.1. The lesson

The lesson selected dealt with the topic of 'Volunteering and Animal Shelters', with a focus on improving transactional writing abilities. The instruction of the teacher was delivered in English, with Afrikaans and Sepedi words used throughout for classroom management, discussion, and student praise. A student teacher was also present for the duration of the lesson and provided some assistance to the teacher and students.

4.3.2. The results and analysis

A total of 969 utterances were coded from the lesson transcription. Of the coded utterances, 84% were that of the teacher and 16% that of the learners. Comparatively, this reflects the same teacher dominance encountered in the lesson by Mrs Uys. Teaching also leans more toward presentational teaching and, thus, runs the same risk of engaging in non-dialogical interactions that may impede learners from accessing their ZPD (Barnes, 1992; Wells, 1994; Hedegaard, 1996).

Table 4.3 - Teacher's utterances

Code	Frequency (%)
Instruction	
EEC	14%
ESC	1%
ST	2%
NEEC	15%
IESC	1%
IEEC	1%
NCI	29%
Feedback	
FE	5%
FN	6%
TREP	4%
Teacher Question Types	
Closed	14%
Open	0%

NCI Qs	9%

Table 4.3 shows that 38% of instruction was non-content focused and 62% content focused. In comparison, this is an indication that the dialogue and instruction that took place potentially allowed learners to access their ZPD but that some wasted opportunity existed (Hardman & Teschmacher, 2019). This is similar to the lesson by Mrs Uys. However, where the non-content focused instruction of Mrs Uys's lesson focused primarily on classroom management, this lesson focuses on the explanation of activities (see Extract 4-6) and general 'chit-chat' with learners (see Extract 4-7).

Extract 4-6

Line	Speaker	Dialogue	Code
1.	Teacher:	The ones that already received their paper,	NCI
2.	Teacher:	you are going to see there is a space for learner	NCI
3.	Teacher:	Please write your name and your surname there	NCI
4.	Teacher:	because we more than one Segopatso in the class and more than one Semano.	NCI

Extract 4-7

Line	Speaker	Dialogue	Code
1.	Teacher:	Lola and Roxie also saw one of my chickens had three little chicks	NCI
2.	Teacher:	over the weekend she came out on this side of the fence	NCI
3.	Teacher:	and they were playing there in front	NCI
4.	Teacher:	and I thought: 'Oooh, Kentucky fried chicken drive-through'	NCI

Of the content-focused utterances, 4% consisted of Scientific Concepts, 1% being Elaborated Scientific Concepts (ESC), 2% being Scientific Terms (ST), and 1% being Incorrectly Elaborated Scientific Concepts (IESC). The following extract provides an example of one of the Elaborated Scientific Concepts (ESC) within the lesson:

Extract 4-8

Line	Speaker	Dialogue	Code
1.	Teacher:	Ok, so the first thing is the 'animal shelter',	ST
2.	Teacher:	and what they say is that it's a structure	ESC
3.	Teacher:	that provides protection for injured, sick or unwanted animals.	ESC

4.	Teacher:	So, it's a place where those animals can go and they are taken care of.	ESC

This extract illustrates the elaboration of the Scientific Concept of 'animal shelter', which was the main topic for the lesson.

In comparison to Scientific Concepts, 31% of utterances consisted of Everyday Concepts, 14% being Elaborated Everyday Concepts (EEC), 1% Incorrectly Elaborated Everyday Concepts (IEEC), and 16% being Non-Elaborated Everyday Concepts (NEEC). Unlike the lesson by Mrs Uys, in this lesson Elaborated and Non-Elaborated Everyday concepts are proportionate. The teacher utilizes elaborated concepts to include local knowledge throughout the lesson by drawing on the learners' daily experiences and personal stories. Consider the following extract:

Extract 4-9

Line	Speaker	Dialogue	Code
1.	Teacher:	Can you sleep in, in the mornings when you must come to school?	CQ
2.	Students:	No, ma'am!	CSR
3.	Teacher:	No!	TREP
4.	Teacher:	You will be in trouble with the uncles there at the hostel.	FE
5.	Teacher:	So, sleeping in when you usually get up at 5 in the morning to come to school and eat breakfast	IEEC
6.	Teacher:	before we come to school.	IEEC
7.	Teacher:	So, over a weekend if you're at home especially,	NEEC
8.	Teacher:	where there is no timetable,	EEC
9.	Teacher:	at hostel unfortunately there is still a timetable,	EEC
10.	Teacher:	over holidays and open weekends when you go home,	EEC
11.	Teacher:	I am sure you don't get up at 5 in the morning?	CQ

In this extract, the concept of 'Sleeping in' is explained to the learners by contextualising it. The majority, if not all, of the learners live in the hostel on the school grounds and only go home over weekends or holidays. So, through using context learners are familiar with and placing the concept within that context, learners can draw from their own experiences to master the concept. These concepts are crucial for building the foundation for the development of the scientific concepts (Fleer, 2009). However, mastering Everyday Concepts only illustrates the learners' actual level of

development and only the inclusion of Scientific Concepts opens learners' ZPD (Leontiev, 1985)

Throughout the lesson, there were 10 attempts of linking Scientific Concepts to Everyday Concepts. Extract 4-10 below is an example of one such occurrence:

Extract 4-10

Line	Speaker	Dialogue	Code
1.	Teacher:	Emotional toll.	ST
2.	Teacher:	That is when you become sad or stressed.	IESC
3.	Teacher:	Neh?	CQ
4.	Students:	Yes, ma'am.	ICSR
5.	Teacher:	Some of you, because exam is starting next week,	NEEC
6.	Teacher:	It might be at the end of exam that some of you will tell me 'oe ma'am!'	EEC
7.	Teacher:	"Oe, the exam took an emotional toll on you"	EEC
8.	Teacher:	because I was so stressed.	EEC

Within this extract the teacher attempts to explain the scientific concept 'Emotional toll', stating that its defining feature is becoming sad or stressed. She then proceeds to link this concept to a time learners experience stress, namely, during the examination period. This contextualisation of the scientific concept draws on learners' experience as the foundation for the development of the concept within the ZPD. However, this attempt may not have been as successful as it could have been because the elaboration provided for 'emotional toll' was lacking, causing all subsequent elaborations to fall short.

Returning to the codes in Table 4.3, the applied question types are considered. Of the questions asked, 62% were closed-ended questions (Closed), 28% Non-Content Instruction Questions (NCI Qs), and 1% were open-ended questions (Open). The dominant use of closed-ended questions brings about the same issues discussed previously, namely: the lack of opportunity for a meaningful exchange with the learner, not prompting learners to participate in critical thinking, and deterring learner engagement in collaborative dialogue (Lefstein & Snell, 2011; Hardman & Teschmacher, 2019). Mrs Miller also utilizes closed-ended questions to initiate interaction and learner participation. Closed-ended questions were used to prompt factual responses, before feedback is provided and the cycle restarted, creating the same Initiation-Response-Evaluation/Feedback (IRE/F) pattern cycles (Hicks, 2003).

