AN ALTERED FLIPPED CLASS PEDAGOGY AS INTERVENTION STRATEGY TO ADDRESS PASSIVE LEARNING IN A TEACHER-CENTRED CLASSROOM

by

LIZÉLLE PRETORIUS

submitted in accordance with the requirements for

the degree of

DOCTOR OF EDUCATION

in the subject

CURRICULUM STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR:

Prof. JM Dreyer (2016-2020)

SUPERVISOR:

Prof. MM van Wyk (2021-2022)

DECLARATION

Name: Lizélle Pretorius

Student number: 58561080

Degree: PhD - Education (Curriculum Studies)

An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centred classroom

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

_____   26 April 2023
                                                   _____

SIGNATURE   DATE

ACKNOWLEDGEMENTS

ABSTRACT

The passive learning phenomenon has a pervasive presence in many classrooms around the world. More dangerously, however, is that it is reinforced by passive teaching approaches that have become synonymous with traditional teacher-centred practice. The aim of the study is therefore to introduce an intervention, the Altered Flipped Classroom Pedagogy (AFCP), that counters the passive learning phenomenon. The AFCP derives from Bergman and Sam's (2012) Flipped Classroom Pedagogy. It was adapted for the South African context where access to technology for teaching and learning is only available in 20,35% of public high schools. Flipped classroom pedagogy has its roots in socio-constructivist theories of learning, thereby increasing its potential to actively engage learners in the learning process. Due to the nature of the research question and the aim of the study it is positioned a-paradigmatically. It takes an interpretive stance which originates from qualitative description, a pragmatic qualitative approach. The methodology of a-paradigmatic studies are shaped by the intervention, the primary purpose being the link between theory and practice. The intervention (AFCP) that was introduced took the form of online teacher training which were supported by a complete teacher training manual that was specifically designed for in-service teachers. Four methods of data collection were employed, semi-structured on-line interviews, feedback questionnaires, a spontaneous response and research diaries. Thematic analysis was used to analyse the data according to Braun and Clark's (2006) six phases. The findings show the intricate relationship between learner autonomy and teacher control. It also demonstrates learners' capability to readily move across the Pedagogy-Andragogy-Heutagogy-continuum if provided the opportunity to do so. The recommendation is made that teachers embrace innovative pedagogies that promotes active learning and learner-centredness.

KEY WORDS:

Passive learning; Passive teaching; Flipped classroom; Active learning; Self-determination Theory; Neuroeducation; Learner-centred classroom; Pedagogy-Andragogy-Heutagogy continuum

OPSOMMING

Die passiewe leer-verskynsel het 'n blywende teenwoordigheid in klaskamers wêreldwyd. 'n Groter gevaar, is egter dat dit onderhou word deur passiewe klaskamermetodologieë wat diep gesetel lê in die tradisionele onderwyser-gesentreerde benadering. Die doel van dié studie is dus om 'n intervensie, die Aangepaste Omgekeerde Klaskamerpedagogie (*Altered Flipped Classroom Pedagogy*), voor te stel wat poog om die passiewe leer-fenomeen teë te werk. Die *AFCP* het sy oorsprong in Bergman en Sam (2012) se *Flipped Classroom Pedagogy*. Dit is aangepas vir die Suid-Afrikaanse konteks waar slegs 20,35% van openbare hoërskole toegang tot tegnologie vir onderrig- en leerdoeleindes het. Die tradisionele omgekeerde klaskamerpedagogie het sy ontstaan in sosio-konstruktivistiese leerteorieë, wat die potensiaal verhoog om leerders aktief by die leerproses te betrek. Weens die aard van die navorsingsvraag en die doel van die studie is dit a-paradigmaties geposisioneer. Dit is interpretatief van aard en volg 'n pragmatiese kwalitatiewe benadering. Die metodologie van a-paradigmatiese studies word primêr gevorm deur 'n intervensie wat beoog om 'n skakel tussen bestaande teorie en praktyk te bewerkstellig. Die intervensie (*AFCP*) het die vorm van 'n aanlyn opleidingsessie aangeneem. Die onderwysers wat die opleiding bygewoon het, is voorsien van 'n spesiale handleiding wat ontwerp is vir die implimentering van die *AFCP*. Vier metodes van data-insameling is gebruik, semi-gestruktureerde aanlyn onderhoude, terugvoervraelyste, 'n spontane respons en navorsingsdagboeke. Tematiese analise is gebruik om die data aan die hand van Braun en Clark (2006) se ses fases te ontleed. Die bevindinge toon die ingewikkelde verband tussen leerder-outonomie en die impetus van onderwysers om in beheer te wees. Verder demonstreer dit ook leerders se vermoë om geredelik oor die Pedagogie-Andragogie-Heutagogie-kontinuum te beweeg indien hul die geleentheid gebied word. Die aanbeveling word gemaak dat onderwysers innoverende pedagogieë onderneem wat aktiewe leer en leerdergesentreerdheid bevorder.

SLEUTELWOORDE:

Passiewe leer; Passiewe onderrigmetodes; Omgekeerde klaskamer; Aktiewe leer; Self-bepalende leer; Neuro-opvoeding; Leerdergesentreerde klaskamer; Pedagogie-Andragogie-Heutagogie kontinuum

ISISHWANKATHELO

Isenzo sokungxalwa kwabafundi ngolwazi esaziwa njenge*passive learning* sixhaphakile kumagumbi okufundela amaninzi kwihlabathi jikelele. Nangona kunjalo, okuyingozi ngakumbi kukuba yomelezwa kukusetyenziswa kweendlela zokufundisa ezifana nenkqubo yemveli egxile kutitshala. Injongo yolu phononongo ke ngoko kukwazisa ngongenelelo loncedo elibizwa nge*Altered Flipped Classroom Pedagogy* (*AFCP*), echasene nesenzo sokufundisa ngohlobo lwe*passive learning* (ukungxalwa kwabafundi ngolwazi). I-*AFCP* isekelwe kwiNdlela yokuFundisa eGuquguqukayo yaseKlasini (*Flipped Classroom Pedagogy*) kaBergman kunye noSam (2012). Olu hlobo lokufundisa lwalungiselelwa imeko yaseMzantsi Afrika apho ukufikelela kwithekhinoloji yokufundisa nokufunda kufumaneka kuphela kuma-20,35 eepesenti yezikolo eziphakamileyo zikarhulumente. Indlela yokufundisa eguquguqukayo yaseklasini (*Flipped Classroom Pedagogy*) ineengcambu zayo kwiithiyori zokufunda zezentlalo nonxibelelaniso, ngokwenjenjalo ikhulisa amandla ayo okubandakanya abafundi ngenkuthalo kwinkqubo yokufunda. Ngenxa yobume bombuzo wophando kunye nenjongo yophononongo ibekwe ngokomzekelo woguqulo lwamagama (*iparadigmatic*). Oku kuthatha isimo sokutolika esisuka kwinkcazo yomgangatho, esiyindlela yomgangatho wepragmatiki. Indlela yokwenza izifundo ze-*a-paradigmatic* zenziwe ngongenelelo olunenjongo ephambili ekukwenza unxibelelwano phakathi kwethiyori kunye nokusebenza. Ungenelelo ngoncedo (*AFCP*) olwaqaliswayo, lwathatha uhlobo loqeqesho lootitshala ngekhompyutha olwathi lwaxhaswa yincwadana epheleleyo yoqeqesho lootitshala eyayilungiselelwe ngokukodwa ootitshala asebephangela. Iindlela ezine zokuqokelelwa kwedatha ezisetyenzisiweyo, ludliwanondlebe olulungelelanisiweyo lwe-intanethi, amaxwebhu emibuzo nempendulo, impendulo ezenzekelayo kunye needayari zophando. Uhlalutyo lwedatha lwenziwe ngokwamanqanaba amathandathu ohlalutyo lwedatha ngokwemixholo (ngokwe-*thematic analysis*) ngokukaBraun noClark (2006). Iziphumo zibonisa unxulumano oluntsonkothileyo phakathi kokuzimela komfundi kunye nolawulo lukatitshala. Zikwabonisa isakhono sabafundi sokuhamba ngokulula ngaphaya kwenkqubo ye*Pedagogy-Andragogy-Heutagogy* xa benikwe ithuba lokwenza njalo. Kucetyiswa ukuba ootitshala bamkele iindlela ezintsha zokufundisa ezikhuthaza ukufunda ngenkuthalo nakwizifundo ezigxininisa kumfundi.

TABLE OF CONTENTS

SEC DESCRIPTION   **PAGE**

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

4IR	Fourth Industrial Revolution
AFCP	Altered Flipped Classroom Pedagogy
BPNT	Basic Psychological Needs
C2005	Curriculum 2005
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CAPS	Curriculum and Assessment Policy Statement
DBE	Department of Basic Education
DHET	Department of Higher Education and Training
DoE	Department of Education
FC	Flipped Classroom
FCP	Flipped Classroom Pedagogy
FET	Further Education and Training
FL	Flipped Learning
FLN	Flipped Learning Network
FQ	Feedback Questionnaire
HET	Higher Education and Training
NCS	National Curriculum Statement
NEIMS	National Education Infrastructure Management System
NGO	Non-Governmental Organisation
OBE	Outcomes Based Education
OECD	Organisation for Economic Co-operation and Development
PAH	Pedagogy-Andragogy-Heutagogy
PIRLS	Progress in International Reading Literacy Study
RD	Research Diary
RNCS	Revised National Curriculum Statement
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SDL	Self-Determined Learning
SDT	Self-Determination Theory
SEQ	Student Engagement Questionnaire

SR	Spontaneous Response
SRQ	Secondary Research Question
STEM	Science, Technology, Engineering, Mathematics
TA	Thematic Analysis
TIMSS	The Trends in International Mathematics and Science Study
UNISA	University of South Africa
WCED	Western Cape Department of Education
ZPD	Zone of Proximal Development

CHAPTER 1

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

As a full-time teacher and part time researcher I have the privilege of looking at educational research from a completely different vantage point. Needless to say, when I embarked on this journey, I had the desire to contribute, not only to the academic and scientific field of research, but also to empower teachers to improve classroom practice to prepare their (and my) learners more adequately for the 21st century. The COVID-19 pandemic caused a catharsis in the realm of education as the long called for change from the established traditional system was exemplified.

Traditional teaching practices across the globe rarely encourage deeper learning or help learners develop a wide range of 21st century skills (Pellegrino, 2017). There has been a call to break free from the 'ossification of teaching practice' as at present evidence suggest that it is resisting change (Hobbiss et al., 2021). One of the subjective aims of this study is to disrupt teachers' established and longstanding institutional practices to expose them to alternative perspectives on the potential power of an alternative pedagogy (Reeves, 2018). It is also to empower them, as a change in pedagogy is considered one of the key drivers for improved learning outcomes (Bertram et al., 2021).

1.2 THE IDEA

The idea for the thesis initially originated from a combination of my individual teaching experience, an interest in cognitive education and a discussion with a lecturer who introduced me to 'flipped classroom' research (Bergman & Sams, 2012b). Upon further investigation, Bergman and Sam's research (2014) led me to their 'flipped learning' approach. The theoretical foundation underlying this pedagogical approach appealed to me, as it directly addressed one primary shortcoming of teaching and learning that became all the clearer to me: *learners need to become the driving force behind their own learning*.

The above-mentioned was reiterated through an incident during one of my grade 11 classes. One of my academically strongest learners responded the following way when he was asked to give his own interpretation of the title of a poem that we had just finished discussing in class: *"Miss won't you just write down the correct answer on the bord for us to copy?"*

Upon reflection, I came to the realisation that something was terribly wrong. Although I was trying to make my classes interactive, I was alarmed at the display of this learner's demand to passively consume knowledge. It also, though somewhat abruptly, made me aware of the reality (and danger) of teacher-led teaching or knowledge transfer due to various systemic factors which inevitably deprived learners of individual learning experiences. I started questioning whether learners were truly actively engaged, motivated and progressively developing their individual intellectual capacity. How could I, as a teacher, acclaim a system where my learners are wholly dependent on me to 'know', 'understand' and 'learn' when it seemed as if they were largely only developing their ability to memorise static knowledge? How could I as a teacher willingly endorse a 'teach-to-the-test' mentality?

On this journey of investigating what later became known to me as the 'passive learning phenomenon', I realised that other researchers had similar research interests, questions and/or experiences. Among these were Bristol (2014, p.43), *"…the teacher should tell me what I need to know to past the test"* and an article published by Kenwright, et al. (2017) titled *"Just tell me what I need to know to pass the exam!" Can active flipped learning overcome passivity?* Chrystal Kirch, a teacher, gave an account of how she realised learners were taught the same way, that she was not differentiating learning, that her class was not fostering deep learning or allowing for in class connections, inquiry and other higher-order thinking activities. She came to a similar conclusion. In her words: *"My class was filled with passive learners. I did not create an environment where students could be active learners on a daily basis"* (Bergmann & Sams, 2014, p.42).

From the above emanated a determination to explore possible explanations and solutions to the exhibited passive learning behaviour of learners in high school classrooms. What became apparent, is the lack of active engagement and learners' inhibition to take responsibility for/or ownership of their learning. It also seemed as if a

culture of over reliance on a rote learning and/or a teacher-led pedagogy, has slowly but surely established itself in classrooms over time. Another concern is teachers who pace their lesson according to the needs of the slowest learner (Bertram et al., 2021).

Rote-learning often leaves little room for critical thinking and questioning, which is central to the learning experience (Väyrynen, 2003). It also forms a stark contrast to the pedagogical outcomes that were introduced by the South African Department of Education (2002):

- Learning has to be active;

- There is a focus on critical thinking, reasoning, reflection and action;

- Knowledge is integrated in the sense that it is relevant and connected to real-life situations;

- The educator is a facilitator for learning – and that learning goes beyond memorising;

- Flexible time frames allow learners to work at their own pace (in Väyrynen, 2003, p.6).

Based on the outcomes mentioned above, a learner-centred approach to teaching and learning is envisaged, which necessitates a shift from over-reliance on a traditional teacher-centred pedagogy (Spencer & Jordan, 1999). These outcomes also envision learners at the centre of their educational processes and place a greater focus on individualised learning. In line with the aforementioned, Barrenechea et al. (2022) highlight the need to focus professional development on instruction to positively impact learning. They continue by emphasising the importance of contextualised strategies that are relevant to real-life classroom contexts.

Whilst embarking on this journey of primarily researching teacher-centred pedagogy, an instructional strategy (flipped learning), a theory of learning (heutagogy) and an emerging discipline (neuro-education) grounded the research idea for a pedagogic intervention to address passive learning, which also substantiates the advantage of learners who actively engage in the learning process, take ownership of their learning and ultimately become more self-determined.

Neuro-education has over the last decade established itself as a recognised research discipline, and its importance and contribution to education, especially learning, is

widely recognised (Dagnew, 2017; Dubinsky et al., 2019; Feiler & Stabio, 2018; Kalbfleisch, 2015; O'Connor, 2010; OECD, 2007; Posner & Rothbart, 2005; Zadina, 2015). Not understanding how the brain works is considered as: "…an obstacle in the teaching and learning process" (Ward, 2007 in Alghafri & Ismail, 2011, p.3293). Pedagogic interventions that are aimed at establishing and fostering learner-centred instructional strategies are becoming more popular as these provide learners with more productive ways of learning while casting off 'old habits' (Aubrey & Riley, 2015). Of similar viewpoint, Gola, et al. (2022) state that knowledge on how the brain works could contribute to a better understanding of teaching-learning processes.

A greater move to technical innovation and a better understanding on how learners learn has contributed to the emergence of research on the flipped classroom (FC) (Becker & Birdi, 2018). As the context of the study is vastly different to the country where flipped learning originated, opportunities had to be explored to make it implementable within the public school system in a developing country. Flipped learning (FL) at the core relies on technology and internet access - something that is currently not feasible in the majority of public schools and communities where most learners live in the South African context. The lack of access to internet connectivity, was confirmed by the most recent National Education Infrastructure Management System (NEIMS) report that is annually released by the Department of Basic Education (DBE, 2021). Currently, of the 23 276 public schools in the country, only 20,35 % have access to the internet for teaching and learning purposes. This compelled the researcher to look at how the design of the FC could be altered to accommodate this shortcoming of technological access which is currently the reality of most South African schools.

Heutagogy is defined as - *the theory of self-determined learning* (Hase & Kenyon, 2000). Heutagogy aligns with the flipped learning approach, as it moves away from the more 'traditional' way of teaching to learner-centred learning (Kenyon & Hase, 2013, p.7). Moreover, the relationship between heutagogy and neuroscience have been recognised as it is important to know how individuals learn at a cellular level (Blaschke & Hase, 2016). Heutagogical learning also relies on learners' previous experiences to contribute to the learning process (Vinayan & Harikirishanan, 2021). Within the flipped learning approach, pre-class activities are introduced to activate learners' prior

knowledge. The compatibility between the FC as an approach to teaching and heutagogy as a theory of learning, is therefore recognised.

This study is significant as it informs an instructional strategy (flipped learning) and a learning theory (heutagogy) with neuroscientific research to transform the traditional teacher-centred classroom. Not only will learners be better equipped for 21st century learning but teachers will be equipped to align their teaching practices to meet the demands of contemporary education (Peko & Varga, 2014). It also speaks directly to the challenge by Barrenechea et al. (2022) to design curricular innovations that can bridge macro curricular decisions with everyday pedagogical practices to ultimately improve education systems.

1.2.1 LITERATURE REVIEW

In 2012, Hoadley stated that the scope of empirical classroom-based research in South Africa is limited and that the school effectiveness tradition sheds little light on what goes on in classrooms. The South African Curriculum (Curriculum and Assessment Policy Statement) is based on principles such as 'active and critical learning', which denotes an engaged and ruminative approach to learning as opposed to rote and uncritical learning (CAPS, 2011). According to Ojo and Mathabathe (2021) CAPS specify outcomes such as learner independence and collaboration. Ajani (2021) explains the move toward these specific outcomes are in line with global curriculum reform policies, that are developed to enhance learners' knowledge application and problem-solving skills across a vast number of diverse contexts.

The question, however, remains as to whether teaching and learning are differentiated in South African classrooms to meet individual learner needs, to foster learner autonomy and to encourage active learning. If not, a continuous teacher-centred approach may encourage a culture of learner passivity, where learners do not take ownership of or engage in their learning (Abeysekeraa & Dawson, 2015; Hase & Kenyon, 2013; Jacot et al., 2014). Blaschke and Hase (2016) call for a system that enables learners to become lifelong learners, who can manage change effectively and retain their desire to learn.

1.3   THE ALTERED FLIPPED LEARNING APPROACH

Flipped learning research became prominent in the educational sphere during the late 2000s. Conventional paradigms usually devote classroom time to teacher-led instruction and learners are expected to 'practice' their skills or demonstrate learning outside of class (Jacot et al., 2014). The flipped learning pedagogy fundamentally alters this approach. Direct instruction occurs outside class whereas facilitation and guided learning occurs in class. This creates an opportunity to use time in class more strategically, whether it is for group work, practising key concepts, hands-on activities or individualised attention (Bergmann & Sams, 2014; Hodges & Dubinski Weber, 2015; Jacot et al., 2014).

When Bergman and Sams (2012b) introduced FCs, they incorporated an e-learning approach, which by nature relies on digital and/or technological resources (Jacot et al., 2014). One challenge is that learners do not always have the online access or technological resources they need to access the content of the pre-class activities to prepare for class the following day (Horn, 2013; Nawi et al., 2015; Roehl et al., 2013). Another challenge is suitable resources to promote effective implementation of the curriculum (Ajani, 2021). Examples on how to address both these shortcomings, that is, adapting resources for learners in an environment with limited access to technology, was discussed in detail during the online training which forms part of the data collection of the study.

The flipped learning pedagogy may counter passive learning as it could foster learner autonomy and competence and contribute to the development of personalised learning in areas such as reflection, self-regulation and metacognitive functioning (Abeysekera & Dawson, 2015; Hodges & Dubinski Weber, 2015; Van Wyk, 2023). In the words of Van Wyk (2023, p. 28), "…flipped learning places the student at the heart of the learning process, and it obliges the individual to take self-control of their learning opportunities". Lubbe (2016) describes it as a powerful tool for learners to learn in innovative ways. Another strength of flipped classroom pedagogy (FCP), is the potential of the approach to support the active construction of knowledge which inevitably enhances the overall learning experience (Awidi & Paynter, 2019; Rotellar & Cain, 2016). Learner engagement is positively affected as learners actively participate and/or collaborate with peers (Bergmann & Sams, 2013; Kenwright et al., 2017; Steen-

Utheim & Foldnes, 2018; Van Wyk, 2023). Active participation positively affects learner empowerment as well as learner development and critical thinking (Zainuddin & Halili, 2016). What is also important, is the noticeable shift around the responsibility for learning (Kloppers & Jansen van Vuuren, 2016). The FC is therefore seen as a laudable pedagogy to facilitate learner autonomy (Yang, 2014). These key points highlight the fundamental strength and potential of the FC approach to counter learner passivity and encourage learners to take responsibility and ownership of their learning, which are two of the key concerns that were raised at the onset of this study.

1.3.1 FLIPPED LEARNING: IMPLICATIONS FOR TEACHERS AND LEARNERS

A general concern with the traditional classroom is the ability to meet individual learner needs. Teachers often feel overwhelmed with their large classes and limited contact time which unavoidably result in teaching what Bergman and Sams (2012b) refer to as 'the middle' of the class. They also emphasise teacher frustration at teaching either too fast or slowly, consequently leaving behind some learners or boring others. The move to a FC therefore necessitates role changes for both teachers and learners. Teachers take on a facilitation role and introduce a variety of active learning strategies. As the classroom interaction increases and teachers have closer contact with the learners, they gain more insight of learner ability to grasp information. This in turn provides opportunities for timeous intervention should the need arise (Hodges & Dubinski Weber, 2015; Moffett, 2015; Roehl et al., 2013). Learners too have to alter their concept of learning as the responsibility shift places a higher demand on them in terms of input and contribution. For example, if learners come to class unprepared, they may struggle to participate in the in-class activities. This in turn then runs the risk of culminating in a barrier to learning (Bristol, 2014; Nawi et al., 2015).

To date, various studies have highlighted positive learning outcomes which the FC can bring about for teaching and learning. A few of these outcomes include (i) higher levels of classroom engagement, (ii) improved reflection, (iii) the ability to self-regulate one's learning, (iv) increased levels of collaboration and problem-solving with peers, and (v) a higher awareness of one's individual learning processes (Hodges & Dubinski Weber, 2015; Mok, 2014; Roehl et al., 2013; Srivastava, 2014). Flipped learning also creates opportunities for cross-disciplinary engagement, learner empowerment and the

development of higher order thinking (Bennett, 2013; Bergmann & Sams, 2012b; Horn, 2013; Roehl et al., 2013).

1.4   HEUTAGOGY

The word heutagogy originates from the Greek word 'heut' which pertains to the 'self' (Hase & Kenyon, 2007). Within academic literature, heutagogy constitutes the Theory of Self-determined Learning (SDL) (Hase & Kenyon, 2003). Heutagogy, as a learning theory, recognises learners as autonomous individuals who learn through individual experience (Bhoyrub et al., 2010; Blaschke, 2012). When teaching and learning is approached from this vantage point, the shift towards learner-centredness is activated. The responsibility shifts towards learners to forge new paths, ask new questions and discover new contexts (Blascke & Hase, 2016).