As was seen in the lesson by Mrs Uys, these interactions were not dialogical in nature when considering that for every 1 student utterance there would be 5 teacher utterances.

It is important to note here that, despite the absence of dialogical interaction, closed-ended questions are not rendered pedagogically hollow. Closed-ended questions that are followed by a well utilized feedback move can serve various important purposes. However, this depends on whether the feedback move elicits discussion, motivates learner engagement, or reshapes learners' understanding concept (Hicks, 2003; Mercer, 2005; McKinney, 2011; Lefstein & Snell, 2011; Hardman, 2021) However, the feedback moves in both observed lessons in this project did not lead to dialogue and therefore, dialogical interaction was missing.

The feedback provided within these cycles encompasses 23% of teacher utterances, with 13% of the feedback being non-elaborated feedback (FN), 4% teacher repetition (TREP) and 17% elaborated feedback. Similarly, to the lesson by Mrs Uys, non-elaborated feedback (FN) and teacher repetition (TREP) was often followed by another closed-ended question instead of elaboration on the discussed topic. This would suggest that the utilized questions did not create an opportunity within the IRE/F cycles for learners to further engage with the topic, as was the case within the lesson by Mrs Uys. However, in this lesson, it seems to not be completely accurate. Consider the following extract:

Extract 4-11

Line	Speaker	Dialogue	Code
1.	Teacher:	Why are there places like animal shelters?	CQ
2.	Teacher:	Letsha?	NCIQ
3.	Student:	Many people can adopt a puppy there.	CSR
4.	Student:	Then you can take it and make it yours.	CSR
5.	Teacher:	Ok, good!	FN
6.	Teacher:	Ooh Letsha, goosebumps!	FN
7.	Teacher:	Good word there…	FE
8.	Teacher:	'Adopt a puppy'.	NEEC
9.	Teacher:	What does that mean?	CQ
10.	Teacher:	Let me see who has not participated.	NCI
11.	Teacher:	Khosi, what does it mean when you adopt a puppy?	CQ

12.	Student:	It’s when you take something and make it yours.	CSR
13.	Teacher:	Mooi! (*Nice*!)	FN
14.	Teacher:	When you take something and make it yours.	TREP
15.	Teacher:	and promise to take care of it for the rest of your life	EEC
16.	Teacher:	and make it yours	EEC
17.	Teacher:	and promise to take care of it for the rest of your life.	EEC
18.	Teacher:	Is it only puppies you can adopt?	CQ
19.	Students:	No, ma'am!	CSR
20.	Student:	And animals?	CSR
21.	Teacher:	What else?	CQ
22.	Student:	Babies!	CSR
23.	Student:	Children!	CSR

In the extract above, the teacher attempts to elaborate more on the concept of ‘animal shelters’, by exploring why they exist. In lines 1,9,11,18 and 21, the teacher uses closed-ended questions. However, there is no significant shift in the topic as they all still relate to the question posed in line 1. Instead, each subsequent closed-ended question seemed to be contributing to or adding on to the one before, as a way to guide learners’ thinking.

Table 4.4 - Student utterances

Code	Frequency (%)
SREP	4%
CSR	44%
ICSR	12%
NCRSR	31%
SQ	9%

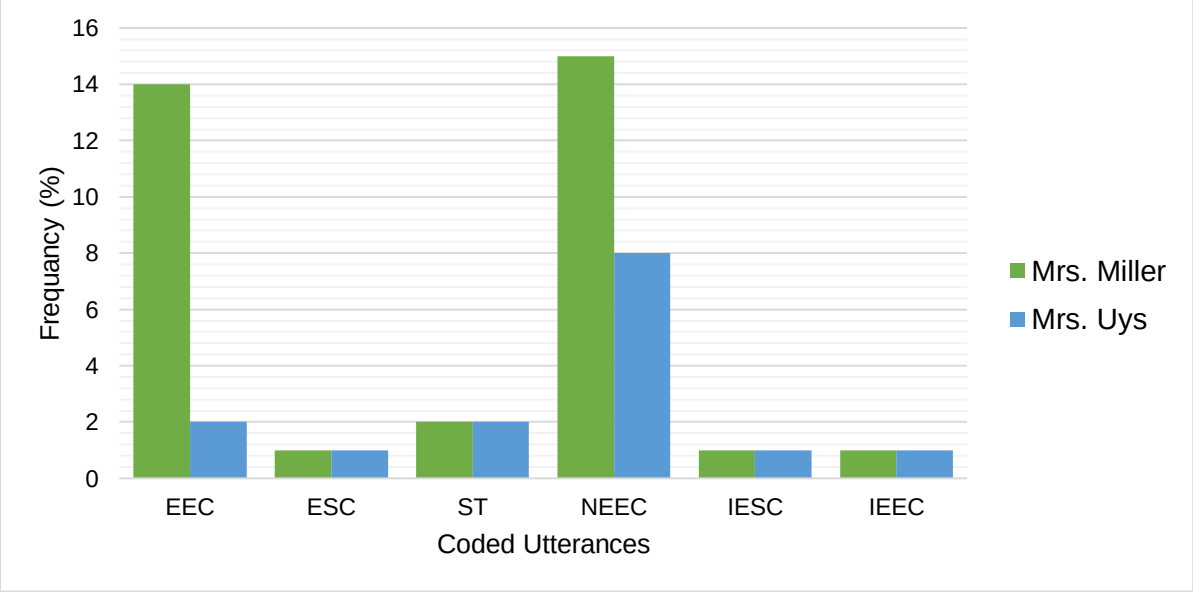
Student responses take up 16% of the overall utterances, with 31% thereof being Non-Content Related Student Responses (NCRSR) and 69% being content-related responses. This contrasts with the lesson presented by Mrs Uys, where the majority of learner utterances stem from non-content related responses. Within this lesson, learners stayed on task, shared personal stories (e.g. a learner spoke about a bird they are taking care of because it fell out of a tree), and asked various content related questions; illustrating an interest in the topic being taught.

Of the content-related responses, 44% were Correct Student Responses (CSR) and 12% Incorrect Student Responses (ICSR). Correct student responses were all prompted from closed-ended questions, that relied on the learner's ability to recall information from previous lessons. Furthermore, 'Yes/No' or one-word responses made up most correct student responses. This all reinforces the idea that closed-ended questions do not prompt learners to construct their own meaning through critical thinking.

4.4. Comparing the two lessons

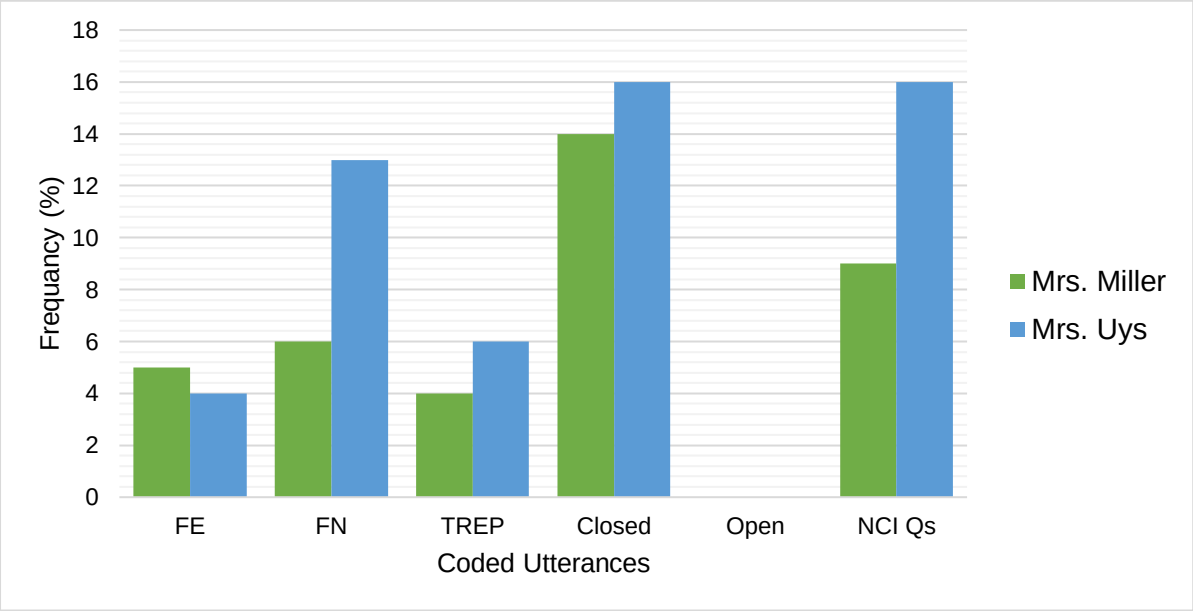
Concluding the separate analysis of the two lessons, it is useful to compare the data in order to explore potential correlations and variables. Figure 1.1 and Figure 1.2 below illustrate the comparison of utterance frequencies across the two lessons.

Figure 4-3 – Comparison of Everyday and Scientific Concepts



In figure 4-3 there is a significant difference between teachers in regards to the use of Everyday Concepts and no difference between their use of scientific concepts. The frequency percentage of both Elaborated Everyday Concepts (EEC) and Non-Elaborated Everyday Concepts (NEEC) are significantly higher in Mrs Miller's class (*see Chapter 5*).

Figure 4.4 – Comparison of Other Coded Utterances



Comparatively, in regards to the rest of the coded utterances, Mrs Uys's lesson presents higher frequency percentages for all codes except Elaborated Feedback (FE). There are significant differences in Non-Content Instruction Questions (NCI Qs) and Non-Elaborated Feedback (FN).

The fact that there are many similarities and yet also significant differences, suggests that there are possible correlations and potential relationships to be investigated. An especially interesting relationship to explore is between increased use of Everyday Concepts and the increased content-focused responses of the learners, as well as increased use of Everyday Concepts and decreased classroom management. Both elude to the idea that the use of everyday concepts motivates learner participation and interest – a point of discussion in the chapter to follow.

4.5. Conclusion

In this chapter, an analysis of the data collected from the interviews and the observation transcriptions was conducted.

The interviews underwent a thematic analysis in order to find any emergent ideas in regards to the difficulties the teachers face when teaching English and the strategies used to overcome these difficulties. Furthermore, the observation transcriptions were coded according to the codes utilized by Hardman & Teschmacher (2019). These codes were quantified into frequency percentages and analysed to find any potential relationships amongst them. Lastly, a comparison was drawn between

the results from the two lessons. All the results and subsequent findings within this chapter will be discussed in Chapter 5.

Chapter 5: Discussion and Conclusion

Following the analysis of the collected data, various findings have been noted that warrant further discussion. These findings are sorted into three sections, the first of which is dedicated to answering the posed research questions, followed by a discussion on the use of language within the observed classrooms, and finally, a discussion dedicated to the integration of these two previous sections.

5.1. Everyday and Scientific Concepts in English Language classrooms

5.1.1. The Coding Process

Both everyday concepts and Scientific concepts were present throughout the two observed lessons. However, to allow for a better understanding of the data, some aspects of the coding process itself need to be discussed, the first being the ambiguity surrounding concepts within the English language subject. Though there exists a fair number of concepts within the English language subject (such as grammar, spelling rules, parts of speech, etc…), defining what was considered a scientific concept and what was considered an everyday concept was one of the primary concerns upon commencement of this study.

Unlike STEM classrooms, scientific concepts and everyday concepts within language classrooms are far less clear-cut, especially in relation to aspects such as writing which focused on skill development rather than the concretion of a concept. Within this study, both lessons focused on transactional writing and therefore lacked concrete concepts that can be defined as specific to the subject. This presented a peculiar challenge in the coding of the utterances. When considering the data as a whole, it could be argued that all content within the lesson is built upon the scientific concept of ‘Letter Writing’ or ‘Paragraph Writing’, with instruction primarily consisting of guidance and feedback on the structure. This led to utterances not always being able to fit neatly into the defined codes or categories but instead required the researcher to use their discretion throughout the analysis process. However, this issue was alleviated somewhat thanks to the adopted cross-subject integrational approach. The letter or paragraph, like the majority of writing activities, necessitated a topic and information in the creation of its content. It is for this reason that the subject did include STEM terminology and concepts. Though, not concepts specific to the English Language subject, these concepts were still taught and thus coded and included.

Another aspect that needs to be discussed in regards to the coding process, is the contextually dependent nature of what is considered ‘everyday’ and what is considered ‘scientific’. Every classroom is unique in its context, shaping what is considered as ‘everyday knowledge’ or the way in which ‘scientific knowledge’ appear within the classroom. Mrs Miller’s classroom was a prime example of this. During the interview with Mrs Miller, she mentioned her students’ amazement and curiosity when discussing cell phones - something that is widely considered as part of everyday life. Similarly, within her lesson, learners included chickens and goats as part of the concept of ‘pets’, as opposed to, say, cats and goldfish. This resembles the interpretive nature of the coding process that, once again, required the researcher to use their discretion throughout.