According to Hase and Kenyon (2013), heutagogy deliberately challenges the dominant educational paradigm for its "…inflexibility that characterizes educational practice and teacher-centric learning" (p.30). Setlhako, (2021, p.3) corroborates by stating that, "Heutagogy challenges the traditional way of teaching and learning." Attention should therefore be given to Blaschke and Hase when they raise their concern regarding the unique demands and changing landscape of worker corps in the modern era.

> *We are in the age of knowledge and skill emancipation. There are no barriers to knowing, and the skills required to be an effective learner in the twenty-first century have changed dramatically, as the learner evolves from passive recipient to analyst and synthesizer. On Bloom's taxonomy, these are levels that are rarely reached in formal education* (2016, p.25).

This calls for a critical evaluation of what happens in classrooms daily and how learners are equipped and prepared to function and thrive in a modern yet uncertain society (Margarit, 2021). At present, most education systems are rooted in a model that was designed to meet the needs of the industrial era, where emphasis was placed on standardisation and performance. However, as mentioned earlier, the demands and challenges of the 21st century call for a conscious awareness of individual learning, creativity and innovation (Blaschke & Hase, 2016) as well as higher levels of learner agency (Margarit, 2021). A mind shift is required by teachers and institutions to move learners to the centre of the learning experience (Blaschke, 2016). Throughout the

SDT literature, there are four main factors that support this shift namely (i) the role of human agency in learning, (ii) the intervention of the internet and its subsequent impact on learning, (iii) the strong emergence of neuroeducation research and (iv) the biological processes which enable human learning (Hase, 2014b).

1.4.1 HEUTAGOGY: BENEFITS FOR LEARNING

In their meta-analysis conducted in developing countries, ineffective pedagogic practices included terms such as 'teacher-centred/-dominated-directed', 'ritualised and authoritarian' (Westbrook et al., 2013). Therefore, one may conclude that individual experiences are often overlooked, and teachers may be more prone to making assumptions about learners' prior knowledge and understanding. Inversely, within a heutagogical frame, a more holistic approach to the teaching and learning process creates room for prior knowledge and individual experience. As learners' prior knowledge is activated, they embark on the learning process drawing from what they already know (Blaschke, 2012). Consequently, opportunities are provided for deeper learning as learners actively ask questions, seek answers, synthesise and apply newfound knowledge (Brandt, 2013; Hung, 2014). These skills are considered essential to operate in an unknown and unpredictable future world (Brandt, 2013).

Contemporary research of this learning theory has highlighted the advantages when learners are actively engaged in their own learning and better prepared to function within the modern information age (Abraham & Komattil, 2017; Blaschke, 2012; Canning & Callan, 2010). Elsewhere heutagogy is viewed as a form of empowering education, where learners' SDL has the potential to lead to transformational experiences that may ultimately benefit society (Brandt, 2013). Heutagogical learning, in the words of Setlhako (2021, p. 3), "…could assist South African educational institutions to move away from a passive teacher centred approach to a more active, learner centred approach".

1.4.2 HEUTAGOGY: CHALLENGES FOR TEACHERS AND LEARNERS

Many educational interventions are accompanied by a resistance to change (Blaschke, 2012; Westbrook et al., 2013). Additionally, in certain traditional African societies, a culture of patriarchy condemns questioning or critical thinking (Setlhako, 2021). These

systemic and/or cultural influences may pose a significant challenge when moving to a heutagogical approach where a deliberate shift to learner-centredness is required (Blaschke & Hase, 2016).

Additionally, teachers may find it difficult to adapt to a pedagogic strategy that might seem somewhat unfamiliar. A few examples of what this may look like within a classroom context include: minimising a one-size-fits-all approach to teaching and learning, relinquishing a certain measure of teacher power and/or control, empowering learners with skills to become autonomous learners and creating a context where learning is encouraged (Blaschke, 2012; Bhoyrub et al., 2010; Dick, 2013; Setlhako, 2021).

As mentioned earlier, the South African curriculum encourages an active and critical approach to learning. This may also have implications on learners who may not be used to a learner-centred pedagogy. Managing their attitude towards learning, developing skills such as reflection and flexibility, and demonstrating levels of self-determination to foster higher levels of intrinsic motivation, are some of the novel changes that a heutagogical classroom may bring about (Blaschke, 2012; Blaschke & Hase, 2016; Canning & Callan, 2010; Hung, 2014). This could lead to some form of discord or conflict as learners are not used to a pedagogic approach where they have to take responsibility for their learning. Eventually this may result in learners who revert to their 'comfort zone' (Blaschke & Hase, 2016; Canning & Callan; 2010). Learners' levels of engagement in a heutagogical classroom are intrinsically linked to the emotions that learning provokes; consequently, they would have to be emotionally prepared for this teaching approach (Canning & Callan, 2010).

1.5   NEUROEDUCATION

Educational researchers are increasingly exploring the neurosciences to better inform, advance and/or challenge existing pedagogical practices as well as to enhance and optimise learning (Clement & Lovat, 2012; Dagnew, 2017; De Smedt, 2014; Feiler & Stabio, 2018; Jolles & Jolles, 2021; Kalbfleisch, 2015; Morris & Sah, 2016; Zadina, 2015). In addition, the link between developments in neuroscience and heutagogy have been recognised (Blaschke & Hase, 2016). Educational neuroscience brings something unique to the pedagogic intervention as it provides us with deeper insight

into how learning occurs at a cellular level. Although some teachers do not show interest in neuroscience (Lopes et al., 2022) others are looking at neuroscientific research to improve their understanding of learner needs (Hardiman et al., 2012). In addition, there are bodies of neuroscientific knowledge that can broaden teachers' understanding of pedagogical practices that promotes individual learning processes (Jolles & Jolles, 2021).

1.5.1 NEURO-EDUCATION: INFORMING PEDAGOGY ABOUT THE NATURE OF LEARNING

In the words of Feiler and Stabio (2018, p.23), educational neuroscience as a discipline "…communicates the language of multiple disciplines and applies methods from multiple disciplines to translate discoveries about the brain and its networks into educationally relevant outcomes". O'Connor's (2010) definition highlights the changes in mental activity which occurs during learning, whilst Kalbfleisch (2015), includes the physiological processes that undermine, support and enhance one's capacities to learn and create. Knowledge transfer can therefore not be equated with learning as it can be latent or meaningless to the recipient, especially when it is not based on related concepts or skills (Väyrynen, 2003). In the words of Hase and Kenyon (2003), successful learning in a teacher-led classroom is based on learners' ability to attend to narrow stimuli, remember information which is not necessarily understood and repeated rehearsal. Consequently, the question remains: How do we define or establish a pedagogy that draws on the fundamental nature of learning?

Neuroscientific research has improved our understanding of the core mechanisms that underlie the way we learn, think, reason and feel (Jolles & Jolles, 2021). This creates room for exploration within the educational arena in areas such as properties that limit or enhance learning potential, and/or stimulate critical reflection on areas such as didactics, and teacher-learner interactions (Gola, 2022). When individuals learn (perceive, process and integrate new information) neural pathways are altered resulting in higher levels of efficiency. Central to this process is asking relevant questions, something that gradually becomes supressed as learners progress through the education system and curricular restraints limit them to the minimum requirements of what they need to know. Asking questions and engaging with novel content is of utmost importance as individual questions are driven by learners' own purpose, interest and search for meaning, which provide a foundation for gaining knowledge and

understanding. If learners are not provided with opportunities to do so, this may ultimately impede individual learning (Degen, 2014; Hohnen & Murphy, 2016; Kenyon & Hase, 2013; O'Connor, 2010; OECD, 2007; World Bank, 2017).

Until now, research pertaining to the brain and learning has revealed a universal trait, namely that learning is a unique process. Even though teachers subject learners to similar 'pedagogical experiences' it is unrealistic and idealistic to expect similar outcomes. The latter is corroborated by the OECD (2007):

> *Individuals have their own representations, which gradually build up on the basis of their experience. This organised system translates the outside world into an individual perception. An individual's system of representation governs his/her thinking processes* (p.31).

Informing learning via neuro-education is crucial to optimise teachers' pedagogical approach in the classroom, specifically at the levels of lesson design, execution and the facilitation of classroom interaction. It is also vital to provide educational research with insight into the internal drive for a desire to learn (Ansari et al., 2011; Dagnew, 2017; OECD, 2007; Zadina, 2015). According to Tokuhama-Espinosa et al. (2017), a clear understanding of key neuroeducation concepts and the limitations of these together with the everyday experiences of teachers, will help them optimise their practice. When teachers receive some form of training that informs them about neuroscience, they might display higher consideration for learner needs, scaffolding and broadening educational experiences. Ultimately, they have a better insight and understanding into the neurobiology of learning which provide them with a platform to embark on their journey of moving to a more learner-centred classroom (Dubinsky et al., 2019; Gola et al., 2022).

1.5.2 CONCLUSIONARY REMARKS

It is proposed that heutagogy and flipped learning informed via neuro-education form a three-in-one unanimity. This pedagogic intervention ultimately combines elements of constructivist and socio-constructivist learning theories to transform pedagogy whilst simultaneously optimising learning. However, to achieve the latter, traditional pedagogic practices need to undergo a process of transformation. It is, however, important to note that when interventions to improve learning are introduced, they

rarely make a difference unless teachers are eager to adopt and refine them to meet the needs of their unique contexts (Arnett, 2019).

1.6   PROBLEM STATEMENT

The South African Curriculum encourages an active and critical approach to learning (CAPS, 2011, p.5). If teachers wholly rely on teacher-led instruction in their classrooms, it may strengthen a culture of passive learning, which is problematic as learners' passive learning behaviours are strengthened. At the same time, they are not given the opportunity to take ownership of their learning.

Specifically in Africa, few research studies have investigated the FCP (Ivala et al., 2013) as teachers in developing countries tend to not embrace this alternative pedagogy (Kissi et al., 2017). Through reviewing the literature, the researcher has identified three areas relating to the gap in FC research that are addressed by this study. Firstly, there is a shortage of these studies at high school level, specifically in the public-school sector; secondly, there is a lack of research in non-STEM disciplines and lastly, there is a lack of research in developing countries regarding the FCP, as schools within these countries often have limited technological resources.

These observations emerged from the extensive scope of literature that has been reviewed. Trends within the research corroborate the notion that studies regarding the FCP are mostly conducted at higher education institutions (Akçayır & Akçayır, 2018; Bäcklund & Hugo, 2018) within STEM disciplines - that is Science, Technology, Engineering and Mathematics (Eppard & Rochdi, 2017). The field of language education has received little attention (Hung, 2015) and to the knowledge of the researcher, no attention in South Africa.

1.7   PURPOSE OF THE RESEARCH

Within qualitative research, the statement of purpose indicates the researcher's intent to explore a phenomenon as experienced by individuals at a specific research site (Johnson & Christensen, 2014). Within this study, the passive learning phenomenon is explored. More specifically, the aim is to explore the implementation of an altered FCP as an intervention strategy, to address passive learning in a teacher-centred classroom.

The pedagogic intervention is theoretically informed via FC research (a pedagogic approach), heutagogy (a learning theory with its origin in psychology) and the field of neuroscience research, which are currently one of the leading emerging fields driving educational change (Allee-Herndon & Killingsworth Roberts, 2018). The main shift envisaged by the intervention, is the move from teacher-centredness to learner-centredness. Due to the nature of the FC approach, learners were provided with opportunities to actively engage in their learning as the pre-class activities aim to activate their prior knowledge via the cooperative and/or collaborative learning in-class activities.

Due to the qualitative nature of the study, a rich account is given of the passive learning phenomenon. The aim was to establish whether the intervention has the potential to successfully engage learners to become more actively involved in their own learning processes. It also sought to generate a fuller understanding of teachers' lived experiences when introducing an altered flipped pedagogy as an alternative to teacher-led instruction in the South African high school context.

1.8   RESEARCH QUESTIONS

The main research question that guided the study is as follow: *To what extent does an altered flipped class pedagogy[1] serve as an effective intervention strategy to address passive learning in a teacher-centred classroom?*

The six secondary research questions were formulated as follows:

1. How do teachers experience their role transitioning when implementing the AFCP?
2. What are teachers' perceived challenges when implementing an AFCP?
3. To what extent, from the teachers' view, does the AFCP support learners to become motivated in their learning?
4. What are the benefits for learners, as perceived by teachers, when implementing an AFCP?
5. How are teachers' existing pedagogical approaches adapted when implementing an AFCP?

---

[1] AFCP – altered flipped classroom pedagogy

6. To what extent, from the teachers' view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency and relatedness?

1.9   THE RESEARCH PROCESS

Research helps to broaden our knowledge base and ensure that we have an accurate understanding of real-world issues, problems and phenomena (Ivankova et al., 2015). Ultimately, the methodology employed served the purpose of answering the research question(s) of the study.

1.9.1   THE RESEARCH PARADIGM

Research paradigms shape research at its most basic level as worldviews frame the types of questions researchers ask, inform theoretical perspectives which, in turn, shape the choice of methodology (Broido & Manning, 2002). The paradigm of choice also reveals insight into a researchers' epistemological stance (Egbert & Sanden, 2014). Due to the nature of the research question and the aim of the study, this study is oriented a-paradigmatically. It takes an interpretive stance flowing from a methodological approach known as 'qualitative description' (Sandelowski, 2000), a 'pragmatic qualitative approach' (Savin-Baden & Howell Major, 2013) or elsewhere the 'generic qualitative approach' (Kostere & Kostere, 2021).

Atypically, within an a-paradigmatic study, the methodology is shaped by the intervention and qualitative feedback based on its effectiveness in different real-time contexts. The motivation for the prior is based on the primary purpose of pragmatic qualitative research, which is to link theory and practice (Savin-Baden & Howell Major, 2013, p.60). The intervention (AFCP) that was introduced, took the form of online teacher training, supported by a complete teacher training manual developed by the researcher. An account was given of the origin of the research question, theoretical underpinnings, and conceptual framework of the study as well as practical examples for implementation in real-world contexts.

1.9.2 RESEARCH DESIGN

Creswell and Plano Clark (2011, p.53) define research designs as: "…procedures for collecting, analysing interpreting, and reporting data in research studies" thus making it possible for the researcher to answer the research question. Research designs form part of the research methodology which are innately guided by the epistemology, ontology and axiology of the particular research paradigm.

Qualitative pragmatic research is seen as the least theoretical of the qualitative approaches and is often dismissed by critics. It is essential that the research is grounded in existing knowledge, that thoughtful linkages are made to the work of others in the field as well as the data obtained in the process of data collection, and that the findings are trustworthy, rigorous and transparent (Freshwater, 2020; Lambert & Lambert, 2012; Neergaard et al., 2009). Within educational studies, pragmatic qualitative research is commonly used when doing qualitative research (Merriam, 1998). Characteristically these types of studies draw from concepts, models and theories in educational, developmental or cognitive psychology research which ultimately provides frameworks for the studies (Caelli et al., 2003).

1.9.3 RESEARCH METHODOLOGY

In short, research methodology is considered the overall design of the study. It is the systematic planning and process or 'plan of action' on how the research is conducted from recruiting participants, sampling, collecting, transcribing and analysing data and then reporting the findings. This includes the methods (tools or instruments) that are used to obtain the data from the participants and how the researcher accounts for the trustworthiness of data (Chowdhury, 2019).

1.9.4 CONTEXT OF DATA COLLECTION

The study was conducted in the Western Cape Province of South Africa. The study area included public and private high- and combined schools across the eight education districts. The contact details of the schools were obtained from the official Western Cape Department of Education (WCED) website: https://wcedemis.western cape.gov.za/wced/findaschool.html). An advertisement (invitation to participate) was sent to school principals, deputy principals or relevant personnel to invite the teachers

at their schools to voluntarily undergo a two-hour online training session before implementing the intervention strategy in their classrooms.

1.9.5 SAMPLING

A sample is considered the group of people (research participants) who have been selected from a wider population for investigation purposes (Alvi, 2016). The main purpose of sampling is to study the characteristics of a subset that has been selected from a larger group to gain a better understanding of the characteristics of the larger group. Ideally the researcher seeks a representative sample that resembles the population from where it came (Johnson & Christensen, 2014).

Volunteer sampling was used to identify the sample of the study. This sampling is traditionally known as a non-probability sampling technique where the participants of the sample self-select themselves to participate in a study. Participants are informed about the study through advertisements and, if interested, they contact the researcher (Alvi, 2016). Crucial issues of this sampling technique include the problem of generalisation to a wider population and that only those who have an interest in the topic participate in the study (Alvi, 2016).

The advertisement sent to schools included two hyperlinks. The one hyperlink directed participants to the official letter of consent and the other to a Microsoft form where they had to complete questions on their basic demographic information and indicate that they consented to participate in the study. Completing the Microsoft form served two purposes: (i) it provided the researcher with a database of the participants and (ii) the researcher could send a direct invitation to the participants for the online training session.

1.9.6 PARTICIPANTS

The research participants included nine in-service teachers eight of whom, at the time of data collection, taught Grade 8-12 learners across various subject areas. Of the eight teachers, one taught at a private high school and seven at public high schools across the Western Cape. The exception was a Grade 7 teacher from a private combined school who was eager to attend the online training and experiment with the

AFCP in her classroom. She was included at a later stage in the study after emailing the researcher a 'spontaneous response' on her first-hand experience of the AFCP.

Although it was envisaged that participants should not have prior experience of implementing the FCP in their classrooms, some of the teachers came across research on the FC during the pandemic when exploring blended learning opportunities. It was envisaged that teachers who participated in the study should be interested in undergoing training to move from predominantly relying on teacher-centred instruction to a more learner-centred approach in their classrooms. The sample did not limit participation on any characteristics (for example, age, gender, ethnicity). Participants did not receive any inducement to participate in the study; however, they received free training from the researcher on how to implement the AFCP in their classrooms. Thayer-Bacon (2013) captures the importance of research participants on the research journey through the following:

> *What I point to here is a more humble theory of knowing that can never claim absolute knowledge. It is a theory of knowing that focuses on the process, not just the product, and recognizes that knowers and the known are directly connected. It is a pluralistic inclusive theory that insists we must include others in our inquiry process, for we can never find the answer to our problems on our own. Others contribute to our thinking right from the start, and they can help to enlarge our views beyond our own limitations* (p.26)*.

1.9.7 METHODS OF DATA COLLECTION

One major feature of well-collected data is the focus on naturally occurring events in their natural settings (Miles et al., 2020). This was particularly relevant in the context of this study as two of the data collection methods were introduced at a later stage in the study. Fieldwork is taken up by researchers because of its capacity to yield information about individuals and phenomena in the social world. The choices made by researchers, set parameters that ultimately frame what they discover. This include decisions regarding time, space and the participants that are selected to participate in the study (Savin-Baden & Howell Major, 2013). This was particularly true when data was to be collected during a World-wide pandemic and the researcher needed to be cognisant of the health and safety of the research participants as well as her own.

In short, methods are defined as "… the specific procedures that accomplish the task of gathering and analysing the data in a research study" (Egbert & Sanden, 2014,

p.74). When conducting a qualitative study, researchers are inclined to collect data that accurately captures various elements of a phenomenon to display, as far possible, its fundamental constituents. This includes the 'who, what, where' of the phenomenon as well as participant experiences (Sandelowski, 2000, p.338). Four methods of data collection were employed, comprising online interviews, feedback questionnaires based on the online training, research diaries and a spontaneous response.

1.9.7.1 Online interviews

The researcher conducted semi-structured online interviews via the Microsoft TEAMS platform. An interview protocol was designed with nine open-ended questions. Semi-structured interviews were selected as they allow the researcher flexibility to use prompts for discussion and to obtain clarity or additional information should the need arise (Johnson & Christensen, 2014; Punch & Oancea, 2014). Qualitative interviews are generally regarded as the most prominent data collection tool in qualitative research as the researcher can effectively explore people's perceptions, meanings, how they define situations or phenomena and ultimately how their reality is constructed (Punch & Oancea, 2014). Semi-structured interviews are guided by a set of questions on core elements in line with the research questions that the researcher wants to explore. The researcher can, however, adapt these in real-time, based on participants' response during the interviews (Barrett & Twycross, 2018; Johnson & Christensen, 2014; Punch & Oancea, 2014; Savin-Baden & Howell Major, 2013).

Modern day technologies have provided researchers with opportunities to explore alternative methods of collecting data. Researchers should be mindful of the potential risk to the privacy of participants, the confidentiality of data and general online security and choose their platform, for example, the online interview, accordingly (Lobe et al., 2020). During the pandemic, online interviews became a popular method to collect data, as it was seen as a 'socially distanced' method which minimised the health risk of all parties involved in the research. As the data collection phase of the study fell during August 2021 - October 2021, the researcher had little choice but to conduct online interviews. Researchers also have to take into account that online interviews may be affected by technical issues which may affect the quality of the interview (de Villiers et al., 2021). One major advantage of the online interview is that the

interviewees could choose the time and location of the interview, which improved their levels of comfortability during the interview (Mukherji & Albon, 2018).

1.9.7.2   Research diaries

Diaries or journals are increasing in popularity, especially in the social sciences, to better understand the everyday lived experiences of individuals (Filep et al., 2017). They are seen as a unique form of qualitative research whereby diarists, at the request of the researcher, write and reflect upon their experiences, thoughts and emotions (Morrison, 2012). Research diaries are research tools that can promote participation and engagement of the participants in the research process. They also provide continuity in the sense that they are used over a longer timeframe. The break in logic between entries, ultimately provides the participant with the opportunity to reflect more accurately on their thoughts and feelings (Meth, 2003).

The participants who implemented the AFCP were encouraged to keep a research diary; however, this was not compulsory. The researcher provided participants with an outline to capture their experiences which were in line with the purpose of the research activity (Morrison, 2012). Research diaries are a valuable source to collect in-depth qualitative data because participants give an account of their experiences, thoughts, opinions and feelings, based on their lived experiences (Ortlipp, 2008; Filep et al., 2017). It is important to note that diaries which are written for research purposes, are done with the full knowledge of 'external consumption' which may have an impact on participants' decisions of what to share with the researcher (Meth, 2003). The advantage of these accounts, however, is that participants may share more intimate ideas or balanced reflections (Elliott, 1997), which they may not want to share in the online interview.

1.9.7.3   Spontaneous response

Due to the 'emergent and flexible' nature of qualitative research, it allows for adaptations to be made as a response to the "…changing conditions of the study in progress" (Merriam, 1998, p.8). A Grade 7 teacher, who teaches at a combined private school, received the invitation to participate and attended the online training. A few days later, the researcher received an email (narrative account) which included an

overview of her extensive experience in the education sector and based on her experience, the relevance and applicability of the content covered during the training session. A follow-up email was sent three weeks later to the participant to inquire as to whether she has implemented the intervention in her class. Once again, the response was an extensive narrative on her experience after implementing the AFCP in her classroom.

The participant referred to above originally fell outside the sample of the study. However, due to the nature of qualitative research, researchers have the privilege to adapt and accommodate change and employ various documents to answer the research question (Flick, 2018; Hanson et al., 2011). Her two emailed responses depict a key of qualitative research - to understand the phenomenon from the research participants' point of view, also referred to as the *emic* or insider's perspective (Merriam, 1998, pp.6-7) and was therefore included in the sample.

1.9.7.4   Feedback questionnaire

As with the spontaneous response, this method of data collection was not included in original research design but added at a later stage in the research process. The 'feedback questionnaire' was introduced as some participants valued the approach but could not continue with the research process due to (i) time constraints or (ii) consent being denied by school principals to implement the intervention. The feedback questionnaire provided participants with the opportunity to contribute to the research by reflecting on the online training and evaluating the possibilities of the intervention to counter the passive learning phenomenon.

The feedback questionnaire consequently served as a secondary source with questions being similar to the ones outlined in the interview protocol. The questions were aligned with the key concepts as identified in the literature review of the study, as well as the research questions guiding the study (Gehlbach et al., 2010). Unstandardised questionnaires, which included well-defined open-ended questions, were used as they provided participants with the opportunity to formulate answers unique to their experience and the context wherein they teach (Sarantakos, 2013). Open-ended questions are valuable as researchers can utilise them to gain a rich picture of the phenomenon under study through the personal insights, perspectives

and authentic voices of the participants, ultimately shedding new light on how the phenomenon is interpreted (Hanson et al., 2011; Newby, 2014).

1.9.8 DATA ANALYSIS

The chosen method of analysis should primarily be driven by the research questions and the broader theoretical assumptions underpinning the study (Braun & Clarke, 2006). When qualitative data is analysed, an inductive approach is followed (Merriam & Grenier, 2019), and findings are communicated in the form of themes, sub-themes and categories (Merriam, 2002). The researcher does not aim to fit the data within a pre-existing coding frame (Braun & Clarke, 2006; Clarke & Braun, 2017). The idea is to emphasise the participants' lived experiences of the phenomenon which is often part of their everyday lives. The data collected are therefore situated in close proximity to these experiences and also give an account of the contexts in which the participants function (Miles et al., 2020).

After collecting the data, the researcher had to (i) prepare the data for analysis; (ii) explore the data; (iii) analyse the data; (iv) represent the analysed data; (v) interpret the findings and (vi) validate the trustworthiness of the data (Creswell & Plano Clark, 2011). There is, however, no clear line that can be drawn between data preparation, preparation and analysis and then between analysis and interpretation, as the one necessarily illumines the other (Sandelowski, 1995).

Thematic analysis was selected as the method to analyse the data in the study. It was considered for its theoretical freedom which allows the researcher flexibility to explore the data to give a rich, detailed yet complex account thereof. The method has also been used across a variety of epistemologies and research questions (Braun & Clarke, 2006). Although limited guidelines on how to conduct rigorous thematic analysis exists in the literature (Nowell et al., 2017), Braun and Clarke's (2006) six phases serve as a guide to assist researchers in this process. An important outcome when conducting thematic analysis should be to present findings that are "…sensitive, insightful, rich, and trustworthy research findings" (Nowell et al., 2017, p.2) and capture the views, perspectives, behaviour of the participants under study (Clarke & Braun, 2017). Analysis enables the researcher to view the phenomenon from other vantage points,

which ultimately enables the target audience to look at the phenomena in a novel way (Sandelowski, 1995).

1.9.9 DATA VERIFICATION STRATEGIES

Having trustworthy results is particularly important to professionals in the applied fields where researchers and/or practitioners intervene in participants' lives. The findings have to demonstrate a sense of rigour, present insights and conclusions that ring true to their intended audiences and give some form of account for their validity and reliability. In short, validity refers to how well the phenomenon under study is accurately reflected (Richie et.al, 2014). In 1985, Lincoln and Guba proposed 'dependability' as an alternative to reliability as its applicability in the social sciences became contested. In short, dependability ensues when the process of the study is considered consistent or stable over time across researchers and methods (Miles et al., 2020).

Common strategies to ensure the rigour and trustworthiness of qualitative data include triangulation, using member checks, thick rich descriptions of the findings, declaring researcher bias, presenting negative cases and peer debriefs (Creswell, 2009). It is important to note the active role that the researcher plays in the process of data verification. Often researchers have to respond to the data which signifies a move beyond technicalities and instructions. Researchers therefore require a certain skillset which includes key qualities such as creativity, sensitivity and flexibility when analysing the data (Morse et al., 2002).

1.9.10 ETHICAL CONSIDERATIONS

In 1964, the tenets of ethical research were outlined in the Declaration of Helsinki namely autonomy, beneficence, justice and non-maleficence. The prerogative therefore lies with the researcher to conduct research in such a manner that is safe and advantageous for individuals. The research has to account for the informed consent, confidentiality, voluntary participation as well as balancing the risk against the benefit of the participants (Rhodes & Bernays, 2014).

The researcher obtained permission from the individuals and organisations that are involved in the study. This included the University of South Africa's (UNISA) Research Ethics Committee as well as the Western Cape Department of Education, school

principals and the informed consent of the research participants (teachers) before conducting the research.

1.10 CHAPTER OUTLINE

1.10.1 CHAPTER 1: BACKGROUND TO THE STUDY

Chapter 1 served as an introductory chapter to provide the reader with an outline of the study including the key concepts and theories, proposed methodology and ethical considerations.

1.10.2 CHAPTER 2: LITERATURE REVIEW PART 1 - CONTEXTUAL FRAMEWORK

Within Chapter 2, the reader is provided with the contextual framework of the study which includes an overview of the history of the South African education system. The rationale for the study is provided and special reference is given to the move from a teacher-centred to a learner-centred approach.

1.10.3 CHAPTER 3: LITERATURE REVIEW PART 2 - CONCEPTUAL AND THEORETICAL FRAMEWORK

Chapter 3 forms the second part of the literature review. The reader is introduced to the fundamental features of the AFCP. This includes a comprehensive overview of the flipped classroom pedagogy, heutagogy as a learning theory, and the relevance of neuroeducation in the context of the study. An in-depth account of the theoretical framework, Deci and Ryan's Self-Determination Theory is provided.

1.10.4 CHAPTER 4: RESEARCH METHODOLOGY

The methodology employed to answer the research question is described in Chapter 4 of the study. The research process is captured via a description of the research paradigm, -design, methodology and how the data were analysed and verified.

1.10.5 CHAPTER 5: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

In Chapter 5, the reader is provided with an in-depth discussion and interpretation of the four themes and eighteen sub-themes which emerged in the data.

1.10.6 CHAPTER 6: DISCUSSION OF FINDINGS

In Chapter 6, the researcher aims to answer the six secondary research questions which stem from the primary research question. Each question is answered individually and integrated with the existing literature.

1.10.7 CHAPTER 7: RECOMMENDATIONS, LIMITATIONS AND CONTRIBUTION

Within the last chapter, recommendations are made based on the findings in Chapter 6. The limitations of the study, the areas for further research as well as the contribution of the study to the scientific research are presented to the reader.

1.11 CONCLUSION

The aim of chapter 1 was to provide the reader with a synopsis of the study at hand. It began by providing the reader with background to where the primary research question originates from. This was followed by an overview of the main theories and concepts which served as a foundation for the study. The research process was briefly discussed, and attention was given to the research design, methodology as well as the method of data analysis. The chapter concluded with an outline of the six chapters to follow.

CHAPTER 2

LITERATURE REVIEW: PART 1

CONTEXTUAL FRAMEWORK

2.1   INTRODUCTION

A literature review serves as a framework to establish the importance of the study and to eventually serve as a benchmark when results are compared with other findings (Creswell, 2009). Within this study, the literature review is divided into two chapters. The first (Chapter 2) provides the reader with an overview of the contextual framework of the study which includes the rich history of the South African education system focusing on the post-apartheid regime (1994 onwards) to the present, as well as the rationale for the study. Within the second part of the literature review (Chapter 3), the main theories, concepts and theoretical framework that underlie the study, is discussed in-depth.

The South African education system has had and continues to face severe challenges that greatly impact the quality of education within the country. These challenges manifest themselves at a wide variety of levels in the system and the extent of their impact on teaching and learning is unknown. Some examples include low quality schooling, incomplete curriculum coverage, overcrowded classrooms, inadequate teacher subject knowledge, teacher absenteeism, poor assessment skills, teachers' lack of proficiency in English, poor classroom management skills, wasted learning time, poor discipline, insufficient opportunity to learn and insufficient acquisition of basic literacy, teacher dissatisfaction with the quality of training workshops and numeracy skills as indicated by international surveys such as TIMSS, PIRLS and SACMEQ (DBE, 2013; Kamanga, 2013; Letseka, 2014; Modisaotsile, 2011; Govender, 2018; "South Africa has one of the world's worst education systems," 2017; Taylor, 2008; Van der Berg et al., 2016).

Schools do not operate in isolation. Research within the same arena, has revealed the challenges for education where there is poverty, a lack of parental interest and an

increase in violence (DBE, 2018; Modisaotsile, 2011; Moloi, 2010). At a departmental level, the Department of Basic Education also complicates curriculum delivery with their history of a constant state of curricula renewal (Spies, 2011) and unreliable or insufficient distribution of resources (Modisaotsile, 2011; Moloi, 2010).

The list mentioned above is not exhaustive. Schools also have to overcome a culture of complacency and low expectation (Taylor & Shindler, 2016) and a breakdown in the culture of teaching and learning (Christie, 1998). Research done by Spaull (2013b) found that the divide between rich and poor is so enormous, that the country actually has two different education systems. Consequently, the poor quality of schooling that permeates many schools in the country contributes to the youth being ill prepared for the workforce or to explore further training opportunities at tertiary level (Spaull, 2013a). In addition, teachers have also raised their concern about the focus on curriculum coverage that often comes at the expense of quality learning (Bertram et al., 2021).

What poses a bigger problem is that the challenges above somewhat cast a shadow over fundamental issues that are currently not being addressed within educational research in the South African context. Some examples include a focus on individual learning needs and how South African education prepares learners to function in a rapidly changing global knowledge economy. This is reiterated by McWilliam (2008) who states that:

> *The challenge for academic teachers is to promote and support a culture of teaching and learning that parallels a post-millennial social world in which supply and demand is neither linear nor stable, in which labour is shaped by complex patterns of anticipations, opportunities, time and space, and in which new combinations of 'creative' skills and abilities are increasingly in demand* (p.263).

This problem stretches beyond our national perimeters. According to Amel Karboul, member of the Education Commission for global education, there is currently a global learning crisis as the focus is on schooling and not learning. In 2017, the Education Commission asked a critical question: "How many learners are actually learning?" This call was echoed by the World Declaration on Education for All who concurs that education should intensify the focus on 'actual learning acquisition and outcomes' instead of looking at enrolment numbers and the number of learners who complete certification requirements (Dormehl, 2019).

2.2 EDUCATION IN THE SOUTH AFRICAN CONTEXT: AN OVERVIEW

A nation's national curriculum is at the heart of its education system. It is a primary source of support and direction for learning and teaching in the education system, and plays the role of equalizer in terms of educational standards. There is therefore an imperative on educational authorities to develop curriculum policy that is of a high quality and that communicates the curriculum message widely and with clarity (DBE, 2009, p.11).

In this section, a brief overview is given on the history of education in Post-Apartheid South Africa. After the country's democratic election in 1994, education was identified as one of the key reform areas. A decision was made to move from the then authoritarian and discriminating curriculum, towards a curriculum that embraces democratic and constructivist educational principles (Nykiel-Herbert, 2004). The purpose of the reforms, therefore, had the primary aim of correcting the imbalances of the pre-apartheid education regime (Ajani, 2021, p. 78).

According to Chisholm (2005a), curriculum reform occurred in three main stages. Firstly, the curriculum was 'cleansed' from traces of racist and sexist elements. The second stage involved the introduction of Outcomes Based Education (OBE) via Curriculum 2005 (C2005) and in stage three, C2005 was reviewed and revised based on recommendations made by a Ministerial Review Committee appointed in 2000. The curriculum in South Africa underwent radical changes over a short time span which, according to Hoadley (2015), can be captured in three reform moments. The first, C2005 or OBE, was implemented in 1998 and considered a radical constructivist curriculum. It was revised shortly after and the shift was made to a highly specified curriculum, the National Curriculum Statement (NCS). The NCS was ready for implementation in 2001 and later posted on the Department of Educations' website for review and comments in 2009 and again in 2010. This led to the formulation of the current Curriculum and Assessment Policy Statement (CAPS) which was officially implemented in 2011 (Hoadley, 2015; Spies, 2011).

2.2.1 CURRICULUM 2005 OR OUTCOMES BASED EDUCATION (OBE)

Curriculum 2005 was officially approved as policy by the Council of Education Ministers on 29 September 1997 and positively received as an alternative for the Apartheid

curriculum (DBE, 2009). Curriculum 2005 essentially did more than bring about educational reform. It introduced a new paradigm - a move from content-based teaching and learning to an outcomes-based one that adheres to learner-centred teaching and learning strategies such as learning by discovery and groupwork (Cross et al., 2002; DBE, 2009). Teachers were presented with information booklets on Curriculum 2005 mainly regarding the transformation of teaching practice and assessment. The differences between the 'old' and 'new' were captured as:

- passive vs active;
- exam driven vs assessment on an ongoing basis;
- rote-learning vs critical thinking, reasoning, reflection and action;
- textbook/ worksheet bound vs group work and/or teamwork;
- teacher-centred vs learner-centred;
- teachers responsible for learning vs learners responsible for learning (DoE, 1997 in Nakabugo & Siebörger, 2001).

Although the OBE model strongly aligns with the pedagogic intervention that this thesis is arguing for, it failed prematurely for a variety of reasons. Some policymakers advocated an ideological model with the expectation (or hope) that it would redress educational inequality (Nykiel-Herbert, 2004). Others warned against the danger of 'educational borrowing' as South Africa is a developing country and that classroom realities in such contexts are prone to create challenges for a learner-centred pedagogy (Cross et al., 2002; Schweisfurth, 2011).

At the ground level, teachers were positive about the principles of OBE. However, shortages of personnel and resources to implement and support OBE as well as policy overload, resulted in teachers who were ill-prepared to understand how the OBE framework should work or how to critically evaluate the causes of their learners' lack of progress. Teachers were also expected to be critical, independent curriculum developers even though they had little or no training in learner-centred teaching methodologies and limited access to resources. The curriculum also emphasised the general to the detriment of the specific, which may have contributed to teachers' uncertainty. This eventually resulted in teachers returning to the old chalk-and-talk method (Chisholm et al., 2005; DBE, 2009; Maodzwa-Taruvinga & Cross, 2012;

Nykiel-Herbert, 2004; Spreen & Vally, 2010) and "…the intended recipe for educational success [turned] into a new variety of educational malpractice, producing yet another generation of illiterate, innumerate South Africans" (Nykiel-Herbert, 2004, p.249).

2.2.1.1   Revised National Curriculum Statement (RNCS)

Only a short period of time passed before it became evident that learners were under performing, both on national and international (TIMSS, SACMEQ) levels (Horn, 2009; Ramatlapana & Makonye, 2013). This led to a call to revise C2005 in 2000 which was instated as the new official education policy, the Revised National Curriculum Statement (RNCS), in April 2002 (Chisholm, 2003) which were meant to "…cater for the weaknesses of OBE in 2005" (Ajani, 2021, p. 78).

The Minister of Education at the time, Kader Asmal, appointed a Ministerial Review Committee in 2000 under the leadership of Linda Chisholm to review and then report their findings of the shortcomings and shortfalls of C2005. These included:

- a lack of alignment between curriculum and assessment policy;
- inadequate orientation, training and development of teachers;
- learning support materials that are variable in quality, often unavailable and not sufficiently used in classrooms;
- policy overload and limited transfer of learning into the learning spaces;
- shortages of personnel and resources to implement and support C2005; and
- inadequate recognition of curriculum as the core business of education departments (Chisholm et al., 2005, p.6).

Based on their findings, the Review Committee suggested a major revision of the curriculum. The first was to make the language more understandable and accessible for teachers. Further suggestions were made regarding teacher training, learning- and support materials as well as restructuring and organisation at departmental level. Lastly, the Review Committee advocated for a stronger sense of human-rights content in the existing framework (Chisholm et al., 2005; Chisholm, 2005b; Chisholm, 2003). To legitimise the process, further input was received from curriculum developers at universities, NGOs, and provincial departments and a Draft version was made available for public comment (Chisholm, 2005b).

However, the RNCS brought about new concerns. There was first of all no control over how it would be interpreted and eventuate in different contexts (Chisholm, 2005b). There was also no clear or detailed plan for the implementation of the RNCS and, unlike C2005, there was no clear message on the benefits of the new curriculum and/or the importance thereof. The message reiterated by the Department of Education was that the RNCS is not a new curriculum. This eventually opened a space for teachers and district officials to blend the RNCS into C2005 (DBE, 2009). Another serious cause for concern, was that some teachers saw no relationship between C2005 and the RNCS even though the RNCS was an upgrade thereof (Pudi, 2006). This once again stresses the ideal as opposed to what happens at 'ground level'.

2.2.1.2 Curriculum Assessment Policy Statement (CAPS)

In 2009, the Minister of Basic Education at the time appointed a panel to investigate the nature of the challenges and problems experienced with the implementation of the RNCS to improve its implementation. It was criticised mainly for teacher overload, confusion and learner underperformance in local and international assessments. Consequently, the focus of the panel was mainly to identify challenges especially regarding teaching and learning quality and to develop the necessary interventions (DBE, 2009).

A draft version of the Curriculum Assessment Policy Statement (CAPS) was made available for comment in September 2010 and was due for implementation in January 2011. However, this document was revised again after problems were pointed out. The CAPS 2 document was then released in March 2011 (Spies, 2011). Recommendations to strengthen the new curriculum included developing a Policy document for every learning area and subject by phase. This was to assist teachers especially regarding the complexities and confusion created by curriculum and assessment policy vagueness, the lack of specification and misinterpretation (DBE, 2009).

All subject documents of the CAPS curriculum were designed to start with a background and overview of the general aims of the curriculum (aims replaced outcomes). This was followed by a commitment to foster social transformation and developing learners' ability to think critically. From there the development of more complex knowledge that provides teachers with a well-defined idea of the content

which they have to cover per term as well as the required number of assessment tasks to be completed was presented. Workbooks were introduced to remove the burden or power of curriculum development and to create uniformity across contexts (Moodley, 2013; Msibi & Mchunu, 2013). Msibi and Mchunu (2013) concur that even though the ministry insisted that CAPS is not a new curriculum, there is a definite reversion to more traditional methods of teaching rather than the more progressive ones that were originally introduced after 1994.

2.3   RATIONALE OF THE STUDY

In 2015, the Department of Education set out 27 goals (1-13 *the outputs to be achieved* and 14-27 *how the outputs are to be achieved*) for Schooling 2030 (DBE, 2015). The aim of the outputs is to focus improvement on key areas such as an increase in the number of Grade 3, 6 and 9 learners who master the minimum literacy/language and numeracy/mathematics competencies, as well as an overall improvement in the average performance of Languages (Grade 6) and Mathematics (Grade 6 and 9). It also aims to increase the number of Grade 12 learners who pass Mathematics and Physical science and qualify for a bachelor's programme at university level. To achieve the proposed outputs, suggestions were made on how to recruit young teachers, maintain the availability of teachers in the teaching corps, encourage teacher training (in terms of professionalism, teaching skills, subject knowledge and computer literacy), manage the utilisation and access of resources (textbooks/media/ computers) as well as ensure curriculum coverage, parent participation and that inclusive education policies are implemented.

Although the goals outline a clear vision for 2030, it falls short in one significant area that is, pedagogy. There is no explicit reference on *how* teachers should teach what they know. What has also been neglected is empowering teachers to create learning opportunities for their learners to grow and develop as critical and creative thinkers in a challenging and fast changing world. This is problematic, as teachers are considered essential when it comes to applying strategies which are meant to enhance the quality of teaching and learning (Bertram et al., 2021).

2.3.1 A BREAKDOWN IN THE TEACHING AND LEARNING CULTURE

> *Memorize the Latin and common names of the fishes of Alberta and their distinguishing characteristics, attend the exam on two cups of coffee and no sleep, regurgitate the mental meal of the previous night like the winner of a pie eating contest, then set about forgetting the whole experience. Learning was not dynamic, it was not interactive, it was not intuitive and it was certainly not in any way self-directed* (Taylor, 2014, p.79)*.*

Designing a pedagogic intervention to address passive learning in the South African context is significant for various reasons. The National Development Plan envisions a South Africa where every young South African receives quality schooling (DBE, 2015). Systemic interventions are significant at all levels as they do not only emphasise the complexity of education systems but also provide us with a richer understanding of sub-systems and education systems as a whole (Khoza, 2013). This potentially addresses the shortcomings and critical areas that have been neglected to rebuild the path towards restoring a culture of teaching and learning.

Teachers are considered key role players when it comes to advancing learning or learner performance and/or establishing a culture of learning (Collins & Millard, 2013; Spaull, 2013a; Weeks, 2012). Problematic, however, is that research conducted within the South African context has revealed constraints such as a low command of innovative teaching methodologies or using old methods of teaching (Kamanga, 2013; Letseka, 2014). This may become onerous as one of the fundamental requirements of developing effective learning and teaching in schools is sound classroom practice from specialist teachers (Bush et al., 2010).

2.3.2 PREPARING LEARNERS FOR A GLOBAL KNOWLEDGE ECONOMY

Developing learners' ability to think critically and/or creatively, to reason, reflect, analyse or communicate does not happen spontaneously. Schools consequently have to shift their focus to developing attitudes, interests, value systems and 21st century skills (Gejdoš, 2019). The landscape of education has started to shift and ideas such as deeper learning are gaining interest (Pellegrino, 2017) whilst the suggestion has been made to integrate 21st century skills into the core curriculum (Anagün, 2018). It can be expected that teachers would have to wilfully adapt their pedagogic practice to plan and create opportunities for developing these skillsets in the classroom.

The Education 2030 Agenda reiterates the importance of shifting towards learning outcomes where learners are able to adapt their knowledge to their daily contexts and solve real life problems. In addition, the quality of learning is defined in terms of knowledge, skills and learners' abilities (Yamada, 2016). When learners are able to transfer and apply knowledge to novel situations and engage in the knowledge construction process, learning becomes deep and meaningful (Mayer, 2002; Schweisfurth, 2011).

Notwithstanding the demands made on learners worldwide by the Fourth Industrial Revolution, Claxton and Lucas have identified 'Learning-Oriented Habits of Mind' where qualities such as curiosity, courage, exploration, investigation, reasoning, sociability, reflection and imagination are key to function in a global economy (Claxton & Lucas, 2009). Margaret Heffernan highlighted the skills learners need for an unpredictable world. She considers coalition building, imagination, preparedness, doing experiments and bravery as vital sources to build resilience and strength to be adaptable and inventive (TED, 2019).

Within the South African context, however, there has been a complaint of insufficient time to develop learners' thinking skills due to the fast pace of curriculum coverage, as demanded by CAPS (Seale, 2012). Learners' inability to demonstrate these required skills and/or abilities becomes evident when they enter tertiary education (Collins & Millard, 2013; Narendran et al., 2018; Taylor & Shindler, 2016). Implementing a well-found intervention to address passive learning and create opportunities for learners to develop these fundamental skills and abilities is considered critical in the modern era and to prepare learners for Higher Education and Training (HET).

2.3.3 THE DEVALUATION OF LEARNER-CENTRED TEACHING

Earlier in this chapter, reference was made to a paradigmatic shift in the South African context from content-based teacher-centred teaching to a learner-centred pedagogy. Reform in any system does not occur in isolation and teachers play a crucial part in initiating, driving and eventually establishing change in their classes. Problematic is that research has shown that teachers tend to be resistant to change, especially when it comes to learner-centred teaching. Teachers find it challenging to 'let go' in order for learners to learn more independently (Westbrook et al., 2013), as they have to

"…fundamentally change their views of the nature of knowledge, of the learner and his/her role, and of classroom organisation in general" (Tabulawa,1997, p.192). Tabulawa (1997) continues by highlighting that such an experience may be anomic as it may lead to the disruption of the existing cognitive order, resulting in a complete rejection of the proposed pedagogical innovation.