5.1.2. Scientific Concepts in English Language classrooms

Scientific concepts were used throughout both English language lessons, though at 4% they made up a small portion of the teachers’ content-focused utterances. This answers the secondary research question of whether or not teachers use scientific concepts in English Language classrooms. However, within these specific lessons, the majority of these used scientific concepts were not exclusive to the English Language subject. As discussed previously, concepts that were more representative of those found within STEM subjects were utilized instead.

This brings focus to the next secondary research question: Are scientific concepts elaborated in the lesson? Here the answer is more complex. According to the data, of the 4% of scientific concepts, only half were elaborated scientific concepts, and only half of those elaborated scientific concepts were correct. So yes, scientific concepts are elaborated, but only *occasionally in this specific context*. This in itself suggests an issue within lessons, as learners may be given scientific terms without being given an explanation thereof, creating an opportunity for confusion and misunderstanding during the process of concept formation. However, though scientific concepts necessitate a scientific elaboration, everyday concepts should not be overlooked. Instead, everyday concepts can prove effective in aiding understanding of scientific concepts and the elaboration thereof.

5.1.3. Everyday Concepts in English Language classrooms

Everyday concepts were used throughout both English language lessons. This answers the secondary research question of whether or not teachers use everyday

concepts in English Language classrooms. As with scientific concepts, everyday concepts are utilized by both teachers throughout the lesson. However, unlike the identical data regarding scientific concept use, both the frequency and purpose of everyday concepts differ significantly between the two lessons. When comparing frequency percentage, everyday concepts only comprised 12% of Mrs Uys's content-focused utterances compared to the 31% of Mrs Miller, despite Mrs Uys's lesson being 10 minutes shorter. Upon closer examination of the data, two potential reasons for this 19% difference were identified.

The first relates to the total amount of utterances made by the teachers. Comparatively, the utterances made by Mrs Uys were half that of Mrs Miller. It is important to note the class size here when considering the vast difference in the amount of utterances made. Mrs Miller's class consisted of almost five times the number of learners than that of Mrs Uys. The significant difference in learners could influence the amount of utterances in various ways. Large classes could potentially provide the teacher with more opportunities for interaction than that of such an intimate class. However, these opportunities rely on various other factors, such as learners being willing to participate or being given the opportunity to do so. Being that this was not noted during the observation, it acts as an extraneous variable, and, thus cannot conclusively be commented on.

However, a definite factor in the difference in utterances is her decision to sacrifice lesson time in favour of including various videos at the beginning of the lesson. The time allocated to showing these videos did still form part of the overall lesson time, despite essentially not allowing utterances to be made by either the teacher or learners. This means that the utterance count could have been increased if the videos were excluded.

Furthermore, despite the video narration including utterances, these were not made by either the teacher or the learners and thus were not included as codes in the data. Instead, the video is considered as resource material or a tool. Nevertheless, even if the concepts of the video could be coded, it would still not have been coded as everyday concepts; though all were relevant to the lesson topic (i.e., pollution), they did not form part of the everyday lives of the learners. Take for instance the video that was selected for water pollution, which primarily focused on pollution within the ocean. To learners within rural Limpopo, who rarely have the opportunity to see the ocean, concepts such as oil spills from ships and its effect on marine life (i.e., dolphins,

penguins, and sea turtles) are fairly unknown and foreign. Instead, a video discussing pollution in rivers and its effects on crop production or livestock, would draw on learners existing knowledge accumulated from living experiences to garner an understanding of the concept ‘water pollution’. This reflects a missed opportunity to make the content relevant to the learners’ lives.

The second potential reason for the significant difference relates to how these teachers chose to incorporate everyday concepts into their respective lessons. Both teachers included everyday concepts into examples or explanations of the discussed concepts. However, where Mrs Uys opted for short and specific examples and explanations, Mrs Miller opted for longer analogies, scenarios, and detailed stories. The effectiveness of one approach over the other in regard to learner understanding cannot be proven from the data, but the data does suggest that one approach yields more benefits. As mentioned within the comparative analysis, the data for many of the codes are identical or similar, but it is in the other noted differences that potential relationships exist to be explored. One of these potential relationships is between increased use of everyday concepts and the increased content-focused responses of the learners. With Mrs Miller’s 31% everyday concept utterances, 69% of student responses were content-related. Comparatively, Mrs Uys’s 12% of everyday concept utterances only yielded 48% content-related responses from students. This suggests that increased use of everyday concepts motivates learner engagement with the topic at hand. However, more research is needed to explore this occurrence.

Another potential relationship to be explored is one between increased use of everyday concepts and the decreased use of non-content instructions/questions from the teacher. Here, the difference is less significant, with Mrs Uys’s utterances consisting of 46% non-content instruction/questions compared to Mrs Miller’s 38%. Though not as large of a difference as with content-related student responses, it is one that warranted a closer examination of the data. What was found is that where Mrs Miller’s use of non-content instruction/questions mostly consisted of guidance regarding the activity, Mrs Uys’s mostly consisted of classroom behaviour management. This suggests the use of everyday concepts may influence learner participation and cooperation within lessons.

Ultimately, both of these relationships warrant further investigation, but the current study’s data analysis does advocate for the inclusion of everyday concepts when discussing scientific concepts in lessons.

5.1.4. The Double-Move and English Language classrooms

There was no successful occurrence of the Double-Move in either of the observed lessons, though there were instances that reflected an attempt at doing so. In their respective lessons, Mrs Uys made 3 attempts to link scientific concepts to everyday concepts, and Mrs Miller made 10.

The Double-Move approach only requires the teacher to acknowledge the everyday concepts and the scientific concept that needs to be attained and linked explicitly (Fleer & Raban, 2007). At face value, each teacher does, however, the reason for their failure becomes evident when recognizing the characteristics of the approach, i.e., drawing on learners' everyday concepts, utilising personal knowledge as a motivator, and the appearance of elaborated scientific concepts. In their attempts, both teachers included local knowledge throughout the lesson by drawing on the learners' daily experiences or personal stories - making the discussed concept more relevant to the learners' lives and utilizing it as a motivator. However, where they both fell short of a successful Double-Move was in their elaborations or lack thereof. For instance, the attempt by Mrs Uys to elaborate on the scientific concept of 'acid rain'. The concept of 'acid rain' was linked to the farming lives of the learners, by stating that it is something that causes damage the tomato plants their families tend to grow. This presents an excellent foundation for the Double-Move, as it draws on fairly well-established knowledge from learners who grew up and lived most of their lives on agricultural farms. However, where it failed to successfully cultivate learner understanding of the concept or transformation thereof, was in its lack of elaboration. A scientific elaboration for 'acid rain' was never provided, neither was an elaboration on the damage it causes to the tomato plants. In turn, learners could not construct a stronger understanding of what 'acid rain' is and effectively relate it back to their daily lives. Furthermore, although both teachers linked scientific concepts to everyday concepts, the relationship between the concepts was never explicitly made. In their explanations, neither of the teachers properly elaborated on the 'how' or 'why' of the relationships between the two concepts. This is the case for all of the attempts made by the teachers. In each instance, some characteristics of Hedegaard's Double-Move were present but not all; the primary issue related to inadequate or absent elaborations, leaving the relationship between concepts unclear.

Since Chaiklin & Hedegaard (2013) explicitly stated that the inclusion of this approach required meticulous and significant planning on the part of the teacher,

failure was to be expected considering the absence of intention from either teacher in this study, due I would argue the fact that they have no explicit training in this methodology. Nevertheless, the presence of unsuccessful/incomplete attempts of the Double-Move should be considered a positive indication and point to a policy initiative to introduce this kind of pedagogical practice into teacher training. What their presence indicates is that there is a natural gravitation toward including local knowledge in relation to scientific concepts, which presents a potential opportunity to incorporate the Double-Move approach.

5.1.5. Opportunities for the Double-Move within English Language Classrooms

Besides the potential opportunity that lies within the unsuccessful attempts discussed in the previous section, there were also various other opportunities throughout the lesson. The majority of these opportunities were to include more local knowledge, stemming from learners' experiences and context, in the lesson. For instance, a lot of opportunities could be found in the IRF/E cycles utilized by the teachers.

As discussed in the analysis, one of the biggest critiques of these cycles is the lack of a collaborative dialogue between the teacher and learners within the two observed lessons. However, this issue could potentially be resolved with the inclusion of local knowledge, which would motivate learners to engage with the topic and share their own knowledge and experiences. This inclusion of local knowledge is possible at two points within the cycle - within the question type selection (initiation phase) and the given teacher feedback (feedback/evaluation phase). At the initiation phase, closed-ended questions do not offer learners an opportunity to engage in dialogue and more often than not only prompt one-worded or yes/no responses. However, the inclusion of open-ended questions would allow learners to share their own experiences and thoughts. During the feedback/evaluation phase, opting for non-elaborated feedback or teacher repetition rather than elaborated feedback indicates a missed opportunity for the teacher to facilitate learner understanding through the inclusion of their local knowledge (Hardman & Teschmacher, 2019).

Furthermore, the selection of included everyday concepts, both the content and type, also present an opportunity. As discussed within the analysis, there were various occurrences where the choice of utilized examples was not relevant to the lives and experiences of the learners, but could have been. Additionally, just as with non-elaborated feedback, the preference for non-elaborated everyday concepts over-

elaborated everyday concepts illustrates another missed opportunity for the inclusion of local knowledge.

The observations mentioned above serve to demonstrate that various opportunities do indeed exist within English Language classrooms for the inclusion of the Double-Move approach. Additionally, through modifications to already utilized classroom conventions and methods, local knowledge can be included with ease to allow for the inclusion of the Double-Move.

5.1.6. Answering the Primary Research Question

Considering the aforementioned sections in this chapter, an adequate answer can be given for the primary research question: How do teachers within a Grade 4 English Home Language classroom explain scientific concepts in said classroom and link these to everyday concepts?

In both of the observed lessons, teachers explain scientific concepts through the inclusion of local knowledge and learner experiences. Within the lesson, this usually appears as contextually relevant examples, analogies or personal stories, presented by the teacher in order to facilitate learner understanding and motivate learner participation. This illustrates the teachers' preference for the utilization of everyday knowledge over theoretical knowledge when explaining scientific concepts. This fact is further strengthened when considering that the use of elaborated scientific concepts or scientific elaborations occur rarely in comparison to everyday concepts. Everyday concepts outweigh scientific concepts in the overall percentage of utterances though this difference is disproportionate across the two lessons. However, the lesson with increased use of everyday concepts likewise presented an increase in learner participation and co-operation.

Nevertheless, there are occurrences of everyday concepts being linked to scientific concepts. However, none of the occurrences could be considered a successful Double-Move largely due to inadequate elaborations and lack of explicit illustration of the relationship between concepts. Despite this failure of successfully linking scientific and everyday concepts, the data serves to demonstrate the various opportunities for the inclusion of the Double-Move approach within English Language classrooms. What is missing, then, is not the everyday local knowledge, but the elaboration of the scientific. This dearth has the potential to impede learners'

development of theoretical thinking and acquisition of scientific concepts to enable them to think in the specific ways required by schooling.

5.1.7. Issues surrounding elaboration of scientific and everyday concepts

Bearing in mind the difficulty in defining what is considered a scientific concept within the English Language subject, an adaptation of what is accepted of an elaborated s concept should be expected as well. Upon closer examination of the utilized concepts, two aspects that proved to be a grey area in regards to the elaboration of both scientific and everyday concepts: Closed questions and Feedback.

As discussed within the analysis, Initiation-Response-Feedback/Elaboration cycles are used throughout both lessons, with closed-ended questions prompting the cycle. When investigating scientific concepts specific to the subject, such as ‘draft writing’, ‘mind maps’, and ‘letter writing’, it could be argued that elaboration was provided in the form of feedback. These lessons that focus on skill development do not provide ‘definitions’ of scientific concepts as elaboration but through activity completion prompt teacher feedback that shapes and adds onto learners’ concept formation instead.

Furthermore, what was interesting about the closed-ended questions used within Mrs Miller’s lesson specifically, is how it contained the elaboration of the concept and then prompted learners to provide the scientific term itself. Consider the following example:

Extract 5-1

1.	Teacher:	When I am writing my practice letter, what do we call it?
2.	Teacher:	You’re first going to write a…?
3.	Teacher:	It starts with a 'd'…?
4.	Student:	Draft!

At first glance, this extract consists of 3 closed-ended questions which prompted a correct student response, and in accordance with the predetermined code, was coded as such. However, when the content of these questions is considered, it could suggest another possibility. Within these questions lies a simple explanation for what a draft letter is, i.e., ‘a practice letter that you write first’. This is a fact that by itself does not indicate much, yet, should be considered within the larger lesson context. When revisiting the data, it was found that the teacher never provides another elaboration on what constitutes a ‘draft’, except for in this question. She does provide more information on drafts in the form of feedback to student questions or responses.

The elaborations provided in the feedback to learner responses or student questions resemble a similar issue. Consider the following extract from the lesson by Mrs Uys:

Extract 5-2

1.	Teacher:	Why must we protect our planet?
2.	Student:	To stay safe
3.	Teacher:	To what?
4.	Student:	To stay safe
5.	Teacher:	To stay safe.
6.	Teacher:	Ok.
7.	Student:	To save the animals
8.	Teacher:	To save the animals.