'Teaching to the test', however, requires a very low level of cognitive demand (Hoadley, 2012) with the general outcome of curriculum coverage to mostly test learners' abilities to memorise content. Elsewhere reference is made to the 'dependency model of education' where learners overly rely on their teachers for support and guidance (Narendran et al., 2018, p.9). They confer that this passive form of content delivery contributes to learner demotivation and inhibits learning.

In terms of best practice for classroom instruction, De Jager (2013) has suggested having a learning environment that includes all learners socially. Geduld and Sathorar (2016) echo the notion of social inclusion by emphasising the idea of drawing on the local knowledge and experiences that learners bring to class. By implication, learners themselves are major sources of information and could potentially add significantly to the rich and wholesome learning experience.

Teachers need to keep in mind that learning is, by fault, differentiated as no two learners are alike (Väyrynen, 2003). Learners need to actively engage in the process where content is processed into ideas, practices, values and skills that are subject to change over time as learners grow and mature and interact with teachers and peers (Väyrynen, 2003). Considering the pedagogic intervention under discussion, it is essential to create a learning environment and/or conditions for learning where learners can access their prior knowledge in order to co-construct knowledge with their peers and teachers.

Limited learner-centred learning may have detrimental outcomes. For one, research has shown that learners who are constantly exposed to rote-learning are unable to transfer learning to novel situations (Mayer, 2002). Contrariwise, when learners are engaged at high levels of cognitive demand, their learning improves (Taylor, 2008). Teaching practices should aim to focus on the reproduction of knowledge "…that deepens and enhances the understanding of human experience" (Geduld & Sathorar,

2016, p.12). Prospectively, teachers ought to ask themselves what universal pedagogic method can provide learners with the same opportunity to learn and excel. The ideal is to attain and maintain learner individuality and to accommodate unique learner needs. Classrooms therefore have to become spaces that foster a culture of thinking where individual potential is developed (Väyrynen, 2003).

South Africa has a relatively short history of classroom-based studies and empirical research, in this regard, is limited (Hoadley, 2012). Although Spaull (2013a) highlighted six key areas that needed to be addressed in order to improve teaching and learning in the South African context, none refer to pedagogy or teaching methods. Evidently, there is scope to empirically research how teachers can adapt their teaching approach to actively engage their learners in the process of knowledge construction. Two considerations when undertaking reform initiatives in high school contexts, is (i) taking into account the complex needs of contemporary adolescents in a rapidly-changing society and globally-connected world (Beutel, 2006), and (ii) successful interventions cannot be imported into new contexts – they can only be used as starting points (World Bank, 2017).

This thesis consequently argues for a pedagogic intervention that draws on flipped learning and neuroeducation within a Self-determination Theory framework to address the passive learning phenomenon. It is proposed that this pedagogic approach could provide learners with an opportunity to actively participate in the process of individual knowledge construction and skill development. It may also have a positive impact on developing their ability to explore and think critically and creatively. As a result, this may lead to an improved quality of individual learning experiences which may have a positive impact on the South African education system.

2.3.4 THE MOVE TOWARDS 21ST CENTURY LEARNING DISPOSITIONS

> *The demands of contemporary education are no longer possible to meet in a system that emphasizes teaching and neglects the learning that goes on in the classroom* (Peko & Varga, 2014, p.60).

Education in the 20th century was designed to prepare the youth to meet the needs demanded by industrialised systems where hierarchical bureaucratic organisations dominated (Mehta, 2013 in Fullan & Langworthy, 2013). Today's world looks vastly

different. For one, the nature of work has changed and keeps on changing at a rapid speed and, by implication, learners are required to have different skillsets when they enter the workforce (Tight, 2021). Organisations have become arenas where performance is measured by innovation through idea creation and one's ability to execute those ideas (Fullan & Langworthy, 2013). Additionally, the rapid speed at which technology changes, parallel with knowledge creation, reflects how easily knowledge can become obsolete (Taylor, 2014). 21st century skills thus demand a new learning paradigm (Kivunja, 2014).

Naturally, it goes without saying that the slow transition from an education system that was designed for the demands of the industrial revolution in the 20th century, towards a system that meets the complex needs of 21st century learning, complexifies and creates strains on modern day education. This is even more so the case in South Africa where there exists a hybrid mix where some sectors are transitioning between the second, third and fourth revolutions (Menon & Castrillón, 2019). This is reiterated by Dumont et al. (2010) who states that even though the learning sciences are enriching our understanding of how learners learn best, many existing school environments reflect the opposite. Formal education systems tend to emphasise knowledge transfer, memorisation and standardised assessments to the detriment of individual learning (Delors et al., 1996; Peterson, 2018b). Because traditional teaching prevails, current requirements are not met and learners are not being prepared for the future (Gejdoš, 2019). The calls by Kim et al. (2019) for a shift in teacher pedagogy as well as Sumardi et al. (2020) who states that 21st century teaching ought to align with the demands of 21st century learning, is timeous.

The modern era presupposes a move towards greater learner autonomy which is fundamentally underlined by constructivist learning theories. Central to these theories is acknowledging the teacher as a learning facilitator and provider of experiences rather than a transmitter of knowledge. Subsequently, greater responsibility is placed on learners to participate in constructing their own meaning within the process of learning (Aldridge et al., 2004).

Acquiring greater levels of learner autonomy requires a move towards more visible displays of active learning pedagogies at ground level. New demands in terms of skillsets are emerging, which consequently highlight the importance of 21st century

skills such as creativity, critical thinking, collaboration, communication literacy, innovation, complex problem solving, resolving social conflict, independent learning, responsibility and flexibility (Ahonen & Kinnunen, 2015; Chakroun, 2017; Geary, 2009; Geisinger, 2016; Gündüz & Akkoyunlu, 2019; OECD, 2016 in World Bank, 2017; Peko & Varga, 2014; Ramoroka & Tsheola, 2016; Taylor, 2014). These are more concisely grouped as higher-order cognitive skills, interpersonal socio-emotional skills and intrapersonal skills (World Bank, 2016 in World Bank, 2017).

As a result, an undeniable demand is placed on educational research to develop practical and implementable classroom pedagogies that promote active learning and create opportunities to develop the skills, as mentioned above. These skills are not only beneficial to learners' lives after school, but also raise their motivation for learning (Ahonen & Kinnunen, 2015). The classroom provides a primary setting where learners can observe how teachers model these skills to grow and practise these themselves (Kim et al., 2019).

The challenge is that much more is known about teaching learners mathematics and languages compared to 21st century skills (Ahonen & Kinnunen, 2015). Another is that education systems that encourages external motivation in the form of assessments, may be counterproductive when encouraging active learning (Jenkins, 2010), which may ultimately oppose an intervention aimed at countering learner passivity. Research by Alexander et al. (2009) also confirms that learning is change and can be resisted, as the change it implies may be somewhat painful, consequently diminishing the motivation to learn a new way of thinking or acting. It may also create dissonance with the dominating system in which it is situated, which may ultimately lead to the rejection thereof.

We should therefore strive to refrain from the view of learning as a product which is reinforced by the dominating structures that permeate outdated education systems. This requires realigning our mindset towards a 'growth mindset' (Niemi, 2002) where learning is not only about the measurable results (grades) and the internalisation or memorisation of bodies of knowledge. It is more specifically about the process during which change take place (Alexander et al., 2009). There is a fine balance between the product and process of learning, and thus far, it seems we are very far from the equilibrium.

2.3.5 LEARNING: AN OVERVIEW

In short, "A learning paradigm is a conceptual model, or worldview, or mindset that represents a way of thinking or understanding of relationships involved in the learning process" (Denzin & Lincoln, 2000 in Kivunja, 2014, p.82). It helps us to understand what learning is as well as the processes it involves. This, in turn, may shed light on and inform us to better understand how learning can be facilitated in order to improve high-quality learning (Kivunja, 2014). It also provides us with a clear focus in our approach to educational theories, and with a lens to navigate the vast scope of research relating to learning. Within this study, the focus is on active learning, which is founded on constructivist as well as socio-constructivist theories of learning. What is important to note, is learning can no longer be considered linearly; it should rather be viewed as a 360 degree process (Little & Knihova, 2014).

2.3.5.1 Definition and Theories of learning

Learning is a complex phenomenon and is defined diversely by various scholars. Illeris (2002) depicted learning in terms of three learning dimensions that are integrated and concur simultaneously. These are the cognitive content-, emotional psychodynamic- and motivational- and social dimensions. Within these dimensions are two processes, that is, an internal acquisition and social interaction process. These are interrelated with the interaction between individuals, the curriculum content and the social environment. Elsewhere, various scholars have captured various aspects of the learning process in their definitions. Learning has been defined in terms of change (Kirschner et al., 2006), the conceptual understanding and flexible use of knowledge (Deci et al., 1991) and growth in learner knowledge (Guerriero, 2017a). These concise definitions highlight the fluid and adjustable nature of learning as well as the importance of interaction for knowledge creation.

Learning is considered a social process as knowledge, skills and values are grown and constructed through constant interaction (Väyrynen, 2003) thereby underscoring the importance of social theories of learning. In short, constructivist and social-constructivist theories of learning form the theoretical foundation of learner-centred education (Dennick, 2012) and consequently, active learning pedagogies. Learner-centred education is predominantly informed by two philosophies namely, the

progressivism of John Dewey and social constructivism of Lev Vygotsky, which are briefly discussed below.

2.3.5.1.1   *John Dewey and progressivism*

Dewey's model emphasised individual learning based on active engagement and empirical problem-solving (Dewey, 1916 in Nykiel-Herbert, 2004). Less focus is placed on the transmission of knowledge and the emphasis shifts towards the construction of meaning and understanding (via the application of knowledge and problem solving). The existing knowledge foundation of each learner and the activities they engage in, form an essential part of this process. Sensory inputs and experiences are filtered through learners' personal knowledge constructs (prior knowledge), which are reorganised, manipulated, analysed and assimilated into their existing conceptual framework. This also leads to the modification and re-aligning of mental frameworks that are no longer meaningful. Constructivist theories explicitly focus on active engagement and mental constructs where learners' existing knowledge is continuously being transformed into higher forms (Dennick, 2012; Mascolo, 2009; Newmann et al., 1996; Reinders, 2010).

2.3.5.1.2   *Lev Vygotsky and social constructivism*

Vygotsky emphasised the importance of social and/or interpersonal interactions between individuals to co-construct knowledge within a socio-cultural context (Dennick, 2012; Kim et al., 2019; Vygotsky, 1997 in Nykiel-Herbert, 2004). Learning become shaped by the context in which it is situated through active engagement with others and social negotiation, thereby highlighting its dependence on social structures (Dumont et al., 2010; Kahn, 2009). Socio-constructivist learning environments foster constructive, collaborative and self-regulated learning experiences (Dumont et al., 2010).

Central to the theory of socio-constructivism is the concept of the 'zone of proximal development'. According to Vygotsky, there is an optimal level that learners function at when working on their own, which can be surpassed when working with an adult or a more accomplished peer. The distance between these two levels is considered an individual's zone of proximal development. Working within this 'zone' is advantageous

as it encourages learning at a higher level (Mascolo, 2009) and contributes to individual development (Pressick-Kilborn et al., 2005). It also provides opportunities for learners to pursue their learning paths creatively as they are able to make decisions whilst receiving input from their peers (Adams, 2014).

2.3.5.1.3 *A more autonomous approach to learning*

Common to both theories of learning is learners' active contribution towards gaining knowledge via exploration, discovery and reflection, rather than passively absorbing information through rote-learning and drilling (Nykiel-Herbert, 2004). One can conclude that active learning makes provision for individual differences and learner autonomy. By implication, autonomy suggests higher levels of freedom, which includes freedom from teacher control and also the constraints of an inflexible curriculum (Little & Dam, 1998). Autonomy varies in terms of its degree and is context-sensitive, therefore learners are bound to receive it differently (Farahani, 2014).

At present there is a definite shift towards pedagogies which aim to develop a higher-level of personal and social competence. One of the factors currently driving this shift is the recognition that these competencies form a foundation for academic behaviour and consequently, more effective learning (Farrington, et al., 2012). The second is, when learners are provided with opportunities to develop a better understanding of themselves, they are enabled to engage in more complex learning activities, and reflect more effectively on their knowledge, beliefs and abilities (Peterson, 2018b). This change in pedagogic focus somewhat eliminates the impediments and limitations of teacher-led education whilst improving the quality of teachers' pedagogic instruction (Dagnew, 2017).

Significant in the discussion on 21st century learning is 21st century teaching. Although these are two unique educational constructs, they form a very strong dichotomous relationship. A shift or change vis-à-vis the one, necessarily implies a change in the other. It is noteworthy to mention that the move towards active learning necessitates a focus on pedagogy as active learning cannot be achieved without teachers re-evaluating and changing their approach to teaching. Increased autonomy positively correlates with deeper levels of cognitive, social-behavioural and emotional

engagement as learners become agents that make a meaningful contribution to the process of knowledge construction (Lombardi et al., 2021).

2.3.6 PEDAGOGY: AN OVERVIEW

> *Pedagogies provide frameworks for the multitude of decisions teachers have to make about how they teach. Innovation in pedagogy, like any kind of innovation, takes existing ideas, tools or practices and brings them together in new ways to solve problems when current practice is not adequately meeting needs* (Peterson, 2018a, p.8)*.*

Improving the quality of learning in any education system requires an in-depth examination and review of existing pedagogic practice. The success of any pedagogic intervention also fundamentally relies on whether it is context specific, as we have learned with the introduction with OBE in South Africa in the late 1990s (World Bank, 2017). Another key aspect is whether teachers are innovative - this characteristic is considered as one of the main drivers when a decision is made to undertake actions to bring about change in education (van der Heijden et al., 2015).

The power and effect of pedagogic interventions should not be underestimated. Research in Africa has shown that pedagogical interventions (a change in instructional strategy) are more effective when it comes to improving learning than all other types of interventions combined (Conn, 2014). The focus (and search) thus continues as to which pedagogic practices, in which contexts and under what conditions most effectively support learning in developing countries (Kivunja, 2014; Westbrook et al., 2013). Although at present learning technology is seen as a driving force of success, Aricò and Lancaster (2018, p.7) hold that "… success is invariably dependent on pedagogy." Even though pedagogy is regarded as a catalyst for educational change, there is yet much to be learnt about the realities of classrooms in low- and middle-income countries (Kim et al., 2019).

2.3.6.1   Definition and fundamental constructs

As mentioned earlier, the term pedagogy embodies a certain sense of reciprocity. It broadly includes three main educative processes: teaching, learning and assessment (Smith & Lowrie, 2002). The nature of pedagogy is complex, which becomes even more evident when one aims to sub-divide it into various constructs. Among these are teaching, learning curricula, individual potential, critical awareness, knowledge and

skills. These, in turn, constantly influence and interact with one another within classroom contexts (Pretorius, 2014).

Due to its complexity, pedagogy has been defined in various ways. In its most rudimentary form, it can be defined as: "…the study and practice of teaching and learning" (Yates, 2009, p.20). A definition by Paniagua and Istance (2018, p.20) affirms the aforementioned, except they also highlight the important connection between theory and practice: "Pedagogies are specific configurations of teaching and learning in interaction. They combine theory and practice, ways of thinking and implementing learning designs". Bernstein's (2000) definition highlights the notion that pedagogy, as an activity, is designed by one individual to enhance learning in another. He considers pedagogy as "… a sustained process whereby somebody(s) acquires new forms or develops existing forms of conduct, knowledge, practice and criteria from somebody(s) or something deemed to be an appropriate provider and evaluator' (in Westbrook et al., 2013, p.7). The definition by Bernstein specifically reflects a strong socio-constructivist learning theory within the process of teaching. Pedagogy has also been defined in terms of classroom management, where it has become synonymous with teacher authority and control (Bhoyrub et al., 2010).

Additionally, Smith and Lowrie (2002) highlight non-cognitive dimensions of pedagogy, which shed light on the subconscious influences of teachers' pedagogic practices. According to them, relationships, the affective domain, teacher and learner morale as well as the personal dimensions of the teaching/learning process form an integral part of the notion of pedagogic practice. A study by Kokkinou and Kyriakides (2022), similarly assert that teacher behaviour influences teachers' pedagogic practices.

2.3.6.2   Teacher traits

Delving into the existing literature, one realises that changing times and new landscapes alter the course and outcomes of pedagogy significantly. The move towards learner-centred pedagogies forms part of a larger whole, where learners are expected to achieve higher levels of educational attainment whilst the traditional role of the teacher is being altered (Anagün, 2018; Bibby, 2009; Paniagua & Istance, 2018). Teachers play a crucial role in whether learning outcomes are realised and whether

educational aims are met. Accordingly, demands are placed on teachers to constantly adapt their pedagogy to meet these evolving and changing needs.

Central to teachers' pedagogic practices are their worldviews, ideas, thoughts, beliefs, attitudes, habits, values, knowledge, their understanding of the curriculum and their own experiences as learners. It is important to recognise these personal dimensions, as they significantly impact teachers' teaching practice as well as how they operate within and/or enact knowledge in the classroom. These dimensions are also constantly being modified, developed and challenged via classroom interactions (Anagün, 2018; Howard, 2003; McWilliam, 2005; Schweisfurth, 2011; Westbrook et al., 2013). What should also be considered is teacher efficacy, as it is considered a primary predictor to whether teachers are open to new ideas and willing to experiment with new difficult-to-manage methods (for example, small group work) (Woolfolk, 2016).

Successful classroom interactions require strong interpersonal skills on the part of the teacher. Because teachers need to be able to work effectively with a variety of learners, they need to recognise each individual and care for their learners. Pedagogy includes a strong inter-personal or social component where teachers can manage relationships reasonably well. This is significant as the teacher-learner relationship plays an important role in the quality of classroom interactions. In addition, teachers need to transfer these skills to help learners develop their social potential (Bibby, 2009; Lingard et al., 2003; Pretorius, 2014).

2.3.6.3 Fostering learner individuality

One of the biggest challenges regarding pedagogy is adapting and differentiating it to accommodate and recognise learners' uniqueness and diversity. There is often a great variability when it comes to the learners in our classes. Learners can differ significantly in, for example, their personalities, memory capacity, prior knowledge, their capacity to process, store and retrieve information, learning preferences, interests, beliefs, readiness for learning, general ability, motivation to learn and also their culture, social class and background (Alexander et al., 2009; Algozzine & Anderson, 2007; Carrol, 1963 in Guerriero, 2017a; Dumont, 2018; Howard, 2003; Reinders, 2010; Väyrynen, 2003). Farrington et al. (2012, p.12) continues by making specific reference to learners' 'academic identity' that is influenced by some of the factors mentioned above (for

example, prior knowledge) as well as previous academic achievement (or a lack thereof), past educational experiences and a pre-existing academic mindset.

Teacher pedagogy should aspire to engage learners in meaningful learning activities, which integrate with their lives beyond the classroom, as these experiences foster deeper learner engagement. This can be achieved when teaching approaches are implemented in such a way that it enables learners' sense of agency and identity (Learning Futures, 2012 in Fullan & Langworthy, 2013). Learners' learning capacity should also be recognised. When learning content is too complex for learners, there is a risk for cognitive overload, and if learning content is too easy and learners are not sufficiently challenged, the result can be limited learning (Dumont, 2018). Consequently, learner diversity and diverse needs place a serious load on teachers to differentiate the way in which curriculum material is presented, how classroom interactions are organised and how content transfer occurs within the classroom.

2.3.6.4   The learning environment

In order to serve today's learner, learning institutions must create open and flexible learning environments (Taylor, 2014) taking into account how to structure the learning environment to meet learners' needs (Anagün, 2018). While teachers do not have power over whether learners choose to learn, they can adapt their pedagogic practices and draw on specialised pedagogical knowledge to create learning environments that are optimal for learning (Guerriero, 2017b; Tokuhama-Espinosa, 2015) and transformative (Margarit, 2021). Teachers also have an enormous responsibility to model pro-social-emotional behaviours and stress-management techniques for their learners (Allee-Herndon & Killingsworth Roberts, 2018).

According to the Organisation for Economic Co-operation and Development's (OECD, 2010) educational agenda guidelines, innovative learning environments will exhibit:

- a focus on learner-centredness with learning as the principal activity;
- a well-designed and structured learning space to provide opportunities for inquiry and autonomous learning and

- the promotion of learner individuality or personalisation to accommodate individual and group differences in background, prior knowledge, motivation and abilities (Dumont et al., 2010).

Apart from these guidelines, various other key factors should also be taken into consideration when aspiring to create a learning friendly classroom. Attention should, for example, be given to the physical outlay of the class, such as the seating arrangements that need to enable group or paired work. Thought should also be given to the emotional dimension. Teachers should question or evaluate whether the classroom atmosphere is sensitive to learner needs, encourages learner participation and promotes a willingness to engage in learning activities (Lingard et al., 2003; Niemi, 2002; O'Sullivan, 2004; Petersen & Gorman, 2014; Westbrook et al., 2013).

Classroom interactions should be encouraged as learners give meaning to the classroom situations in which they participate. When the classroom climate is of such a nature that learner curiosity and inquisitiveness are encouraged, learners' learning capacity is positively influenced. When learners' level of self-confidence rises, more questions are asked, which can then be discussed, refined and contribute to a pursuit of a higher level of inquiry. This ultimately results in learners asking more complex questions, which may eventually lead to deeper learning (Biesta & Miedema, 2002; Claxton, 2007; Hayes, 2015).

Another key factor is recognising the importance of the socio-emotive sphere and thus, by implication, the teacher-learner relationship. Bibby (2009, p.52) states that "…knowing and learning are bound up in the unconscious emotional flows of relationships". She continues by highlighting the influence of classroom relationships and how these may develop or inhibit mental growth processes. Teacher-learner relationships that are formed in the hours spent in classrooms, may subconsciously have a powerfully influence on how learners' interpersonal skills, such as managing their attitudes towards their peers, the values that they regard as significant and ultimately their identities, are shaped and/or constructed (Schweisfurth, 2011). The classroom environment, therefore, plays a key role in the holistic development of learners and should not only be considered as a learning space where knowledge is acquired. It is powerful to the extent that it potentiates whether active learning is safely and successfully implemented.

2.3.6.5   Teacher instructional methods and action strategies

According to the World Bank (2017), teachers are recognised as the most important factor affecting learning in schools and the quality of teachers' instructional practices has been identified as a critical lever for educational change (Kim et al., 2019). Consequently, the expectation and responsibility of teachers are intensified when it comes to creating opportunities for learning. In addition, the demands made on teachers are often far reaching, subsequently blurring the boundaries when constructing the definition of pure pedagogy.

Reference has thus far been made to the intangible and/or emotional dimensions of pedagogy (teacher traits, learner autonomy and learning environment). Pedagogy, however, also largely comprises a physical or visible dimension that includes the utilisation of learning materials, teachers' actions and teachers' strategies to foster learning. According to Westbrook et al. (2013, p.7), "Teaching practices are the specific actions and discourse that take place within a lesson and that physically enact the approach and strategy". This includes everyday pedagogic actions and routines that comprise behaviours and materials such as teacher-spoken discourse (instruction, explanation, talk, questioning), visual representations (using data, whiteboards, textbooks, projectors, pictures, diagrams), setting or providing tasks for learners to engage cognitively (mapping, rehearsing, drawing) and teachers' monitoring activities (feedback, intervention, remediation, peer assessment, formative and summative assessment) (Alexander, 2001 in Westbrook et al., 2013, p.7).

Although we are far from understanding and defining best pedagogic practice, the literature regarding pedagogy also highlights certain fundamental ideas that may serve as guidelines whilst striving towards this outcome. Key features or areas of interest include teachers' ability to:

- be adaptable, especially regarding curriculum delivery and pedagogic practice (McWilliam, 2005);
- introduce new concepts as to build on existing knowledge and to establish cognitive connections (Dennick, 2012);
- differentiate learning and/or learning opportunities (Guerriero, 2017a);

- ensure pedagogical practices have relevance and meaning towards learners' social and cultural realities (Howard, 2003);

- model 21st century skills (Kim et. al, 2019);

- structure and orient learners towards learning goals and outcomes (Guerriero, 2017a); and

- provide support to evaluate and monitor the quality of learning (Guerriero, 2017a).

Within the move towards teaching that develops and enables 21st century skills, teachers are necessarily compelled to invest in continuous self-development. Teachers ought to update their knowledge base and to regularly self-evaluate in order to employ innovative teaching practices and mobilise various sources of knowledge that are in line with modern research-based scientific knowledge and movements (Tokuhama-Espinosa, 2015). Teachers should be cognisant of their implicit responsibility to recognise and identify their individual needs and capacities, if they truly want to shape pedagogical change (Schweisfurth, 2011).

Within this section, it becomes evident that numerous dimensions and factors are constantly at work in the classroom environment and within individuals, which reciprocally frames, shapes and alters pedagogy. The danger remains of teachers' resoluteness and/or unwillingness to adapt to the changing times. Teachers should consequently challenge themselves to reflect and critically evaluate their practice to move to a point where they deliberately 'unlearn' (McWilliam, 2008) outdated pedagogy. This, however, necessitates a move into the uncharted which may lead to uncertainty and a feeling of vulnerability as many teachers are familiar and comfortable with the traditional teacher-led education system and the pedagogic practice that flows from it.

Although pedagogical innovations require "…deep changes in teachers' practices and roles in which they are co-designers", teachers' have the ability to assimilate their own experiences progressively and creatively as 'anchors' for implementation and innovation (Paniagua & Istance, 2018). Through critical evaluation of their worldviews, beliefs and attitudes, and their deliberate actions to (i) promote learner individuality, (ii) create a safe learning space and (iii) realign classroom practice with contemporary education praxis, it may bring teachers closer to creating more progressive and

beneficial learning experiences for their learners. An alternative point of departure is to aim towards aligning pedagogic practice with prevailing theories of cognition and motivation (Herman, 2012).

2.3.7 ROTE LEARNING AND THE TRADITIONAL TEACHER-CENTRED CLASSROOM

> *Innovative cultures do not emerge from teaching and learning environments that are risk-averse, test-driven, teacher-centred, authority-based, and that value rote learning over experimental thinking* (Jansen, 2015, p.9).

The purpose of including this section is by no means to throw the baby out with the bathwater and deprecate rote-learning or teacher-led instruction from its place within the teaching-learning dichotomy and, more generally, the educational literature. Research has shown a delicate and successful balance between teacher-centred or learner-centred approaches (or paradigms) of learning (Horn, 2009; Kane, 2004; Tabulawa, 1997). This section sheds light on learners' learning and educational outcomes where teacher-led instruction or rote-learning methods are the norm. The greatest challenge associated with the traditional classroom where rote-learning is commonplace, is that it can tend to resist change (Gündüz & Akkoyunlu, 2019; Hobbiss et al., 2021). It is also important to note that teachers are more likely to be influenced by their experience of education in the past than they are by new research, which is considered a major barrier to education innovation (Hase, 2014b).

2.3.7.1   An overview

Within a dominant 'transmission culture' (McWilliam, 2008) or the traditional view of education (also known as the traditional transmission-of-knowledge mode), teaching is an act of direct and purposive instruction where the transfer of knowledge is static and delivered as a 'product' to be 'consumed' (Geduld & Sathorar, 2016; Horn, 2009; McWilliam, 2008). According to Bell (2015), it refers to a teaching style that involves 'lower level learning'. Elsewhere it is depicted as "…the conduit metaphor of teaching" where "to teach is to give… and to learn is to take" (Mascolo, 2009, p.6), or the 'one-size-fits-all' approach that is directed at the average learner in class, which remains the norm in schools globally (Ryan & Weinstein, 2009; Westbrook et al., 2013). In the words of Munir et al. (2018, p.25) a teacher-centred approach "…treats all students as the same: they are simply the audience".

In short then, passive learning is when learners receive information while being taught via rote-learning (King, 1993). This usually leads to the internalisation of knowledge through memorisation, which is important as knowledge forms the foundation for problem-solving as well as independent or critical thinking (Kissi et al., 2017; Mascolo, 2009). The problem is that opportunities are not necessarily provided in the classroom or otherwise to develop learners' higher-order cognitive skills, interpersonal socio-emotional skills and intrapersonal skills. Rote learning may consequently lead to superficial coverage of information as learners are not offered multiple and/or a variety of opportunities to process information or to communicate with each other (Beutel, 2006; Newmann et al., 1996). Elsewhere, Repkin (2003) has rendered teacher-centred approaches ineffective as these methods do not heed learners' need for self-development.

Within a teacher-centred classroom, the locus of control lies with the teacher to deliver the curriculum content and learners are dependent on the teacher to gain or access knowledge. Teachers tend to assume primary responsibility for the communication of knowledge to their learners. There tends to be a greater focus on instructional strategies such as higher levels of teacher talk and questions versus learner talk and questions, a higher reliance on textbooks, recall, recitation, memorisation and lectures (used as primary communication), strong lesson framing and/or structure and high levels of extrinsic motivation (Alexander et al., 2009; Beutel, 2006; Claxton, 2018; Cuban, 1983; Holte et al., 2020; Mascolo, 2009; Väyrynen, 2003; Westbrook et al., 2013). In addition, learner engagement is somewhat 'ordered' by direct instruction of the teacher or to pass a test, thus their own enthusiasm, effort and consequently their internal motivation is rarely engaged (Caine & Caine, 2011).

2.3.7.2 Teachers and traditional teaching

Within the traditional teacher-centred classroom, ownership for learning is not shared as the teacher takes full responsibility for initiating learning, transferring knowledge and managing the classroom interactions (Onurkan Aliusta & Özer, 2016). One may argue that they are the only ones exercising agency in the process of meaning construction (Lombardi et al., 2021). To prepare for their lessons, teachers spend much time on planning, developing resources and revising their goals where necessary. Problematic, however, is that because learner activities are based on predesigned and often

inflexible plans, learners imitate the teacher model to receive credit for completion. By implication, learning products are considered evidence of learning which is ultimately a direct copy of the designed outcome of the teacher (Robb, 2016). A teacher-centred approach does not consider the pace of the learner as an individual and as a result, some may grow bored whereas others lag behind. Learners rarely come to class prepared as they do not necessarily know which topic the teacher will cover in class, consequently their prior knowledge is not activated. Feedback is not given to learners as classes are big and often learners only become aware of the gaps in their understanding when writing a summative assessment (Munir et al., 2018).

When moving towards a learner-centred approach, teachers have to overcome various challenges. Often these are situated within their teacher practice, which has become ossified over time (Hobbiss et al., 2021). Research has shown that teachers have become comfortable with traditional pedagogy and some are therefore unwilling to free up their control, as they are too familiar with the comfort and tradition of the teacher-centred approach (Dole et al., 2015; Plaisir, 2020). As a result, teachers are likely to display a sense of reluctance when having to undergo a mind shift in terms of how their new roles are defined and experience a level of discomfort and possibly anxiety or fear that the change from a teacher-centred to a learner-centred class may bring about (Gündüz & Akkoyunlu, 2019).

2.3.7.3 The school climate

The influence of the wider system on teachers' decisions to introduce learner-centred pedagogies cannot be ignored. Evidence has shown that although teacher education is pro learner-centred approaches, when teachers enter a school where they are confronted with an school environment that contradicts what they have learnt, their training in learner-centred education diminishes (Schweisfurth, 2011). Other factors within school settings that influence the learning culture includes centralised curricula, external rewards that drive learning, pressure from peers to conform to traditional teaching methods and a culture that endorses teaching to the test (Barabanova & Kazlauskiene, 2020; Black et al., 2006; Dole et al., 2015; Edwards, 2017; Pellegrino, 2017; Schweisfurth, 2011). On the contrary, when teachers work in environments where principals are autonomy-supportive, it positively affects their motivational properties which ultimately has a positive impact on their 'downstream strategies'

(Ryan & Deci, 2019). Zilka et al. (2022) found that external factors such as peer-learning mechanisms, the organisational culture and a positive discourse have the potential to positively influence teachers' mindsets which then translates into their actions and ultimately the learning culture of the school.

2.3.7.4 The Impact on learners

The in-depth study by Westbrook et al. (2013) rendered teacher-centred pedagogic practices such as these mentioned earlier 'ineffective'. This is affirmed by the substantial amount of research pertaining to the unfavourable outcomes of traditional classrooms. Findings have shown that learners cannot transfer knowledge to novel situations (Mayer, 2002), lack resilience and resourcefulness (Claxton, 2018), struggle to synthesise, analyse and evaluate (Collins & Millard, 2013) display a lack of engagement (Bernstein, 2018; Petersen & Gorman, 2014), knowledge is received and memorised without comprehension (Mascolo, 2009; Nykiel-Herbert, 2004), learner exploration, discovery and innovation are constrained (Bonawitz et al., 2011), learner isolation is maintained, which can potentially diminish the development of communication skills (Beutel, 2006), deeper learning and 21st century skill development becomes the exception rather than the norm (Pellegrino, 2017), all learners work at the same pace which is determined by the teacher, irrespective of individual needs (Dole et al., 2015) and learner individuality is neglected as the teacher gives learners formulas and procedures to follow (Taylor, 2008). Simply put, the cost to individual learning and growth may be innumerable, as passive learning impacts learners' wholly in terms of personal fulfilment and individual development (Aubrey & Riley, 2015).

The move towards learner-centred education is a demanding change because of the profound shift it requires. Learner-centred education necessitate a shift in the teacher-learner power relationship, requires teachers to undergo the necessary training to use active learning methods, and requires teachers to care enough to make the change. In order to drive the change towards a more learner-centred classroom, teachers need to recognise that their teaching approaches have long-term effects which should encourage them to cultivate the skillsets that learners require for 21st century learning (Claxton, 2018; World Bank, 2017; Schweisfurth, 2011). In the words of Tzuo (2007) a learner-centred philosophy is generally presented in opposition to teacher-centred

approaches. At the core, the difference between these two essentially lies in the emphasis that each place on learners' freedom to initiate learning and the nature of the teacher's control over these decisions and/or actions.

2.3.8 THE MOVE TOWARDS ACTIVE LEARNING AND LEARNER-CENTRED CLASSROOMS

Humans generally have a natural predisposition to learn, even though guidance or support are not necessarily provided (Jenkins, 2010). Learners have a natural inclination to play, create, express, collaborate and discover (Paniagua & Istance, 2018). Central to improving learning and learner engagement is the move towards pedagogic methods that match the natural ability of how our learners learn. At present, changing patterns in the education landscape continue to accelerate in gaining momentum towards learner-centred learning, a greater emphasis on heterogeneity and a more holistic approach to learning (Carneiro, 2007). Active learning pedagogy, proposed as empirical research, has shown that it is much more effective than the passive delivery of knowledge and content (Aricò & Lancaster, 2018; Bates et al., 2017).

One may argue that a pedagogic intervention that encourages a greater focus on learner-centred education, specifically in the South African context, may not be welcomingly received by teachers due to our history of implementing Curriculum 2005. Our history confirms that a learner-centred pedagogy can become somewhat detrimental if teachers lack the conceptual knowledge and practical skills to implement it in their classrooms (Nykiel-Herbert, 2004). Horn (2009) suggests alternative reasons for a lack of success when implementing learner-centred principles, such as repeated failure that can be ascribed to wrong methods of implementation, or alternatively that there is a skewed view of learners' natural development.

2.3.8.1 An overview

Active learning is not a new or innovative discourse. Its theoretical foundation and pedagogical rationale for successful implementation dates back many decades within the literature (Reinders, 2010). There is, however, still room to develop a clearer perspective regarding its real pedagogical implications in order to support effective and informed educational practice (Drew & Mackie, 2011). The challenge remains that

contemporary educational practices do not always reflect what is known about active learning (Li et al., 2021).

Prince (2004, p.223) define active learning as "…any instructional method that engages students in the learning process". Although this definition may include traditional activities (for example homework), in day-to-day classroom practice it refers to classroom based activities (Prince, 2004). Michel et al. (2009, p.398) defines it as an "…inclusive term, used to describe several models of instruction that hold learners responsible for their own learning". Elsewhere active learning is defined by Mascolo (2009) in terms of the source of power in the classroom. Although these definitions highlight some of the core constituents of active learning, multiple definitions include the input of the learner (activity and involvement) as well as active knowledge construction (Bernstein, 2018; Mascolo, 2009; Niemi, 2002). Within active learning, the learning process is seen as a bi-directional process (Geduld & Sathorar, 2016).

Certain key features can be identified to distinguish learner-centred classrooms, where active learning prevails. In terms of 21st century skills, research has shown that there is a higher focus on critical thinking, reasoning, problem-solving and reflection and knowledge is integrated with real-life scenarios, evaluated, or co-created by teachers and learners. In addition, building on learners' prior knowledge becomes key to the learning process, learners demonstrate personal control or choice and open-ended questions are more common (DoE, 2002 in Väyrynen, 2003; Garner, 1998; Kane, 2004; McWilliam, 2008; Niemi, 2002; Nykiel-Herbert, 2004; Schuh, 2004). Consequently, one may argue that these learning activities are created to stimulate deeper learning (Narendran et al., 2018; Pellegrino, 2017), which is clearly in line with developing the skillsets that learners need for the 21st century.

2.3.8.2 The learner

Individual learning is influenced by biological, cognitive, experiential (individual and cultural) and affective (motivation and emotion) factors (Alexander et al., 2009) which more specifically includes learners' prior knowledge, values, expectations, mindsets, motivations, rewards, and the self-monitoring of individual learning processes (Newmann et al., 1996; Peterson, 2018b). Within a learner-centred classroom, the ideal is to draw on the individual contribution of learners through creating opportunities

for all learners to actively participate. This may have a significant influence on the outcome of learning as learning may become a much more enriched experience.

As mentioned earlier, the core elements to successfully drive active learning includes learner-activity and engagement (Niemi, 2002; Prince, 2004). Active learning requires a dramatic shift as it makes new demands on learners. It also sheds light on the importance of constructs such as intrinsic motivation and classroom engagement, which are directly associated with academic outcomes (Brüssow & Wilkinson, 2011; Froiland & Worrell, 2016). Within a learner-centred classroom, learners are required to take ownership of, and responsibility for, their learning and progress, actively engage in the self-management of their cognitive processes, develop inquiring skills, challenge their own assumptions whilst weighing others' assumptions, ideas and perspectives and learn to reflect on their own learning (Carneiro, 2007; Chen, 2016; Drew & Mackie, 2011; Kane, 2004; Nelson & Harper, 2006; Niemi, 2002). This is crucial, as new knowledge construction and development of individual potential depends on cognitive activity on the part of the learner (Algozzine & Anderson, 2007; Peko & Varga, 2014).

The success of active learning largely depends on whether learner engagement is activated. This may be an uncomfortable and disorientating transition that requires a higher level of determination on the part of the learner (Nelson & Harper, 2006). It also places a higher demand on learners to engage in higher order thinking such as analysing, categorising, problem solving, reasoning and critical thinking (Chen, 2016). Learners' intrinsic motivation is thus a key contributor as to whether active learning pedagogy reaches its full educational value in the process of learning. The experience of the learner can still be considered unchartered waters as, in the words of Randi (2017, p.2), "…the contribution of the learner to teaching has yet to be explored".

2.3.8.3   The teacher

The move towards learner-centred education places unique demands on teachers. Firstly, teachers are required to make a paradigm shift from teacher-centred to learner-centred (Roehl et al., 2013), which has a direct impact on their teacher identities (Keiler, 2018). By implication, teachers need to realign their idea of how they position themselves and their authority in the classroom, orchestrate classroom interactions and design classroom and/or curricular activities to promote a safe environment where

learners would want to engage in learning activities. These changes in their practice would not be possible if there is not a corresponding change in teachers' knowledge and mindset (Hart, 1983; Révai & Guerriero, 2017; Zilka et al., 2022) as they are used to dominate the classroom (Keiler, 2018) and often constrained by the traditions, expectations and power surrounding their position (Robinson, 1981).

First and foremost, the role of the teacher becomes one of facilitator, co-constructor, guide and helper (Bates et al., 2017; Elliott, 2014; Horn, 2009; McWilliam, 2005; Taylor, 2008). This requires a move away from the teacher as the primary source of knowledge in the classroom (Mascolo, 2009). This is a crucial step, as the effectiveness of active learning strategies depends mostly on how the change in the role of the teacher is understood and embraced (Peko & Varga, 2014). The possibility exists, however, that teachers may feel that their personal identities are being challenged and that they are giving the control to their learners (Beutel, 2006; Elliott, 2014).

Teachers need to recognise the importance of providing their learners with opportunities to think about how they learn and take responsibility for their own learning (Dennick, 2012; Howard-Jones, 2010; Kane, 2004). The focus should shift from merely reproducing knowledge to creating and discovering new knowledge structures (King, 1993). Opportunities should be created "…to dismantle the scaffolding, and build students' disposition to do their own supporting" (Claxton, 2007, pp.123-124), which positively contributes to learner empowerment and increased learner confidence (Bates et al., 2017). Teachers also need to build, develop and help refine learners' communication skills to prevent learners from feeling disengaged or disconnected from classroom interactions or activities.

In terms of curriculum design and delivery, teachers ought to design differentiated tasks that encourage creativity and responsiveness to provide for learner differences and individuality. Learners should be exposed to new knowledge that builds on their existing cognitive structures through the authentic exploration and discussion of real-world scenarios. This is a crucial part of active learning, as it may bring incorrect conceptual understanding to the surface or provide learners with the opportunity to reconstruct, adapt or extend their pre-existing knowledge base. They can also contribute to the process of knowledge creation and thinking through the contribution of their individual beliefs, values and attitudes. This, in turn, provides an opportunity for

them to grow their self-concept. To achieve the latter, teachers ought to develop new forms of knowledge and apply teaching methods that validate these unique experiences that their learners bring to school. Methods such as cooperative learning, experiential learning, inquiry-based learning, project-based or problem-solving are only a few examples to achieve this outcome (Aldridge et al., 2004; Beutel, 2006; Dennick, 2012; DoE, 2002 in Väyrynen, 2003; Geduld & Sathorar, 2016; Howard-Jones, 2010; Kane, 2004; Niemi, 2002; Nykiel-Herbert, 2004; Spreen & Vally, 2010; Taylor, 2008).

Teachers need to create their own awareness of the role of the learner in the teaching and learning process while they empower and support them to adapt within this new fluid and flexible learning environment (Kuchah & Smith, 2011; Taylor, 2014). Teachers may also require a certain level of patience to allow learners to struggle, adjust and change their behaviour and allow learners to work at a pace with which they feel comfortable. Having patience also ensues a value for learner autonomy and an understanding that cognitive engagement, conceptual learning and behavioural change takes practice over time (Reeve & Cheon, 2021). The greatest teacher challenge, however, remains to relinquish a measure of control. Accordingly, teachers should take special care not to revert to older and stronger teacherly habits (Claxton, 2007) as these may ultimately inhibit teacher growth (Hobbiss et al., 2021). In the words of Jansen (2015), teachers have to have the courage to make innovations possible.

2.3.8.4   Advantages

Many empirical studies (qualitative and quantitative) have been performed on the implementation of active learning strategies and whether these truly benefit learners. A meta-analysis conducted by Brüssow and Wilkinson (2011), revealed that active learning is amongst the top three educational approaches to advance learning whilst also ensuring that learners become more effective learners. Research has also revealed many other advantages of active learning in learner-centred classrooms. Active learning has the potential to raise the level of learner autonomy, independent action and self-monitoring, develop learners' self-assessment skills, encourage exploration and enable learners to analyse, compare and construct new knowledge on previous experiences (Aricò & Lancaster, 2018; Farrington, et al., 2012; Hase & Kenyon, 2013; Ledic, 2006 in Peko & Varga, 2014; Mascolo, 2009; Peterson, 2018a).

Active learning also provides opportunities for learners to improve and grow regarding the social elements of learning, such as cooperative action, collaborative problem-solving and sharing. Additionally, it creates room for cross-disciplinary engagement and helps facilitate the access to deeper processes of individual learning (Kloppers & Van Vuuren, 2016; Niemi, 2002; Peko & Varga, 2014; Qualters, 2012; Roehl et al., 2013). Learning is regarded as meaningful since knowledge is not only acquired for the purpose of retention but can also be successfully transferred to solve new problems, understand new concepts and be readily applied to new learning situations (King, 1993; Mayer, 2002; Pellegrino, 2017). Lastly, active learning experiences enable enhanced efficiency when studying, can promote thinking about individual learning (Qualters, 2012) and are considered more enjoyable for both learners and teachers (Bernstein, 2018).

2.3.8.5   Challenges

There is no shortcoming in the educational literature when it comes to barriers or challenges when implementing active learning strategies. Apart from the fact that both teachers and learners have to undergo a mind shift into how their roles are defined, the powerful influence of educational tradition should be accounted for (Frost, 1991; Zilka et al., 2022) as traditional classrooms tend to 'resist change' (Gündüz & Akkoyunlu, 2019; Plaisir, 2020). Within a teacher-centred classroom, teachers are used to controlling what learners think, feel and do, which is often strongly aligned with classroom management strategies (Reeve & Cheon, 2021). Felder and Brent (1996, p.43) have a valid point when they state that the move towards learner-centred education may "…impose steep learning curves on everyone involved".

The shift from a teacher-centred to learner-centred classroom may pose both physical and emotional challenges on learners. Learners may, for example, get distracted whilst engaged in small group activities due to an increase in noise levels (Petersen & Gorman, 2014). Another physical challenge is that collaborative learning runs the risk of turning into socialising or learners going off task (Nykiel-Herbert, 2004). Learners may also have become accustomed to external rewards which, over time, may negatively impact their ability to take responsibility for their own learning (Barabanova & Kazlauskiene, 2020).

On an emotional level, research done by Woods (1994 in Felder & Brent, 1996) found that learners who suddenly have to take responsibility for their own learning initially experience a range of emotional responses such as shock, denial, resistance and withdrawal, which are similar to those associated with trauma and grief. The introduction of active learning may seem a drastic change, especially to learners who are accustomed to teachers telling them everything they need to know from an early age (Felder & Brent, 1996). Many learners may therefore need a great deal of preparation and support before becoming comfortable when assuming greater responsibility for their learning (Reinders, 2010).

Although difficulty in the learning process often has a negative connotation due to the fact that learners have to grapple with difficult and complex issues which require thought and deliberation, they have to proactively engage with difficulty as it is seen as an impetus for deeper more meaningful learning (Boaler, 2019; Nelson & Harper, 2006; Pellegrino, 2017). Learners need to demonstrate a willingness (Claxton, 2007), as dealing with change may be one of the greatest challenges (Qualters, 2012). Even though learners may initially resist change, Felder and Brent (1996) reassuringly state that resistance is a natural part of the journey from dependence to intellectual autonomy.