This extract follows a typical IRF/E cycle, illustrating the teacher providing feedback to student responses following an initial question. As a form of feedback, the teacher repeats the student's responses as an acknowledgement that it's correct. What brings forth the question of recoding, is in the way that the teacher never provides another elaboration on what constitutes 'protecting the planet', outside of the provided feedback.

Considering that this is the case for a multitude of other discussed concepts as well, it begs the question of whether or not it should be considered as an elaboration instead. Nevertheless, the data does not provide tangible answers on this matter and is inadequate to draw any valid conclusions. Therefore, further research is required.

5.2. Language within English Language Classrooms

5.2.1. Teaching English within Rural classrooms

Upon conclusion of the interviews, there were various insights provided into the reality of teaching English in rural classrooms. However, one of the facts that both teachers collectively agreed on, is that they enjoy teaching English to Grade 4 learners despite it being fraught with challenges.

One of the primary challenges was closing the prominent gaps in learners' language ability and comprehension, which impeded the learners' ability to take on the subject-matter in Grade 4. Both teachers stated that they felt they were left 'playing catch-up' at the beginning of each school year, which entailed sacrificing time to teach components and material unique to the foundation phase instead of that laid out in the curriculum for Grade 4.

Furthermore, it appears that the challenges they face stem from the language itself rather than the subject-matter. As one teacher remarked, “You have to teach them the language first before they can understand the content.” Both teachers accredited this to the lack of exposure to English in the learners’ environments and addressed these challenges by including activities in their lessons to strengthen the respective learners’ abilities. However, in Mrs Miller’s case, the learners’ environments presented more of a challenge within the classroom.

One of the biggest challenges Mrs Miller faces within her classroom is the learners’ inadequate vocabulary. This inadequacy stemmed, in part, from a lack of exposure to the English language in general. Additionally, it is exacerbated within learning material by the assumptions made in regards to concepts included in the curriculum and assessment content. Within this content, some concepts are accepted and deemed as ‘common knowledge’ for Grade 4 learners, when in actuality learners from certain contexts may find them foreign and new. To remedy this issue, Mrs Miller spends the first part of lessons teaching these foreign concepts to ensure that her learners understand the content of the lesson - such was the case with the observed lesson. However, there are occurrences where more drastic efforts were needed, such as completely changing the curriculum and assessment content. Again, the observed lesson served as an example of such an occurrence, where Mrs Miller had changed the topic and content of the lesson.

According to the curriculum content provided, the letter within the lesson was about ‘visiting an owl sanctuary’ – a topic that would also appear in the learners’ later examination assessment. However, this topic, and its subsequent content, was changed to ‘visiting an animal shelter’ after revision thereof by Mrs Miller. When questioned about this change, she reasoned that it was necessary not only because the learners were not familiar with what an owl sanctuary is but also because within the learners’ culture owls are viewed as evil beings. She explains that her learners will not be able to understand the topic at hand, and most likely think, “Why would you want to save an owl? It’s an evil thing that glances upon your house and then someone dies”. Therefore, the topic and content were changed to better align with the environment of her learners.

The school where Mrs Miller teaches adheres to the CAPS curriculum and utilizes learning material, assessments and textbooks designed to align with its

requirements. Therefore, the above example brings to question the suitability of these prescribed learning materials for South African learners.

5.2.2. Home Language in the English Language Classroom

In line with the Language in Education Policy, both teachers taught exclusively in English, going as far as enforcing an English-only rule within their classroom to prohibit learners from speaking any language aside from English. However, despite their efforts to exclude other languages, the home language of the learners and teacher was still observed throughout the lessons.

Considering the utterances made by the teacher, the use of home language was largely dependent on the teacher. For instance, in the lesson by Mrs Miller, Afrikaans words were often used to provide feedback on learner responses. Whereas, in the lesson by Mrs Uys, Afrikaans was used for non-content related instruction. Though this inclusion served different and specific purposes for each teacher, they were consistent in their use throughout the lesson.

The appearance of the home language within learner utterances, on the other hand, seemed to be largely dependent on who the learners interacted with. For instance, in both lessons, when learners interacted with other learners to converse casually about non-content topics, their home language was used. Additionally, when the learner interacted with their respective teachers, learners primarily spoke in English. However, in the lesson by Mrs Uys, learners spoke in their home language when interacting with their teacher on various occasions.

Considering that the teacher's home language aligns with that of her learners, an increase in its utilization within their interaction should be expected. Yet, the learners only used their home language when interacting with the teacher on three specific occasions: When providing non-content related student responses, when asking questions about something they do not understand, and when providing student responses that the teacher deemed incorrect.

Although the majority of the instances where the utilization of one's home language was either irrelevant to the lesson content or inconsequential, there were instances within Mrs Uys's lesson, where it was relevant to the content of the lesson. Consider the following extracts:

Extract 5-3

1.	Teacher:	What is oxygen?	CQ
2.	Multiple students:	Suurstof. *(Oxygen)*	ICSR

Extract 5-4

1.	Teacher:	What is acid rain?	CQ
2.	Student:	Suurreën. *(Acid rain)*	ICSR

In both these extracts, a question was posed by the teacher with the intention of prompting learners to explain certain concepts, i.e., oxygen and acid rain. However, what was prompted instead was an Afrikaans translation of the concept, which was accepted as an incorrect student response. Despite not providing an explanation for the concept, the learners' ability to provide the correct Afrikaans term for the concept indicates some level of understanding of the concept asked about.

Bearing in mind that the learners grew up with Afrikaans as their home language and being taught in Afrikaans from Grade 1-3, it is likely that these concepts were already familiar and somewhat internalized by the learners - just not in English. Furthermore, if these concepts were indeed already internalized by the learners it is likely that these questions could be answered if they were allowed to do so in their home language.

This suggests that despite English being the language of teaching and learning, the use of home language does occur within English Language classrooms and should therefore be accepted instead of fought. It is only when this fact has been accepted, that home language can be transformed and its potential as a tool within the classroom realized. However, with this study focusing on the Double-Move specifically, the question is how home language would be applied within this specific method.

5.3. Multilingualism and the Double-Move Method

Within his social-constructivist perspective, Vygotsky views language as a tool for instruction. Therefore, one would assume that if learners had more languages at their disposal, it would equate to more tools for the teacher to utilise. However, this is not the case in our two observed lessons. Considering the prominent theme of enforcing English use and consequent application of the 'English-only' rule within their own classrooms, their approach to pedagogy is more monoglossic.

However, as is evident in the previous discussion, the home language of both the teacher and the learners makes its way into the classrooms, regardless. Therefore,

instead of dismissing the home languages of the learners, it should be utilised as “a bridge to understanding the lesson content in English” (Probyn, 2019, p. 224). This way of thinking aligns with heteroglossic approaches, which regard the learners as having a single multilingual repertoire, which can be drawn from and harnessed within learning (Guzula, et al., 2016). Furthermore, by adopting a heteroglossic approach within the classroom, teachers better accommodate and facilitate for the Double-Move and its subsequent radical-localised approach. This is largely due to the fact that these heteroglossic approaches were built on the same sociocultural theories proposed by Vygotsky as the Double-Move and radical-localised approach.

One pedagogic practice within the heteroglossic approach that might prove beneficial in regards to the Double-Move is translanguaging. Guzula, et al. (2016) argues that through using translanguaging as a tool, teachers could better draw on learners’ personal knowledge and socio-cultural experiences to further facilitate learner understanding (Guzula, et al., 2016) – a statement that aligns with the practices laid out within the Double-Move and radical-localised approach. Accepting the compatibility of the Double-Move and heteroglossic classroom practices brings to question what its integration would allude to, especially considering that the Double-Move does not specify where the learners’ home language fits into the model.

If heteroglossic approaches, more specifically translanguaging, were accepted into classrooms, it would allow learners to utilize their full linguistic repertoire. As a result, learners will be able to access everyday and scientific concepts that may have been excluded due to language.

Consider again the events that occurred in Extract 5-C and Extract 5-D above. If translanguaging was allowed, would the student responses have been considered correct? Furthermore, if these concepts were indeed already internalized by the learners in their home language, would they have provided the explanation sought by the teacher if they were allowed to do so in their home language? These questions will remain unanswered unless further research is done on the matter.

Nonetheless, it is evident that by accepting translanguaging into classrooms, teachers better accommodate for the home language of their learners. Additionally, translanguaging provides the teachers with a space for the inclusion of learners’ home language within the Double-Move.

5.4. Conclusion

Through analysing past literature and the two observed lessons, the benefits of the Double-Move approach within pedagogy and its potential to alleviate some of the issues teachers face become evident.

This study was able to explore the possible application of the Double-Move method within Grade 4 English language classrooms through examining how the scientific and everyday concepts are used within language classrooms currently. It was apparent from the analysis of the two observed English Language classrooms, that the utilization of everyday concepts by teachers in an attempt to aid in the understanding of scientific concepts occurs naturally. This occurrence was also often coupled with increased learner engagement and decreased behaviour management. This signifies teachers gravitate towards Hedegaard's Double-Move method intuitively, despite not having prior knowledge or familiarity with the model, due to its found usefulness by the teacher during instruction.

However, none of the occurrences could be considered a successful Double-Move. This failure could be accredited to their lack of knowledge of the model, which resulted in inadequate elaborations and a lack of explicit illustrations of the relationships between concepts. Nevertheless, this failure to successfully link scientific and everyday concepts serves to demonstrate the various opportunities for the inclusion of the Double-Move approach within English Language classrooms; a space exists within these classrooms for a conscious application of the model.

Furthermore, the use by teachers and learners of their home language within these classrooms, regardless of its active exclusion, offers teachers a unique opportunity to further facilitate learning through its inclusion within the Double-Move.

5.5. Recommendations and Future Research

5.5.1. Methodological Recommendations

Upon concluding the data collection, there were issues related to the methodology of the study that should be addressed for future reference and potential replication.

Firstly, when conducting observations of the lessons, an alternative approach to the observation method itself should be considered. Learners' deviation from their normal behaviour in class on the grounds of being 'shy' in front of the researcher endangers the data's accuracy. As one potential alternative, the observations should be conducted without the presence of the researcher within the classroom through

camera recording and live stream technology. Another option is for the researcher to build a rapport between themselves and the learners, ahead of the observation, to ensure that learners are comfortable with the researcher being present.

Secondly, the amount of observations of each teacher should be expanded. Though the sample in the study allowed for comparisons to be drawn between the two teachers, it did not allow for validation of certain findings regarding the relationships everyday concepts have with other codes. By including an additional lesson observation from each teacher, the researcher will be able to prove the consistency of findings across two lessons as well.

5.5.2. Recommendations for the Coding Process

Unlike the concepts within STEM classrooms, scientific concepts and everyday concepts within language classrooms are far less clear-cut, especially in lessons with a focus on skill development rather than the concretion of a concept. This meant that many utterances did not fit neatly into the predefined codes or categories, but instead required the researcher to use their own discretion throughout the analysis process. This was the case for elaborated concepts as well where codes such as closed-ended questions and Feedback proved to be a grey area in regards to the elaboration of both scientific and everyday concepts.

To remedy this, an adaptation of the boundaries for concepts is necessary, in order to define concepts to better accommodate for language classrooms. Nevertheless, the data does not provide tangible answers on this matter and is inadequate to draw any valid conclusions or provide any specific recommendations. Therefore, further research is required.

5.5.3. Further Research from Findings

Aside from the discussion on the research questions, both the observations and interviews yielded interesting findings in regard to teaching English to Grade 4 learners. Of these findings, there are two that the researcher felt carried significant implications for these classrooms and, thus, warranted further research.

Firstly, the suitability of prescribed learning materials for the diverse array of South African learners should be explored. As was evident in Mrs Miller's lesson and interview, some concepts deemed as 'common knowledge' for Grade 4 learners within these materials may be foreign and new to some learners. This placed additional stress on the teacher to adapt material and sacrifice already limited teaching time, in

order to accommodate for these concepts. Therefore, further research is required to see if this is an issue within other rural schools of Limpopo as well.

Secondly, the Double-Move does not define where or how multilingualism fits into its method. As a possible solution, the researcher suggests the acceptance of heteroglossic approaches, specifically translingualism, in classrooms as a way to accommodate for the learners' home language in the Double-Move Method. The foundational compatibility between the Double-Move and translingualism, as well as its advocation for the inclusion of learners' personal experiences and local knowledge, suggests a potentially beneficial integration. However, this can only be confirmed through conducting further research on the matter.

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Appendix A

Teacher Information Sheet

Dear educator ,

Teaching Grade 4 English in multilingual classrooms: Hedegaard's Double Move Revisited.

I, Michelle Kotze', am a masters student in the School of Education at the University of Cape Town. I would like to ask your permission to carry out research on how teachers explain scientific concepts in English language classrooms and how they proceed to link these to everyday concepts in order to explore potential practical applications Vygotsky's theory of learning and Hedegaard's Double Move method has within these classrooms. My research aims to explore how these concepts and methods could be utilized to better accommodate for multilingual learners.