Similarly, teachers must overcome their unique set of challenges when implementing active learning pedagogies in their classrooms. These challenges similarly exhibit themselves both on a physical and emotional level. Physical constraints that may complicate the move towards active learning include teachers' limited training and the lack of active learning pedagogical experiences, a higher demand on teacher planning and coordination, a lack of resources or materials, large classes and also that active learning is generally more time consuming (Bernstein, 2018; Frost, 1991; Niemi, 2002; Nykiel-Herbert, 2004). Other factors that teachers need to account for is learners' lack of, or weak metacognitive skills, which may lead to the production of work that is considered as intellectually shallow (Newmann et al., 1996; Niemi, 2002).

National, institutional and professional cultures are not necessarily supportive of learner-centred education. These may include deep-rooted perceptions regarding adult-learner relationships and teacher practices that are evaluated against non-learner centred criteria. When reforms are encouraged, examination regimes (such as

High Stakes Testing) often remain intact forcing teachers and learners to prepare for these via rote-learning (Ryan & Deci, 2020; Schweisfurth, 2011). Resistance from fellow teachers and parents' traditional expectations is also not uncommon (Aricò & Lancaster, 2018; Edwards, 2017). Teachers need to demonstrate that active learning pedagogy is grounded in high intellectual standards and that these practices positively correlate with enhanced learner performance (Newmann et al., 1996; Niemi, 2002).

Emotionally teachers who implement active learning are confronted with the risk as to whether it succeeds or not (Bernstein, 2018). Learners may choose not to participate, and teachers may be maligned for teaching in unorthodox ways. Teachers may feel at a loss since they cannot control the level of learners' intrinsic motivation or whether they choose to engage in learning activities (Frost, 1991; Petersen & Gorman, 2014). Little is however known about how to develop self-motivation or a higher level of learner drive (Kivunja, 2014; Reinders, 2010). Teachers may also have to get used to the idea of not being 'centre stage' as active learning positions them more in a side-lined position (Drew & Mackie, 2011).

Time is another factor that greatly influences whether teachers adapt or alter their instructional methods. This was highlighted in a recent study by Haug and Mork (2021). Teachers had a limited amount of time allocated on the weekly timetable which influenced how much time could be spent on a topic. They were concerned as an increase in learner engagement resulted in spending more time on a topic than planned.

2.4   CONCLUSION

> *Families, teachers, administrators, academics, and policy makers are continuously looking for approaches to increase student learning. The tools they use to accomplish this goal include: setting higher standards, developing new curricula, challenging current methods and pedagogies, to quote but a few. While not new, promotion of active learning pedagogies is gaining momentum in the academic literature and policy arenas as a viable solution for increased student achievement* (Hood-Cattaneo, 2017, p.144).

At the beginning of this section, an outline was given regarding the new demands of 21st century learning specifically regarding specialised skills. The researcher contends that the development of 21st century skills cannot be fully reached when teacher pedagogy is centred around traditional teacher-led instruction. A call is made for a

pedagogic intervention to address this shortcoming and/or need within the South African educational context. A shift towards a learner-centred approach that encompasses active learning activities was proposed as the foundation for the pedagogic intervention. This proposition has been justified within this section, as the research has shown that learners who actively engage and take ownership of their learning are better prepared to develop and/or acquire the skills needed to thrive in the 21st century. Teachers should no longer be content only with knowledge transmission; they have to enable their learners to build on their knowledge and create new knowledge, as this is how human societies progress and individuals continuously develop (Young, 2013). In the words of Jansen (2015, p.8), "The future success of the South African classroom lies in…having the courage to make innovations possible".

CHAPTER 3

LITERATURE REVIEW PART 2:

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.1   INTRODUCTION

In the previous chapter, the reader was provided with an in-depth overview of the passive learning phenomenon through the lens of teacher-centred teaching and how, to this day, it permeates teaching and learning in classrooms worldwide. Ideally, educational activities ought to be at the forefront of innovation as learners are being prepared to become fully functional global citizens able to solve problems creatively and thrive in the modern world. Current megatrends in the development of education are driving the move from an industrial society to an information and learning society, which aims to specifically develop an interest in learning in general, lifelong learning as well as one's flexibility to adapt to rapid change (Gejdoš, 2019). From this outset, emanated a method of instruction that is aimed at promoting active learning that flows from learners' ability to learn naturally.

Four decades ago a call was made by Hart (1983) to move from brain-antagonistic instructional methods to ones that are more compatible with how humans learn naturally. This continues in our present day as Tokuhama-Espinosa et al. (2017) once again has prompted researchers to use the evidence of studies on the human brain to influence what happens in classrooms. This chapter builds on the previous chapter as it conveys the conceptual framework of the study by aiming to capture the key factors, theories and concepts as well as the interrelationship among these, termed by Miles et al. (2020) as a network. Via this network, a pedagogic intervention is introduced that theoretically links neuroeducation research, pedagogy (the flipped learning approach) and Self-determination Theory, which eventually extends into heutagogical principles relating to learner agency.

3.2 NEUROEDUCATION

"Teaching and learning are fundamentally neurobiological phenomena" (Owens & Tanner, 2017, p.7). By implication reference is made to inter-disciplinary research as it potentially motivates all significant role players to "…address the brain as the organ for learning" (Hart, 1983, p.xiv). This may encourage an awareness of the need to develop instructional methods that are in line with learners' ability to learn naturally. According to Barabanova and Kazlauskiene (2020), new knowledge has the greatest impact when it occurs at the intersection of various disciplines. These authors also make specific reference to pedagogy and the influence of other scientific disciplines to ground or support it. Coch (2018) highlights the importance of interdisciplinary lenses to understand the dynamics and complexities of adolescents' development across various domains, such as the social, cultural, neural and cognitive. Although an in-depth discussion on the interdisciplinary domains of neuroeducation, cognitive sciences and neuropedagogy fall out of the scope of the study, the researcher provides a brief introduction of the key ideas and trends as well as their relevance to modern day classroom teaching and learning. This overview is rendered significant, as it advocates the potential of the altered flipped pedagogy as an intervention strategy to counter passive learning.

3.2.1 OVERVIEW

Neuroscience sheds light on how the brain acquires, stores and uses information optimally. It also provides an overview of the intrinsic and extrinsic factors that can limit or enhance learners' neurological processes (Vorhauser-Smith, 2011). These insights translate into a better understanding of learning in general, as well as the formation of skills (World Bank, 2017). As per Rueda (2020, p.111), learners can enter an 'optimal learning loop' at a young age when presented with suitable learning opportunities. This once again positively impacts the development of cognitive skills, which are necessary to face future learning challenges. The strength of neuroscience is its potential to provide greater insight about (i) the brain's ability to construct new learning and (ii) its cognitive processing tendencies and how both of these are influenced or altered by contemporary teaching and learning practices (Barabanova & Kazlauskiene, 2020).

The growth of neuroeducation as a research field, was sparked during the late 20th century when the rapid advance in medical technology provided researchers with opportunities to study neural activity (Tolmie, 2015). Consequently, these studies provided researchers with access to the biological processes underlying learners' cognitive development (Allee-Herndon & Killingsworth Roberts, 2018). In the words of Tolmie (2015), a clear definition of educational neuroscience is hard to capture as it involves a range of methodologies and coordinates evidence of many different strands of which neuroscience is only one. The objective, however, remains to acquire a better understanding of the processes involved with learning which can, on a micro-level, translate into pedagogical approaches. Neuroeducation ultimately asks two fundamental questions: *"Can we improve how the brain works through education?* and *Will knowing how the brain works help to enhance teaching and learning?"* (Rueda, 2020, p.110).

3.2.2 THE BRAIN

Learning flows from a neurological and biological foundation in the brain where it connects with humans' inborn reflexes, abilities and capacities. These connections become initiating points for learners' physical, cognitive and social development (Alexander et al., 2009). Owens and Tanner (2017) have argued that the brain should be seen as the birthplace for teaching and learning. The concomitant influence of the education process as a whole on the brain and its development should therefore not be underestimated (Rueda, 2020).

Neuroplasticity (also known as brain plasticity) is receiving great focus within the disciplinary field of neuroeducation. Brain plasticity refers to the brains' ability to change at neuronal level through expansion and regression and adapt to its environment, especially when it comes to novel experiences (Hohnen & Murphy, 2016; Spear, 2013; Tokuhama-Espinosa et al., 2017). Learning consequently occurs at the level of connections between neurons when new connections are formed and the existing internal structures of synapses undergo change (Abiola & Dhindsa, 2012). It should be considered that humans undergo various stages of development, which are seen as interdependent to the forming of neural connections, where simpler networks are followed by more complex ones. The advanced structures are, however, dependent on the strength of the foundational ones (World Bank, 2017).

3.2.3 NEUROPEDAGOGY

Neuropedagogy is considered an interdisciplinary field in the areas neurobiology and pedagogy (Chojak, 2018) with the aim of transferring neurological discoveries to the educational arena (Gejdoš, 2019). It provides teachers as key role players with a firm empirical foundation to support existing pedagogical insights or refute ones that are cumbersome and less effective (Goswami, 2008). The field of neuropedagogy holds great potential for teachers as it may bring about innovative teaching practices and provide more insight into teacher-learner relationships (Friedman et al., 2019). Specific reference should be given to the neurobiological conditions of educational reality, with an analysis of the relationships and dependencies between these. These findings can then be used to transform these realities where necessary (Chojak, 2018). In addition, having more knowledge on the science of learning empowers teachers to develop their own mental models of learning which can be used as a basis for independent and scientifically informed decision-making (Howard-Jones et al., 2020).

From a detailed point of view, teaching and learning, on a cellular level, is considered "…neurological phenomena arising from physical changes in brain cells" (Owens & Tanner, 2017, p.21). It is therefore imperative that teachers take great care and pay attention to detail when it comes to developing curricular resources, creating safe learning spaces and delivering the curriculum optimally so that it is accessible for all their learners. Having knowledge of educational neuroscience empowers teachers to a better understanding of the key areas of learning and provides support when a change in direction is required or when developing and implementing evidence-based pedagogical practices (Dagnew, 2017; Tolmie, 2015). It furthermore provides teachers with the opportunity to solve pedagogical problems more effectively (Sandakova & Tolstobrova, 2019).

3.2.3.1 Instructional methods

As teachers engage with their learners over prolonged periods of time, it is essential that teachers are cognisant of their instructional methods. Having a better understanding of the neurobiology of learning enables teachers to align their pedagogical practices more meaningfully which is, once again, advantageous to their learners. When teachers have a better understanding of the neuroscience of learning

and memory, they may recognise more effective learner-centred pedagogies, thereby enabling learner agency (Schwartz, et al., 2019). Moreover, teachers may have a more nuanced mental framework of, for example, the psychological factors that influence classroom practice (Dubinsky et al., 2019).

Neuroeducational research has revealed some of these advantages. These include the potential of teachers' pedagogical techniques to impact learners' long-term memory formation and retrieval (Owens & Tanner, 2017) and the skill to influence learners' ability to deal with challenges within and outside of the school context (World Bank, 2017). It also relates to knowing how to grow and develop learners' competencies (Pellegrino, 2017) and being able to create learning opportunities which form a more complex and comprehensive neural structure (Goswami, 2008). Of importance is improving understanding of learners' developmental phase and knowing how to optimise instructional methods accordingly (Friedman et al., 2019). Finally, neuroeducational research offers a better understanding of the positive effect on the brain when, for example, the neurotransmitter dopamine is released during the learning activity which contributes to the reinforcement of neural connections and whether learning is embedded in the brain (Vorhauser-Smith, 2011).

In contrast, teachers can prohibit learners from accessing what Hohnen and Murphy (2016, p.80) call the 'learning cycle'. They continue by highlighting two instances within the classroom context. The first occurs when the learner feels stressed or overwhelmed. The second is where the task or activity at hand is without reach of the achievable level of the learner (Hohnen & Murphy, 2016, p.80). Reflective practice as identified by Kim et al. (2019) is considered a powerful method to assist teachers when it comes to improving their practice; however, they may need assistance or support in this regard.

3.2.3.2 The learning environment

Parallel to the above, is the importance of creating a safe environment where learners feel welcomed and encouraged to learn and explore (Blaschke, 2014). According to Goswami (2008), improved knowledge on how the brain learns can improve teachers' know-how on how to create optimal learning environments and identify 'biomarkers' of educational risk. Learning environments should encourage opportunities that support

the development of learners' cognitive, interpersonal, and intrapersonal competencies (Pellegrino, 2017). Although neuroeducation research cannot cover the scope of designing powerful learning environments across all contexts and content areas, it can provide teachers with insight into why some learning areas work better than others (Stern, 2005). Teachers' personal beliefs and values should be taken into account as these two factors are considered key to improving productivity in educational environments (Anagün, 2018).

Foremost, holistic learning recognises that the brain interacts with the entire context in which it is presented, which includes the physical, emotional and cognitive domains (Vorhauser-Smith, 2011). This then has a dominant effect on learners' development and neurobiology (Coch, 2018). According to Abiola and Dhindsa (2012), the brain learns faster in environments that are challenging, accommodating and where learner choice and individual expression are welcomed. Barabanova and Kazlauskiene (2020) focus on the value of feedback in the learning experience. They however caution that the effectiveness of feedback is reduced in classrooms where learners feel threatened, as it reduces flexibility and negatively impacts learners' understanding. In their research, Allee-Herndon and Killingsworth Roberts (2018) highlight the negative impact of the shift to a culture of testing which negatively impacts play and autonomy, especially towards the younger grades. They call for whole-child constructivist classrooms as these support learners to achieve greater academic success and support the development of working memory and cognitive flexibility, all of which benefit learners later in their schooling career.

3.2.4 TEACHERS' NEUROEDUCATIONAL KNOWLEDGE BASE

Educational neuroscience has the potential to fulfil the mandate of public education as it "…incorporates values that reflect the kind of citizen and the kind of society we aspire to create" (Ferrari, 2011, p.1). Stern (2005) highlights its potential to 'inform educational reform'. Teachers ought to be seen as key stakeholders to achieve this outcome. It also highlights the importance of teachers having basic knowledge regarding neuroeducational research that is transferable to the classroom context.

In the early 2000's research in this arena reached a point where certain applications were found to be transferable to mainstream education. Consensus was reached that

neuroscientists and teachers should collaborate to develop and create practical and implementable instructional methods (Howard-Jones, 2010). In 2017, Tokuhama-Espinosa et al. made a call to integrate the latest neuroscience research into pre-service teachers' pedagogical knowledge, as well as in-service teachers' on-going professional development. In this way, teachers could diversify their pedagogical knowledge base and be recognised as experts with the most prominent role when it comes to enabling learning (Howard-Jones et al., 2020). When teachers continually refine their knowledge regarding neuroeducation, they consider more than just content presentation in their practices as more attention is given to individual student needs, scaffolding and providing extended learning opportunities (Dubinsky et al., 2019).

3.2.4.1 Lack of neuroeducation training

Generally, teachers are not likely to be taught about the neurobiology of learning during formal teacher training (Coch, 2018; Owens & Tanner, 2017) and few know how the brain learns, works and changes through the various developmental phases (Dagnew, 2017). The danger is that when teachers do attempt the application of neuroeducational research in their classrooms, they "…may do so in an erroneous manner" (Friedman et al., 2019, p.130). Teachers often understand the value that neuroeducational research can add to education through informing their practice. They are however, dissatisfied by the lack of research specifically aimed at educational audiences as often they consider research relevant, yet hard to implement in everyday contexts (Hardiman et al., 2012). Three questions therefore remain:

> *What are neuroscience areas that are most pertinent to teaching and learning? How can teachers be provided with the relevant neuroscience concepts in an applicable way to initiate new, modern and relevant methods of instruction? How can neuroscience knowhow be translated into the educational sphere in practical terms?* (Friedman et al., 2019, p.123).

A study by Tran, Ho, Mackenzie and Le (2017) found that teachers recognised the importance of developing creativity as a 21st century skill. However, their limited understanding of creativity as a cognitive construct and inadequate pedagogical knowledge to develop it during the learning process ultimately becomes a barrier, which then hinders the teaching thereof. Similarly, Ongesa (2020) found that teachers wanted to infuse a different 21st century skill, that is, critical thinking across their curriculum; however, teachers lacked substantial background knowledge as well as

the skill to assess their learners' critical thinking. Merging neuroscience knowledge into teacher training programmes is not without its challenges. Some of these include, overcoming neuromyths as well as the disconnect that often exists between laboratory findings and classroom practices (Coch, 2018).

3.2.4.2   Enriched learning opportunities

The potential value of neuroeducation research to aid teachers when it comes to enriching learning experiences and to improve the quality of education, is a prevalent topic in the science of learning literature. Mind, brain and education science is seen as "…the most innovative thinking being applied to enhancing teacher quality and student achievement today" (Dagnew, 2017, p.66). It provides insight into the complex process of learning, the brain, mindset, motivation and how to encourage lifelong learning (Jenkins, 2010). Although an in-depth discussion of the former falls out of the scope of this study, reference is made to some of these areas that have received attention to highlight the importance of neuroeducational research in teachers' repertoire.

According to Tokuhama-Espinosa et al. (2017), in-depth knowledge of the neurosciences will significantly enrich teachers' practice and aid them with their pedagogical decision-making. They continue by highlighting the responsibility of teachers to find the best means for their learners to encode new knowledge and acquire essential skills as teachers are regarded as "…the orchestrators of their students' neuronal plasticity during classroom time" (Tokuhama-Espinosa et al. 2017, p.201). This is affirmed by Hohnen and Murphy (2016) who state that information pertaining to brain development and functioning can inform teachers to teach more optimally and maximise learning opportunities in the classroom. Similarly, research by Friedman et al. (2019) highlighted collaborative efforts between teachers and scientists to improve the overall quality of teachers' teaching practices and ultimately, learning outcomes.

When for example, learners are provided with opportunities for novelty and exploration, their experience becomes enriched and results in better learning outcomes (World Bank, 2017). In addition, when teachers understand the developmental phase of the learners with whom they are working, their actions are guided by higher sensitivity, especially during the adolescent years where teens are much more sensitive to socio-

emotional put downs by their teachers (Hohnen & Murphy, 2016; Tokuhama-Espinosa et al., 2017). This knowledge base consequently yields the opportunity for safer learning spaces, as created by knowledgeable teachers. Teachers are also looking at the neuro-sciences to help them obtain a better understanding of individual learner needs and how these can be met effectively to accommodate learner individuality (Dubinsky et al., 2019; Hardiman et al., 2012). Lastly, the research by Barabanova and Kazlauskiene (2020) reveals the effect of stress on the prefrontal cortex and ultimately on the formation of emotions in the amygdala, especially during feedback sessions that do not occur in an emotionally supportive way. Consequently, the important role of teachers to promote brain functioning and development as well as the limitation of a lack thereof, should not be underestimated (Howard-Jones, 2010).

It is therefore indisputable that neuroeducational research provides teachers with insight and evidence to support them when making decisions regarding the actions to be taken or activities which they can implement in their learners' learning experiences to provide more in-depth and meaningful experiences (Howard-Jones et al., 2020). Knowledge regarding the structure and function of the brain, its abilities and limitations, and having an understanding of neuroplasticity, will assist teachers with consistently improving the quality of their teaching as they deepen their pedagogical content knowledge and engage in reflective practice (Kim et al., 2019). This ultimately then translates into the academic achievement of their learners and also a more pleasurable learning environment, as mentioned earlier (Coch, 2018; Friedman et al., 2019).

3.2.5 21ST CENTURY SKILLS AND LEARNING

21st Century skills came into use shortly before the millennium changed and were previously known as core, transferable or generic skills, whereas today, mid-21st century skills are suggested due to the rapid speed society is advancing (Tight, 2021). The importance of skill development for the 21st century should not be underestimated or neglected as it prepares learners for a contemporary life in a complex world that is constantly changing. These skills are advantageous as they specifically focus on higher order thinking skills, communication skills and deeper learning (Saavedra & Opfer, 2012). Anagün (2018) has proposed that 21st century skills should be integrated into the core curriculum as these skills eventually enable learners to become successful, productive and active citizens in their societies.

Carneiro (2007) raised the concern that learners are often ill-equipped with the skills that require self-management over their learning journey. He reiterated the importance of introducing metacognitive competencies from the early stages. This was echoed by the World Bank (2017, p.69) ten years later, when the statement was made that "…skills beget skills". Once again, the importance of laying strong foundations, to develop skills to ultimately avoid learning gaps during the later stages of development, were emphasised.

From the literature, it becomes evident that learners require a wide range of skills to function optimally in the rapidly changing knowledge society in which they are currently living and will continue to experience as adults. This is particularly the case when learners transition to higher education where there is a higher demand on critical thinking skills (Ongesa, 2020). Developing 21st century skills require a sense of deeper learning as learners are required to solve new problems and adapt to novel situations (Pellegrino, 2017). Generally, researchers acknowledge skills such as critical thinking (Kim et al., 2019; Ongesa, 2020), planning, decision making, critical analysis (Hohnen & Murphy, 2016) innovation, problem solving (Pellegrino, 2017), creativity (Hohnen & Murphy, 2016; Howard-Jones, 2010; Pellegrino, 2017), global awareness, communication, meta-cognition (Kim et al., 2019) and the ability to regulate behaviour and emotions effectively (Hohnen & Murphy, 2016).

Research by Pellegrino (2017) has provided a more in-depth analysis of the various cognitive domains with their specific clusters of competencies and related skills. In short, these are:

- Cognitive domain (cognitive processes and strategies; knowledge; creativity) which includes skills such as critical thinking, innovation, reasoning and argumentation
- Intrapersonal domain (intellectual openness; work ethic and conscientiousness; self-regulation) which includes skills such as flexibility, initiative, appreciation for diversity and metacognition
- Interpersonal domain (teamwork and collaboration; leadership) which includes skills such as co-operation and communication, conflict resolution and negotiation

Skill growth and development is not something that will occur circumstantially. Teachers should develop an awareness of features that are consistent with 21st

century skills, such as a learner-centred approach. Learners should also be provided with opportunities to engage in reflective thinking practices to encourage the development of skills (Haug & Mork, 2021). As important, is to train teachers on how to disseminate these 21st century skills to align their classroom practices more effectively to support the development thereof (Kim et al., 2019).

3.2.6 NEUROEDUCATION AND LEARNER-CENTRED LEARNING

Within the previous section, the importance of developing skills was highlighted as these prepare learners for the journey ahead and to function as well-rounded citizens in a rapid changing global world. A more learner-centred approach not only provides opportunities to achieve this outcome (Pellegrino, 2017), it also actively counters the passive learning phenomenon. Dubinsky et al. (2019, p.403) explicitly state that "…understanding the neurobiology of learning and memory may provide the explanation needed to change practices from teacher-centred to learner-centred".

Having basic knowledge of the neuroscience of learning provides teachers with an understanding for why learner-centred learning is effective (Schwartz et al., 2019). The effect of learner-centred pedagogies on learning outcomes within the field of neuroeducation has revealed many benefits especially with regards to the learning experience. What has been found is that learner-centred pedagogies directly impact learners' ability to access their higher-order thinking and activate deeper learning (Dubinsky et al., 2019; Howard-Jones et al., 2020). Learners who were exposed to neuroscience-informed pedagogies display a higher level of achievement compared to their counter-parts who were exposed to traditional teaching methods (Dagnew, 2017). A study by Robb (2016) highlights the potential of individualised learning as learners are able to access their individual neural networks which ultimately results in improved brain activity.

Gejdoš (2019) overtly states that passive teaching methods, such as mechanical learning and memorising, do not contribute to the learning process and the construction of neural networks. These are constructed primarily through the dynamic activity of the learner. Teachers are consequently encouraged to promote activities with higher levels of engagement where learners can experiment and make mistakes (McWilliam, 2008). When teachers allow higher levels of learner agency, neural

networks are expanded through learners' unique classroom interactions, which are linked with individual memories and experiences. This process then ultimately leads to a richer understanding of the subject or topic under study (Schwartz et al., 2019).

Teachers should not only employ methods that encourage the retention of knowledge but rather methods that specifically include the application of knowledge and skills (Pellegrino, 2017). Teachers also have to be cognisant of the fact that their personal neural networks differ from that of their learners. Teachers are consequently encouraged to spend less time on transferring cognitive networks. They should rather shift their focus to increase opportunities for learners to build or alter their existing cognitive networks via exploration, reasoning and critical thinking (Schwartz et al., 2019). As mentioned earlier, it is crucial that learners enter the cycle of learning (Hohnen & Murphy, 2016), that occurs when learners take action and are engaged in the classroom which is crucial for them to learn. This can be achieved by giving learners the opportunity to learn from peers via collaborative meaning-making, considering differing views and opinions, open discussions and conveying their interpretations of the topic under study (Schwartz et al., 2019).

3.2.7 NEUROEDUCATION AND THE FLIPPED CLASSROOM

According to Becker and Birdi (2018), an enhanced appreciation of how learners learn has paved the way for the emergence of the FCP. The model has been recognised for its contribution to the development of learners' cognitive, sensory and social dimensions (Başaran, 2021). A key focus area when implementing a FC, is the activation of prior knowledge, as learners do not enter the learning experience as a clean slate. They use their previous experiences and integrate it with what is happening in class (Hase & Blaschke, 2021). This is vital for deeper learning and acquiring 21st century skills as neural pathways are developed and refined once a link has been established with the learner's existing knowledge base (Pellegrino, 2017). These are built from previous knowledge structures and personal experiences, which then impact how the new mental representation of the received information are shaped (Euler, 2015). Introducing new concepts or content in such a way as to optimise this process, was recognised and viewed as important by teachers who took part in a three-year Neuropedagogy Adaption project (Friedman et al., 2019).

3.2.8 CONCLUSIONARY REMARKS

In the words of Dumont et al. (2010, p.3), "Understanding the fundamentals of how we learn allows us to address more effectively the conditions in which successful learning can occur". Teachers become informed practitioners when their choices are based on evidence gathered from the learning sciences (Tokuhama-Espinosa et al., 2017). This can then assist learners with casting off old habits acquired through an over reliance on traditional teaching methods as they meander through the process of developing and discovering more productive ways of learning (Aubrey & Riley, 2015). Embracing learner-centred pedagogies may ultimately improve the effectiveness of the education process as a whole (Sandakova & Tolstobrova, 2019) and can serve as an effective means to develop learners more holistically.

3.3   THE FLIPPED CLASSROOM PEDAGOGY

The effectiveness of lecturing as a content delivery mechanism has been questioned for some time as it limits the levels of active learner engagement (Becker & Birdi, 2018; Mok, 2014) and causes teachers to treat learners as a homogenous group (Bergmann & Sams, 2013; Horn, 2013; Munir, 2018). Imparting content knowledge that promotes memorisation and understanding of certain concepts is only a part of what education entails (Peterson, 2018b). Researchers and teachers are continuously exploring alternative pedagogies to overcome certain universal challenges of traditional teaching methodologies, such as the extremely slow pace of some learners that force other learners to wait for them (Hoadley, 2012), to the different places in levels of understanding (Bergmann & Sams, 2013) and teaching to the middle of the class (Bergmann & Sams, 2012b).

Within the following section, the FCP is explored in terms of its history, underlying theories, advantages to both teachers and learners and its limitations. This explicates the appropriateness of flipped learning as the rationale for a pedagogic intervention to address passive learning and highlight the gap in the current research regarding the FCP. Furthermore, a rationale is provided for *why* flipped learning must be adapted to suit the public school system in South Africa. Lastly, the researcher also provides an overview of how the FCP could be adapted for a South African high school classroom.

3.3.1 AN OVERVIEW OF THE HISTORY

Some researchers argue that the FCP has been practised for a while as teachers have required their learners to read the content before they come to class in order to engage more deeply with the discussion at hand (Strayer, 2012) or provided opportunities in their classes for learner-centred learning via cooperative or collaborative learning activities (Bates et al., 2017). Moreover, in the year 2000, a study was conducted by Mureen Lage, Glenn Platt and Michael Treglia titled "*Inverting the classroom: A gateway to creating an inclusive learning environment*" where they defined inverting the classroom as: "…events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" (Lage et al., 2000, p.32). The experimental group in their study had to prepare for lectures before coming to class and class-time started with a mini-lecture based on students' questions of the material, which was followed by an experiment or laboratory activity.

In the same year, Wesley Baker presented a paper at the Annual Technology Conference titled: "*The 'Classroom Flip': Using web course management tools to become the guide by the side*". Within his paper, he addressed the change in education primarily being caused by two influences. The first was a change in educational philosophy (driven by the findings of cognitive science and how people learn). The second was the rapid introduction of new educational technologies. He argued that new information technologies presented lecturers with the opportunity to present material to their students before coming to class. This opened up classroom time for learning strategies that emphasised the role of the student (Baker, 2000). One may argue that these two studies were ground-breaking in the FCP research.

In spite of the aforementioned research, two high school chemistry teachers from Woodland Park Colorado (Aaron Sams and Jonathan Bergmann) are considered the pioneers of flipped learning after it was introduced into their classrooms in 2007 (Hamdan et al., 2013). The pedagogy only became popularised in 2012 after the publication of their book *Flip your classroom: Reach every student in every class every day*. The idea to flip their classrooms originated from asking a simple question: "What is the best use of face-to-face time with students?" (Bergmann & Sams, 2012a, p.25). They also concluded that their learners needed them most when they struggled to understand a difficult problem or concept whilst doing homework out of class and did

not have access to their teachers to guide them. This led to the realisation that class time should rather centre around engaging activities and hands-on experiences (Bergmann & Sams, 2012a). Since then, multiple research studies have been conducted on the FCP and extensive research has been conducted across various fields.

3.3.2 A DEFINITION AND THE FOUR PILLARS OF THE FLIPPED LEARNING PEDAGOGY

Within the literature, the FC is referred to as 'a pedagogical approach' (Kloppers & Jansen van Vuuren, 2016), 'classroom model' (Sergis, Sampson & Pelliccione, 2018), 'instructional model' (Jdaitawi, 2019), a 'pedagogical model' (Moffett, 2015), 'teaching model' (Yang, 2014), 'pedagogical framework' (Steen-Utheim & Foldnes, 2018) and 'method of teaching' (Dhambu & Kriek, 2018). Alternatively researchers also refer to it as the 'inverted classroom' (Jdaitawi, 2019; Rotellar & Cain, 2016), 'reverse instruction' (Srivastava, 2014) or 'reverse model' (Findlay-Thompson & Mombourquette, 2014).

In its simplest form, the FC refers to the reversal of traditional content delivery and homework (Eppard & Rochdi, 2017; Herreid & Schiller, 2013; Moffett, 2015; Rotellar & Cain, 2016) where the instructional content is made available for learners to access online (usually via videos) for viewing prior to class (Findlay-Thompson & Mombourquette, 2014; Gündüz & Akkoyunlu, 2019; Kissi et al., 2017). Consequently, classroom time is freed up for hands-on collaborative and cooperative learner-centred activities pertaining to the pre-viewed material where teachers can provide support and guidance (Ash, 2012; Awidi & Paynter, 2019; Findlay-Thompson & Mombourquette, 2014; Kissi et al., 2017; Srivastava, 2014). This account of the FC is in line with Abeysekera and Dawson (2015), who identified common themes from the existing definitions of the FCP. Based on the literature, they concluded that FC definitions generally emphasised three key ideas: (i) information-transmission teaching is moved out of class; (ii) class time is used for active and/or social learning activities and (iii) learners are required to complete pre- and/or post-class activities to fully benefit from in-class work. A definition by Patterson et al. (2018) also highlights the shift in responsibility where learners become more accountable for their learning.

The governing board of the Flipped Learning Network (FLN) has composed a formal definition of flipped learning to counter misconceptions and/or a misrepresentation of the pedagogy. According to them flipped learning is defined as:

> *A pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter* (FLN, 2014, p.2).

They caution that flipped learning and the FC is, however, not interchangeable.

In order to ensure that FL occurs, the FLN has identified 'four pillars' of the FC via the 'F-L-I-P' acronym to provide educators and lectures with guidelines with the process of implementation (Hamdan et al., 2013). In short, these are: flexible environments, learning culture, intentional content and professional educators. *Flexible environments* require teachers to allow for a variety of learning modes. They also need to come to the acceptance that in-class time may somewhat seem noisy and disorganised. Flexibility requires that teachers become adaptable in terms of their expectations of their learners' timelines for learning and individual assessment. It also entails the physical rearrangement of the classroom space. *Learning culture* signifies the move of the teacher from being the sole source of knowledge and information to a more learner-centred approach. Learners are encouraged to engage in meaningful participation as teachers provide them with more in-class opportunities to explore topics in greater depth. They are therefore actively involved in the process of knowledge construction. Learner-centred pedagogies provide opportunities for learners to access their readiness level where they are continually challenged. *Intentional content* provides teachers with guidelines to evaluate what they need to teach directly and what materials can be adapted for learners to explore on their own outside the group learning space. In addition, the content presented via the active in-class activities needs to be differentiated to make it accessible and relevant to all learners. Teachers are regarded as *Professional Educators*, as the FCP is more demanding than traditional teaching. During class time, teachers continually observe their learners as to provide them with relevant feedback. They also regularly subject their teaching practice to reflection in order to continually improve their trade (Başaran, 2021; FLN, 2014; Hamdan et al., 2013).

3.3.3 THEORETICAL FOUNDATION

As mentioned earlier, active learning pedagogies are gaining momentum within educational research (Hood-Cattaneo, 2017) as they are more effective than the passive transfer of content (Aricò & Lancaster, 2018). This was emphasised by Li et al. (2021, p.2) who states that although the design can vary widely, fundamentally "…the structure of learning is flipped upside down, pushing passive learning outside of the classroom while pulling in active learning during the time previously used for lectures". The FCP is rooted in theoretical understandings of active learning (Hung, 2015; Kissi et al., 2017; Li et al., 2021) and allow more classroom time for learner-centred activities (Becker & Birdi, 2018; Day, 2018). It is important to note that the effectiveness of FCP cannot be explained as a didactic method separate and/or independent of models and theories of learning (Eppard & Rochdi, 2017).

The success of the implementation of FCP can be ascribed to the unique combination of learning theories that were once thought to be incompatible (Bishop & Verleger, 2013) and that it allows teachers to teach both content and process (Findlay-Thompson & Mombourquette, 2014; Srivastava, 2014). The traditional FCP aims to minimise lectures or rote-learning (Erbil, 2020). Generally, 'instruction' is moved prior to class to maximise the time teachers spend with their learners and learners with their peers. These classroom interactions provide learners with greater support and opportunities to engage in the learning process when they actively participate in hands-on activities or homework exercises (Hamdan et al., 2013). Learning becomes more personal and dynamic (Munir et al., 2018) as the process of learning is divided into pre-class activities, in-class activities and post-class activities (Abeysekera & Dawson, 2015) which are founded in different yet coinciding educational theories. Pre-class and post-class activities are usually performed separately and by learners themselves, whereas with the in-class activities, learners are surrounded by peers and their teacher.

Although constructivist theories of learning are commonly linked with the FCP (Bishop & Verleger, 2013; Eppard & Rochdi, 2017; Hsieh, 2017; Kenwright et al., 2017), the influence of cognitivist theories cannot be ignored. Learners are required to learn certain bodies of knowledge and foundational facts (Abeysekera & Dawson, 2015) and cognitive theories stress the acquisition of basic knowledge as well as how knowledge

is conceptualised by learners (Ertmer & Newby, 2013). Learners need to be able to access their prior knowledge when they are provided with new information to construct and reconstruct knowledge and to organise novel information within these existing structures. This process of knowledge reconstruction is then translated into their memory (Ertmer & Newby, 2013; Gilboy et al., 2015).

Learners are expected to engage with the pre-class activities as well as the post-class activities on their own. Preparing for in-class activities plays a crucial part in the learning process. Learners are provided with the content (pre-recorded lectures or class notes) prior to class. This then provides them with the opportunity to engage with the new material from their existing knowledge base and consequently, generate relationships between existing and newly found ideas (King, 1993). They then bring their unique knowledge sets and individual understanding of the pre-class content to class. This, in turn, provides them with a foundation to adapt and refine their individual knowledge structures to become more complex when they interact or receive support in class. It also enables them to make their unique contribution to the learning process (in-class activities) as they enable their peers to adapt and/or reconstruct their existing knowledge structures (Hsieh, 2017; Illeris, 2002), therewith increasing the quality of learning.

From a pedagogical point of view, the socio-constructivist theory of learning forms the foundation of in-class activities as learners actively engage in the learning activities (Hsieh, 2017; Steen-Utheim & Foldnes, 2018). Designing suitable in-class activities is central to the success of the FC (Bishop & Verleger, 2013) as it underscores the strength of this particular pedagogy (Little, 2015). A greater demand is placed on teachers to plan carefully and thoroughly for the in-class activities. According to the Vygotskian perspective, learning is optimised via collaboration that occurs within a learner's zone of proximal development (ZPD) as learners are presented with an opportunity and support to solve problems just beyond their individual ability (Eppard & Rochdi, 2017). The in-class activities are founded in learner-centred theories of learning and include, amongst others, peer-assisted learning, problem-based learning, cooperative learning and collaborative learning (Bishop & Verleger, 2013; Reyna, 2015).

Although a distinction is made regarding the different theories that underlie pre-class, post-class and in-class activities, research has shown that these should also be guided by the hierarchy of the cognitive domain of Bloom's Taxonomy (Hung, 2015; Ogbonnaya & Awuah, 2019; Srivastava, 2014). When learners are provided with an opportunity to learn independently, they can access the lower levels of Bloom's Taxonomy, namely, knowledge and comprehension, which is dependent on transmission in order to better prepare them for the in-class learning activities (Bristol, 2014). When they enter the classroom, the in-class activities should be of such a nature that they provide opportunities for assimilation of knowledge via application, evaluation and analysis, that is, the higher levels of Bloom's taxonomy (Eppard & Rochdi, 2017; Srivastava, 2014; Zainuddin & Halili, 2016) as these facilitate opportunities for deeper learning (Bergmann & Sams, 2014).

Within the traditional classroom, time is mostly spent on the lower levels of Bloom's taxonomy as learners often passively listen to lectures (Bergmann & Sams, 2014). Learners are then required to access the higher order levels when they are at home (Zainuddin & Halili, 2016). If learners struggle and do not have the necessary support, their learning process may be thwarted, resulting in only a few who might occasionally reach the higher order levels. Reaching higher order levels are crucial, as these levels (for example application and analysis) facilitates evaluation and creation, which is essential in the move towards autonomous learning (Abeysekera & Dawson, 2015; Eppard & Rochdi, 2017).

3.3.4 THE FLIPPED CLASSROOM: METHOD OF INSTRUCTION

Bergmann and Sams (2014) consider the FCP a bridge from traditional teaching to learning that is more engaged, without sacrificing quality instruction or the value of content. Lubbe (2016) describe it as a powerful tool for learners to learn in innovative ways. The strength and rationale of the FCP is considered for its ability to support the active construction of knowledge thereby enhancing the learning experience (Awidi & Paynter, 2019; Rotellar & Cain, 2016). Learner engagement is positively affected since learners actively participate (Bergmann & Sams, 2013; Herreid & Schiller, 2013; Kenwright et al., 2017; Steen-Utheim & Foldnes, 2018) which in turn, positively contributes to learner empowerment, learner' development and critical thinking (Zainuddin & Halili, 2016). What is also important is the noticeable shift of the

responsibility for learning towards the learner (Kloppers & Jansen van Vuuren, 2016). The FCP is therefore seen as a laudable pedagogy to facilitate learner autonomy (Yang, 2014). These key points highlight the fundamental strength and potential of the FCP to counter learner passivity and encourage learners to take responsibility and ownership of their learning, two of the key concerns that were raised in the introduction of this study.

3.3.4.1 Instructional design

Teachers need to take great care when designing and planning for the implementation of the FC as simply flipping one's class will not automatically improve the quality of learning (Ash, 2012; Luo et al., 2019). The first step to consider, is how to introduce the unfamiliar method to learners who may show initial resistance (Green & Schlairet, 2017). This is followed by the teacher's consideration on how the pre-class, in-class and post-class activities are integrated. These ought to be clearly described, as research is often lacking in this arena (Bishop & Verleger, 2013; Dhambu & Kriek, 2018; Reyna, 2015). Important to note is that one of the most important considerations of effective implementation is teachers' readiness to do the preparatory work (Kazu & Kurtoğlu, 2022).

Special attention should be given to how the FCP is communicated to learners to effectively prepare them (Mitsiou, 2019). Green and Schlairet (2017) suggests that a detailed description of the method, expectations, advantages and challenges of the model should be provided prior to implementation. A model of the FC proposed by Kissi et al. (2017) can be used as a guideline for the instructional design. They divided this process into distinct phases namely: (i) learning material preparation, (ii) decision making, (iii) pre-class activities, (iv) in-class activities and (v) post-class activities. The three instructional design principles of Hsieh (2017) provides a more in-depth view of the first and second phase of Kissi et al. (2017), as described above. Hsieh's three key instructional design principles focus on: (i) establishing clear learning objectives, (ii) choosing and chunking course material and (iii) supporting learning with scaffolding and interaction. This can be evaluated and monitored via a quality assurance plan to ensure that the FCP is implemented effectively (Mitsiou, 2019).

Setting *clear learning objectives* enables learners to understand what they need to know and why the content is important. Consequently, objectives should be shared with learners prior to coming to class as well as when learners embark on the in-class activities. Clear objectives may aid learners with their focus and ensure that they move towards the more complex levels of learning, according to Bloom's Taxonomy. *Chunking* learning content helps learners manage their cognitive load as the teacher carefully breaks down the overall module into discrete lectures and the individual lecture into appropriate learning content and instructional activities. Creating various opportunities for *scaffolding and interaction* is crucial to support learners in the move towards deeper understanding and complex thinking in the learning process. These occur via a variety of in-class activities that deliberately progress towards the higher levels of Bloom's Taxonomy (Hsieh, 2017).

3.3.4.2   Pre-class activities

One challenge when teachers use the lecture method to transfer content, is pacing. Some learners may fall behind as they perceive the pace to be too fast or if they do not have the prior knowledge to understand the content being presented. Others may become bored as the pace is too slow or they might have already mastered the content. After class, homework is usually given to learners to consolidate the newly acquired knowledge; however, many learners fall further behind (Goodwin & Miller, 2013). Lee et al. (2022) however suggest that a need analysis should be conducted to gain an understanding of learners' unique abilities. They argue that due to the autonomous nature of pre-class activities, learners with higher levels of cognitive schema may benefit more from the learning experience whereas learners with lower levels may struggle to access the content and become disengaged.

The FCP is better suited to enable learners to control the pace of their learning (Lee et al., 2022; Little, 2015) as they are provided with the opportunity to access the content (basic facts, concepts, approaches) before coming to class (Dhambu & Kriek, 2018). Usually, resources such as podcasts, screencasts, annotated notes, pre-readings, simulations, case-based presentations, movie-trailers or interactive videos (for example, the Khan Academy repository) (Gilboy et al., 2015; Hung, 2015; O'Flaherty & Phillips, 2015) can be accessed online and learners can make notes as they would normally do during class time (Bell, 2015). As mentioned earlier, these pre-class

activities focus on the two lowest levels of Bloom's Taxonomy (remember and understand) as they introduce learners to the topic/content that is explored in greater depth in class (Gilboy et al., 2015; Hsieh, 2017).

The pre-class activities should be carefully planned and prepared by teachers so that they activate learners' prior knowledge, engage them in the curricula, are appropriate in terms of learners' independent processing capacity and promote creative thinking (Al-Zahrani, 2015; Hsieh, 2017). These activities are meant to prepare and empower learners before entering the classroom as they already have schema upon which to construct new knowledge and contribute to the learning experiences of their peers (Hsieh, 2017; Srivastava, 2014). This was affirmed by Fisher et al. (2020), who found that after engaging with the pre-class activities, learners felt more empowered in their learning, content were regarded as more interesting and there was an improvement in information processing and reading skills.

3.3.4.3   In-class activities

According to Rotellar and Cain (2016), the success of the FCP depends on the interplay between the pre-class and in-class activities thus making it essential that they are well thought through, planned, designed and organised by teachers (Gündüz & Akkoyunlu, 2019; Yang, 2014). The purpose of in-class activities centres around the idea that engagement is considered a prerequisite to successful implementation as active participation help learners construct individual meaning through a deeper process of inquiry and investigation (Lee et al., 2022). Gilboy et al. (2015) suggest that teachers make use of a few carefully selected activities to allow learners to become familiar with active learning strategies and avoid the risk of focusing on mastering a new strategy instead of learning the curricula. Time spent engaged in learning is considered a significant predictor of academic achievement (Fisher, 2009). Class time should maximise the time learners spend on carefully selected and designed in-class assignments or activities.

As referred to in the previous section, in-class activities allow for developing the higher levels of Bloom's Taxonomy (for example, application, analysis and synthesis) (Gilboy et al., 2015). As in-class activities are founded in socio-constructivist theories of learning (Steen-Utheim & Foldnes, 2018), the contributions of peers and the teacher

are regarded as crucial, especially when moving beyond their current zone of proximal development. Teachers should take care that class time is enhanced with active learning methods as it can depart from being an approach that is based on constructivism if in-class activities are not aligned with active learning activities (Erbil, 2020).

In-class activities are advantageous for both teachers and learners. Teachers are provided with the opportunity to instantly resolve misconceptions (Gündüz & Akkoyunlu, 2019), facilitate team work and problem-solving activities (Yang, 2014), provide immediate feedback to learners and provide opportunities for discussion regarding specific areas learners are struggling with (Fulton, 2012). Learners are provided with opportunities to continually evaluate their progress (Gündüz & Akkoyunlu, 2019), broaden their understanding of the topic under discussion (Jdaitawi, 2019), explore topics in greater depth (Little, 2015) deepen their understanding and reduce their cognitive load (Hsieh, 2017).

In-class time is allocated to a variety of interactive cooperative and collaborative activities (Akçayır & Akçayır, 2018; Erbil, 2020; Lombardi et al., 2021; Munir et al., 2018). A key factor that may increase the effectiveness of these activities is if they are autonomy-supportive, which is achieved when learners find them interesting (Reeve & Cheon, 2021). In-class activities are considered far-reaching and include a wide range. These have been developed over time to support the process of knowledge construction (Lombardi et al., 2021). A few examples from FCP studies include think-pair-share, jigsaw, debates, case-studies, mind mapping, problem-based learning, muddiest point, role-plays, discussions, presentations, peer-to-peer instruction, constructive controversy, homework exercises, peer assessment and educational games (Becker & Birdi, 2018; Cheng et al., 2022; Fauzi & Hussain, 2016; Gilboy et al., 2015; Honeycutt, 2016; Hsieh, 2017; King, 1993; Moffett, 2015; O'Flaherty & Phillips, 2015; Owens & Tanner, 2017; Reyna, 2015). Many of these activities can be adapted as formative assessment activities. This will provide teachers with the opportunity to address misconceptions or gaps in learners' knowledge at the onset of a new topic (O'Flaherty & Phillips, 2015).