In a country that prides itself on having 11 official languages, many learners transition to English as their Language of Learning and Teaching (LoLT) in Grade 4, despite it not being the learners' mother tongue. This transition is often turbulent and troublesome for these learners as many of them struggle to succeed in spite of having the potential to do so. This is further facilitated by English being regarded as a foreign entity, both due to the limited exposure many communities have to it and to its fraught colonial origin and related history within South Africa. Therefore, a need exists to explore possible new avenues in pedagogy within English classrooms in an attempt to alleviate some of the issues that mar them. Studies done making use of Hedegaard's Double-move model yielded positive and beneficial results, both in relation to learners' ability to grasp the content as well as in providing them with the tools to reclaim foreign topics as their own.

Data collection will be in the form of a lesson observations on an agreed upon date. I will observe teaching and teacher-learner interaction, making notes and video-recording. We hope to interview you at the end of the observation period for about 20 minutes. This will offer an opportunity to pursue any areas of interest that may have arisen during data collection.

Participation is voluntary and the confidentiality of the school, as well as the teachers and learners, is guaranteed. The school will be given a pseudonym (different name) and pseudonyms will be used for all participants in the writing up of the research. You may withdraw permission for conducting the research at any time.

Please fill in the slip below to indicate your consent for the research. You are welcome to ask any questions regarding this research by telephone or email: Michelle Kotze' on KTZMIC011@myuct.ac.za or +27 832317934

Yours sincerely,

Miss Michelle Kotze'

Teacher Consent form

Teaching Grade 4 English in multilingual classrooms: Hedegaard's Double Move Revisited.

I understand that my participation is voluntary and that confidentiality will be maintained. I can withdraw my participation at any time.

I consent to:

1.	Being observed in the classroom	Agree ☐	Disagree ☐
2.	Being video-recorded working in the classroom	Agree ☐	Disagree ☐
3.	Being interviewed	Agree ☐	Disagree ☐
4.	An audio-recording of the interview	Agree ☐	Disagree ☐

_____ _____

Name of Participant (Print) *Date*

_____

Signature of Participant

Appendix B

Research Information Sheet

Title of research project: Teaching Grade 4 English in multilingual classrooms: Hedegaard's Double Move Revisited.

Researcher: Michelle Kotze'
Contact details: *(Tel)* +27 83 231 7934
(Email) KTZMIC011@myuct.ac.za
Supervisor: Prof. Joanne Hardman
Supervisor email: joanne.hardman@uct.ac.za
Department address: *School of Education*
Neville Alexander Building
University Road
Rondebosch, 7701

What is the research about?

In a country that prides itself on having 11 official languages, many learners transition to English as their Language of Learning and Teaching (LoLT) in Grade 4. This transition is often troublesome for learners as many of them struggle to succeed in spite of having the potential to do so. This is further facilitated due to the limited exposure many communities have to English, and to English's fraught colonial origin and related history within South Africa. Therefore, a need exists to explore possible new avenues in pedagogy within English classrooms in an attempt to alleviate some of the issues that mar them. Studies done making use of Hedegaard's Double-move model yielded positive and beneficial results, both in relation to learners' ability to grasp the content as well as in providing them with the tools to reclaim foreign topics as their own. I would like to carry out research on how teachers explain scientific concepts in English language classrooms, in order to explore how these concepts and methods could be utilized to better accommodate for multilingual learners.

What does it participation involve?

Participation is voluntary and learners can withdraw from the study at any point in time. If the learner does participate, my supervisor and I will sit in for one of the English lessons and observe how the teacher and learners interact in their classroom; making notes on that interaction and video-recording it for later analysis. The learners are not

required to do anything outside of go about their lesson as they normally would and no additional material will be collected or completed. The teachers will be interviewed after the completion of the class about the lesson.

What about my child/ward's privacy?

The confidentiality of the school, as well as the teachers and learners, is guaranteed. The school will be given a pseudonym (different name) and pseudonyms will be used for all participants in the writing up of the research. You may withdraw permission for conducting the research at any time. Our observations, notes and video recording of the lesson will be kept private, and will not be seen or accessible to anyone besides the researcher and supervisor.

What are the potential risks?

There are no perceived risks for participating in the study. Learners may feel anxious or uncomfortable about our presence or about being recorded. If they do they are free to inform us or the teacher and withdraw from participating in the study. They will not get into any trouble for doing so.

What are the potential benefits?

There are no direct benefits for participation. The benefits of this study lie in potentially improving pedagogy in classrooms in a way that benefits the learners.

What are the costs?

There are no costs to the learner, guardians, school, or teacher for participating in this study.

Parental Consent Form

By signing this form, I acknowledge the following:

I have read this consent form and the information it contains and had the opportunity to ask questions about them.

I understand that my child/ward is under no obligation to take part in this project.

I understand I have the right to withdraw my child/ward's participation from this project at any stage.

I understand that the confidentiality of the school, as well as the teachers and learners, is guaranteed.

I understand that this research might be published in a research journal or book. In the case of dissertation research, the document will be available to readers in a university library in printed form, and possibly in electronic form as well.

I, hereby, consent to the following:

1.	My child/ward being observed in the classroom	Agree ☐	Disagree ☐
2.	My child/ward being video-recorded working in the classroom	Agree ☐	Disagree ☐

I, _____ (parent/guardian name), hereby grant permission for _____ (child/ward name) to participate in this research project.

_____ _____

Signature of Parent / Guardian *Date*

_____ _____

Signature of person who sought consent *Date*

Appendix C

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CHILD ASSENT FORM

I am Miss Kotze' from the University of Cape Town. I am doing a study to figure out how you and your teacher work together during class-time to help us understand how you learn English. We are asking you to take part in the research study because you and your class were selected to help us.

For this research, we will sit in during a lesson and watch your teacher and whole class work. This lesson will also be video-recorded. Everything that we see and record during this lesson will be kept private, and we will not show them to anyone outside of your class and teacher. Only people from the University of Cape Town that are working on the study will see them.

We don't think that any big problems will happen as part of this study. You might feel uncomfortable, shy or nervous about being recorded. You might also be worried other people will see your recording, but the recording will only be seen by my team and I.

You can feel good about helping us to see how your class works, so that we can better understand how you learn and hopefully help you learn better in the future.

You should know that:

1. You do not have to be in this study if you do not want to. You won't get into any trouble with your teacher, or the school if you say no.
2. You may stop being in the study at any time.
3. Your parent(s)/guardian(s) were asked if it is OK for you to be in this study. Even if they say it's OK, it is still your choice whether or not to take part.
4. You can ask any questions you have, now or later. If you think of a question later, you or your parents can contact me at *KTMIC011@uct.ca.za*.

Checklist:

	Yes	No
1. I have listened to and understand the information about the project.	☐	☐
2. I know I can ask to not take part at any point.	☐	☐
3. I agree to take part in the lesson.	☐	☐
4. I am happy to be video recorded.	☐	☐
5. I am happy for the information I give to be shared with the project team.	☐	☐

Your Name _____ Date _____

Thank you!