3.3.4.4 Post-class activities

In 2015, O'Flaherty and Phillips reviewed 28 studies on flipped classrooms. From these studies only one (Gilboy et al., 2014) included post-class activities. Within the vast amount of literature reviewed by the researcher, only three other studies (Reyna, 2015; Rotellar & Cain, 2016 & Wang, 2017) made reference to post-class activities. The lack of literature regarding these activities may be ascribed to the FCP mainly reversing how traditional schooling is organised, that is, lectures in class and homework at home. Where post-class activities were present, these were mainly utilised to provide additional opportunities for application of skills and/or knowledge (Rotellar & Cain, 2016; Wang, 2017). Reflection is considered an effective activity that can be employed by teachers to consolidate what learners have learnt in class. At the same time, learners' reflection provides individual feedback to the teacher (Roehl et al., 2013). Lastly, post-class activities include some form of assessment such as essays, test creation by learners and the analysis of case-studies or presentations (Gilboy et al., 2015).

3.3.4.5 The flipped classroom pedagogy and the teacher

A more learner-centred way of teaching necessitates a change in the professional practice of teachers (Bäcklund & Hugo, 2018) and a move towards new teacher and learner roles (Dole et al., 2015; Fisher et al., 2020; Steen-Utheim & Foldnes, 2018). This consequently institutes a need to prepare for a transition phase. One approach in which teachers can prepare themselves, is to reflect on and/or evaluate their strengths and weaknesses. In this way, they can be proactive by addressing possible individual shortcomings thereby circumventing negative outcomes or experiences (Hsieh, 2017). Teachers are also expected to be more flexible as they cannot always anticipate the questions their learners may bring to class after engaging with the content in the pre-class activities (Demski, 2013). Teacher efficacy is also considered a primary predictor to whether teachers are open to new ideas and willing to experiment with new difficult-to-manage methods (for example, small group work) to meet the needs of their learners (Woolfolk, 2016). Another key characteristic is open-mindedness as teachers are seen as the gatekeepers to open ways to new teaching and learning (Kazu & Kurtoğlu, 2022).

The new role change requires teachers to relinquish a certain amount of control to grant more control to their learners (Dole et al., 2015). In the words of Demski (2013, p.2), "Teachers should step aside and allow students to learn from one another". Lombardi et al. (2021) concurs by stating that learners will remain passive if teachers do not 'take a step back'. Often teachers are of the belief that learners cannot handle this freedom and thus will not stay on task and/or work responsibly. However, the responsibility resides with the teacher to provide learners with opportunities to build and practise these skills. This can be done through carefully planned in-class activities (such as goal-setting), instruments (such as rubrics), choosing or preparing applicable material or other support structures to monitor group or individual progress (Bergmann & Sams, 2014; Kazu & Kurtoğlu, 2022; Strayer, 2012).

Within the classroom, the teacher takes on a facilitating role. This entails supervising, identifying learner needs through careful observation, providing guidance, scaffolding, encouraging learner engagement, maintaining the pace of learning, encouraging self-directed learning and providing feedback where necessary (Bäcklund & Hugo, 2018; Fulton, 2012; Kazu & Kurtoğlu, 2022; Little, 2015; Luo et al., 2019; Mok, 2014; Steen-Utheim & Foldnes, 2018). The interactions between teachers and learners become much more personalised as teachers have the opportunity to provide individualised support (Akçayır & Akçayır, 2018; Nguyen et al., 2016). Teachers should however refrain from using class time to simply re-lecture the content from the pre-class activities (Kloppers & Jansen van Vuuren, 2016; Rotellar & Cain, 2016) or do rote paper work (Bell, 2015) as this undermines the effectiveness of the FCP.

Preparing learners for the transition towards the FCP is essential as they need support to adjust from the passive traditional classroom environment towards a more active learner-centred environment. Learners may also be anxious or hesitant at the offset due to the greater demand on learner input and activity that the FCP requires (Rotellar & Cain, 2016). Teachers can therefore introduce them to the purpose, objectives as well as the potential benefits and challenges of the FCP prior to implementation (Al-Zahrani, 2015; Findlay-Thompson & Mombourquette, 2014; Kenwright et al., 2017; Moffett, 2015) to support them with the transition towards a more learner-centred FCP.

3.3.4.6 The flipped classroom pedagogy and the learner

The change in roles also places a new demand on learners. Initially they have to be willing to adapt to the new pedagogy that is being introduced (Little, 2015). They are also regarded as partners of the learning process (Bristol, 2014) and required to be more self-motivated and self-disciplined (Bernard, 2015; Moffett, 2015). It also raises the standard of learners' work ethic and demands higher levels of self-control (Bell, 2015; Van Wyk, 2023). This, in turn, has a positive effect on the development of learner autonomy (Bernard, 2015).

Surface learning occurs when learners aim to meet the basic task requirements whilst investing minimum effort. Conversely, deep learning is activated when learners are motivated to engage in the more complex in-depth processing of information (Hung, 2015). When learners take ownership of their learning, they also make the content their own (Bristol, 2014; Hamdan et al., 2013; Moffett, 2015; Roehl et al., 2013). Additionally, they have to arrive at class prepared for the in-class activities (Hsieh, 2017; Mok, 2014; Nguyen et al., 2016; Reyneke & Fletcher, 2014) so as to contribute their ideas, opinions and views. Coming prepared to class also enables learners to correct misconceptions and to revisit difficult concepts. Lastly, learners may have a broader and more specialised exposure of the curriculum, which may once again lead to deeper learning (Bishop & Verleger, 2013; Reyneke & Fletcher, 2014).

If learners come to class unprepared their learning may be negatively impacted. Over a prolonged period of time, this may eventually become a barrier to learning (Akçayır & Akçayır, 2018; Bristol, 2014). The literature that has thus far been reviewed by the researcher has not specifically addressed this issue nor proposed viable suggestions to overcome this potential challenge. The researcher therefore pays attention to this challenge later in Chapter 3 (*cf*. 3.5) where heutagogy is discussed in more detail.

3.3.4.7 The advantages of the flipped classroom pedagogy

There is no lack of research regarding the benefits to learning when a FCP is introduced or employed. A review by Akçayır and Akçayır (2018) based on FCP research, revealed that it often leads to improved learning performance. It also has a positive impact on learning as it promotes the individual development, skills, motivation

and engagement of learners across a broad range of abilities (Bergmann & Sams 2012; DeLozier & Rhodes, 2017; Gündüz & Akkoyunlu, 2019; Jdaitawi, 2019; Lubbe, 2016; Munir et al., 2018; Rotellar & Cain, 2016; Van Wyk, 2023; Zainuddin & Halili, 2016). From an affective point of view, learning is regarded as a more enjoyable experience due to increased levels of learner participation and interest in the learning process (Jamaludin & Osman, 2014; Kloppers & Jansen van Vuuren, 2016; Munir et al., 2018; Olakanmi, 2017).

The FCP is advantageous as it provides an opportunity for educators to monitor learners' learning more closely. As a result, they can intervene where necessary and identify specific learner needs. Teachers can use the time in class to check for understanding, detect errors in thinking, identify knowledge gaps and provide individualised support or feedback accordingly (Bergmann & Sams, 2014; Goodwin & Miller, 2013; Hamdan et al., 2013; Munir et al., 2018; O'Flaherty & Phillips, 2015; Srivastava, 2014). It also increases the personal contact between teachers and learners and as a result learning is made more personal compared to the more impersonal whole-class teaching approach (Gojak, 2012; Ivala et al., 2013). Because learning becomes more personalised, learners who tend to withdraw in larger classes feel more comfortable when approaching teachers or asking questions. One possible explanation is that the classroom setting becomes less intimidating thereby contributing to the perception of a safer learning environment (Hung, 2015; Lage et al., 2000; Nguyen et al., 2016; Roehl et al., 2013; Steen-Utheim & Foldnes, 2018).

In terms of the cognitive domain, the FCP is highly effective to strengthen learners' learning processes and move them towards higher order cognitive skills or thinking processes which cannot be achieved through rote memorisation or lecturing (Dhambu & Kriek, 2018; Kloppers & Jansen van Vuuren, 2016; Little, 2015; Logan, 2015). This includes, but is not limited to, problem-solving (Bates et al., 2017; Bernard, 2015; Wang, 2017), creative thinking (Al-Zahrani, 2015; Mitsiou, 2019) critical thinking (Munir et al., 2018; Wang, 2017; Zainuddin & Halili, 2016), communication (Mitsiou, 2019) becoming more aware of individual learning processes (Roehl et al., 2013), teamwork (Mitsiou, 2019) and being able to produce novel ideas that are relevant to real-world problems (Al-Zahrani, 2015). What this highlights, is the importance of FL to equip

learners to not only survive but thrive in an unknown workplace in the future (Fisher et al., 2020).

Underlined by socio-constructivist theories of learning, FCP research tends to encourage the development of socio-emotional and relational skills (Steen-Utheim & Foldnes, 2018). These are specifically acquired through the interaction that occurs when learners are engaged in the in-class activities. As learners interact with their peers from different demographic backgrounds, they may grow in terms of contextual and social awareness as they are exposed to differing opinions or interpretations whilst sharing their thoughts or opinions (Chen, 2016; Pressick-Kilborn et al., 2005). Learners might also be exposed to leadership or mentoring roles as they are provided with the opportunity to instruct their peers (Ivala et al., 2013; Le Roux, 2016). Additionally, small group activities may potentially address distresses that learners experience in whole class teaching such as embarrassment, struggling to think in-depth, or feeling anxious or stressed when called upon to answer higher order questions. Learners may feel more at ease and comfortable to participate in small-group activities especially when they have to engage in higher-order thinking activities (Chen, 2016).

Learners are also provided with opportunities to grow and develop personally in terms of individual traits and skills. Specific examples from the literature include growth in terms of competence as learners recognise their input in the learning process (Lage et al., 2000; Sergis et al., 2018; Steen-Utheim & Foldnes, 2018), adaptability (Little, 2015) social connectedness (Jdaitawi, 2019), communication skills (Cilliers & Pylman, 2019; Olakanmi, 2017) and collaboration skills (Hamdan et al., 2013). Accordingly, developing these traits and skills is beneficial as it positively affects learners' growth and supports them in their move to independence and competency.

Empirical evidence has shown that learner agency promotes academic performance, cognitive development and positively affects learning experiences (Luo et al., 2019). This statement is reiterated by Sergis et al. (2018), who found that the FCP had a significant impact on low performers, supporting them to increase their capacity as to meet the higher learning pace of their classmates. Once again, it is important to highlight that the effectiveness of the FCP largely depends on whether learners take responsibility for and ownership of their learning. When learners do take action, they gain greater control of their learning processes, which then has a positive effect on

future learning endeavours. Teachers and/or researchers who have implemented the FCP, have analogously witnessed an increase in learners' ownership and responsibility toward learning (Gojak, 2012; Gündüz & Akkoyunlu, 2019; Mok, 2014).

3.3.4.8   The challenges and critiques of the flipped classroom pedagogy

Due to its popularity and the vast number of pedagogical advantages, the FCP is viewed by many as superior to other pedagogical methods. As a result, investigations may inadvertently be biased when being compared to the traditional lecture (Bernard, 2015). Within the literature, findings in terms of learner performance were sometimes inconclusive, or there were no grade differences when the FCP was compared to a traditional class (Findlay-Thompson & Mombourquette, 2014; Luo et al., 2019; Patterson et al., 2018). Although many studies also acknowledge the increase in learners' higher order thinking, Rotellar and Cain (2016) raise their concern as to how these skills can accurately be assessed when conducting research within this domain.

One of the greatest challenges when introducing the FCP, is resistance to the change that this pedagogy brings about, specifically in terms of what is expected of teachers and learners (Green & Schlairet, 2017; Gündüz & Akkoyunlu, 2019; Mok, 2014; Munir et al., 2018). Learners come to class with an idea of how a classroom ought to work (Demski, 2013) where knowledge is generally provided by the teacher and thus passively received. By implication, higher-order thinking is not necessarily required (Kenwright et al., 2017). This may prove to be a novel and somewhat challenging scenario to learners who are accustomed to passively receiving knowledge. Conversely, teachers may need support when implementing the FCP as the model will only come into fruition in the long run (Mitsiou, 2019).

It is immensely important that learners are well-prepared when introducing the FCP. If learners are ill-prepared and the learning objectives are unclear, it may lead to learner frustration as the experience is perceived as unstructured and/or time-consuming (Al-Zahrani, 2015; Kenwright et al., 2017; Strayer, 2012). This may ultimately lead to learners opposing the FCP altogether (Rotellar & Cain, 2016). Alternatively, Le Roux (2016) suggests a partial flip as it may ease the acceptance when the FCP is introduced. Once again, this can be overcome if teachers make the necessary mind shift and learners are adequately introduced and prepared for the FCP.

As mentioned earlier, inadequate preparation prior coming to class is another challenge reiterated in the FCP literature. Learners often neglect to do the pre-class learning activities which consequently have repercussions for the success of the in-class activities and learning experience (Abeysekera & Dawson, 2015; Akçayır & Akçayır, 2018; Al-Zahrani, 2015; Gündüz & Akkoyunlu, 2019; Le Roux, 2016; Reyneke & Fletcher, 2014). This has been considered the 'Achilles heel' of the pedagogy as the assumption exists that learners can and will do the work assigned to the pre-class activity, which is often not the case as learners lack confidence or self-organisation skills (Fisher et al., 2020).

Some of the critique that the FCP receives, specifically from teachers' point of view, is a significant increase in the time spent on developing learning materials (Gündüz & Akkoyunlu, 2019; Başaran, 2021; Reyna, 2015) as well as maintaining a high level of creativity when developing new resources for pre- and in-class activities (Honeycutt, 2016). To successfully implement the FCP, teachers should be able to manage their time well and be good at planning and organising (Kazu & Kurtoğlu, 2022).

The shift in the power-relationship in the classroom may also impact teachers significantly as they may feel more exposed. Teachers have to relinquish control in the classroom as learning becomes more spontaneous and autonomous (Le Roux, 2016; Setlhako, 2021). Concerns have also been raised regarding whether learners will stay on task whilst participating in the in-class activities (Mok, 2014; Steen-Utheim & Foldnes, 2018). To help learners focus, Steen-Utheim and Foldnes (2018) suggest that teachers allocate groups at an early stage that work together in class throughout the year. Ultimately, teachers will have to adapt the classroom management styles and may need assistance with acquiring new strategies to effectively guide learners during the in-class activities (Kazu & Kurtoğlu, 2022).

From the learners' point of view, the FCP may bring about unique challenges which teachers will have to tend to with great care. Learners have used descriptors such as "…hard, burden, overwhelming, weight, pushed, pressure, forced to be on your toes, a brick wall…" (Green & Schlairet, 2017, p.125), to describe their experiences with the pedagogy. If not managed well this may have a negative impact on learners' motivation to learn as it may potentially counteract the purpose of originally implementing the pedagogy. In a different study, Fauzi and Hussain (2016) revealed that a mismatch

between the various personalities and learning styles resulted in disengagement and unsatisfactory performance during the collaborative in-class activities. A recent study by Lee et al. (2022) found that learners with a high- and mid-GPA displayed higher levels of engagement during the pre-class and in-class activities. These three studies highlight factors that teachers should consider when preparing for the FCP.

Lastly, the FCP may potentially create a digital divide. Many low-income learners may not have access to a computer or reliable internet at home. If they cannot benefit from the online instruction at home, they already come to class with a disadvantage. Ultimately this may create a greater chasm between high-income and low-income learners (Findlay-Thompson & Mombourquette, 2014; Horn, 2013; Srivastava, 2014).

3.3.4.9   Gap in the flipped classroom pedagogy literature

According to Abeysekera and Dawson (2015, p.2), the FCP is "…under-evaluated, under-theorised and under-researched in general". Specifically in Africa, few research studies have investigated the FCP (Ivala et al., 2013) as teachers in developing countries have not embraced this alternative pedagogy (Kissi et al., 2017). As a result, the researcher identified four areas relating to the gap in FCP research that is addressed by this study. Firstly, there is a shortage of FCP studies at high school level, specifically in the public-school sector; secondly, there is a lack of research in non-STEM disciplines; thirdly there is a gap in research regarding the FCP in developing countries as schools within these countries often have limited technological resources and lastly, there are a limited number of studies on the FCP which have been informed by in-depth qualitative research studies.

These observations emerged from the extensive scope of literature reviewed on the topic. Trends within the research corroborate the notion that studies regarding the FCP are mostly conducted at higher education institutions (Akçayır & Akçayır, 2018; Bäcklund & Hugo, 2018; Cheng et al., 2022) within STEM disciplines, that is, Science, Technology, Engineering, and Mathematics (Eppard & Rochdi, 2017). The field of language education, however, has received little attention (Hung, 2015) and to the knowledge of the researcher, no attention in South Africa.

In terms of research methodology, FCP research tends to favour mixed methodology. In 2016, Zainuddin and Halili conducted a study whereby they analysed the trends and content of the FCP from 2013-2015. From the 20 studies reviewed, 60% employed a mixed methodology and the remaining 40% employed a quantitative methodology. Similarly, Steen-Utheim and Foldnes (2018) as well as Gilboy et al. (2015) comment on the lack of qualitative research. Likewise Akçayır and Akçayır (2018) call for qualitative research regarding the challenges and advantages when a FCP is implemented. The meta-analysis by Cheng et al. (2022) also revealed that most studies on the FCP (40%) focus on whether there is an improvement in learner achievement.

When the Apartheid era ended in 1994, quality education for all was prioritised; however, today high levels of poverty and a vast distance between the rich and the poor still manifests itself in education in complex ways (Graven, 2014). To reduce the inequality in education, the National Norms and Standards for School Funding Policy introduced the quintile system in 1998. Schools were categorised based on the socio-economic status of the community in which they are located. Quintile 1-3 schools are no-fee schools, which are provided with considerable funding while Quintile 4 and 5 schools are affluent schools that receive much less state funding (Mestry & Ndhlovu, 2014; Ogbonnaya & Awuah, 2019). Although the National Development Plan 2030 drives a move toward e-pedagogies, the readiness and appropriateness of these pedagogies need to be examined in terms of infrastructure as well as the culture and skills among teachers and learners (Ramoroka & Tsheola, 2016).

The traditional FCP is highly dependent on whether access to the internet is available and reliable. This may ultimately create a 'digital divide' between learners from higher and lower socio-economic backgrounds and potentially further inequality in education (Bates et al., 2017; Frydenberg, 2012; Srivastava, 2014). A lack of access to the internet may be one of the reasons why the FCP has not been implemented by teachers in developing countries, as they perceive online activities or e-resources as the only alternative for the pre-class activities (Ivala et al., 2013; Kissi et al., 2017). The lack of access to internet connectivity, particularly in South African public schools, is confirmed by the most resent NEIMS report (National Education Infrastructure Management System) that is annually released by the Department of Basic Education

(DBE, 2021). From the 23 276 public schools in the country, only 20,35 % have access to the internet for teaching and learning purposes.

For the purpose of this study, the FCP has been adapted to accommodate learners irrespective of their socio-economic status. Furthermore, the South African schooling system can meanwhile benefit from the educational advantages when introducing an altered FCP, whilst progress is made towards implementing e-pedagogies as stipulated in the National Development Plan 2030.

3.3.5 CONCLUSIONARY REMARKS

In 2019 a call was made by Dormehl in South Africa for policies which emphasise group work and active learning approaches, as it may improve the Annual National Assessments as well as the National Senior Certificate (matric) results. Within this section, the FCP has been advocated as a probable pedagogic intervention to achieve this outcome. It also holds the potential to develop learners' higher order thinking and communication skills and move away from passive learning tendencies. Reference has also been made to the sound theoretical foundation of the FCP, its advantages and limitations as well as the change in teacher and learner roles that it brings about. The gap in the FCP research was identified therewith emphasising the need and urgency of introducing an adapted FCP in high school classrooms.

3.4 THEORETICAL FRAMEWORK

Understanding is in principle incomplete and continues to grow with each interpreter's encounter with new texts or experience. Always, it involves the creation of meaning from the text or experience in the light of the meaning-maker's preconceptions and the tradition of interpretation within which he or she acts (Wallace & Louden, 1997, p.321).

The importance of a theoretical framework can be summarised in the following two definitions, "A theoretical framework underlies all research [and] is the underlying structure, the scaffolding or frame of your study" (Merriam, 2009, p.66). It furthermore "…serves as the foundation upon which research is constructed" (Adom et al., 2018, p.438). The theoretical framework consequently permeates various facets of the study - from the scope of literature review to the methodological design. They also serve, figuratively speaking, as a navigational device in studies concerning complex human behaviour that takes multiple perspectives into account (Evans et al., 2011).

Two key questions that researchers need to ask when deciding on the theoretical framework is simplified as follow: *From which angle should the phenomenon under study be accessed or viewed?* and *How does the selected framework interconnect with the key concepts and research questions within the phenomenon under study?* These two questions query the importance of theory to make sense and better understand the complex abstractions and relationships that serve as the foundation of the phenomenon being investigated (Akintoye, 2015; Connelly, 2014; Lester, 2005), whilst simultaneously recognising the inability of the researcher to disconnect from their 'researcher positionality' (Lin, 2015). Recognising one's own positionality in the qualitative research process is paramount as it becomes the 'lens' through which a particular phenomenon is viewed (Case, 2008) thereby influencing the researcher's point of reference when events are explored, interpreted or explained (Imenda, 2014).

These two questions also compel the researcher to return to the core argument of the thesis. In this study, the aim was to explore the extent to which *An altered flipped learning pedagogy serves as an intervention to address passive learning within the South African public high school context*. The selected theoretical framework needs to coalesce the key concepts under study namely: an active learning pedagogy, neuroeducation and flipped learning to substantiate the rationale for the choice thereof. This is essential when shaping the inquiry as it situates the researcher within scholarly discourse (Ngulube, Mathipa & Gumbo, 2015) and explicates how this particular study makes a unique contribution to the field of research (Cai et al., 2019). The questions also substantiate the interconnectedness between the research questions guiding the research and the framework in which the research is situated. More specifically, structure is provided of focus areas within the study as well as how multiple meanings and/or understanding is revealed throughout the intentional process of making new meaning (Anfara, 2008).

From the reviewed literature, the researcher started to question the lack of learner engagement, curiosity, inquisitiveness, individual drive and autonomy as well as learners' predisposition to memorise content in high school classrooms at the cost of their own learning. Inquiry and reflection have led to theories of motivation and specifically the seminal work by Edward Deci and Richard Ryan (1985), namely *Self-determination Theory* as a probable theoretical framework for this study. Self-

determination Theory is considered a 'macrotheory of human motivation' (Deci & Ryan, 2008). The researcher contends that Self-Determination Theory is well developed and well-suited to illumine various attributes on how to counter the passive learning phenomenon (Johnson & Christensen, 2014).

3.4.1 AN OVERVIEW OF DEFINITIONS

In the words of Anfara (2008, p.8) "The relationship between theory and qualitative research remains complicated". Due to the nature of qualitative research, researchers are allowed the liberty to explore wide-ranging phenomena. Anfara continues by questioning whether qualitative research can be conducted without some theory guiding the researcher towards what is relevant in the natural setting being observed. Thus, the necessity of theory to provide general focus and guidance within one's study is implied.

Importantly, the theoretical framework provides a means to researchers to connect their work to the work of others in the field. Prevailing theory enables researchers to build on the existing foundation and assist researchers when conveying their interpretations of the findings beyond the concrete particulars of their study (Egbert & Sanden, 2014). Framing also allows the researcher some generalisation to other cases via the umbrella of the concepts within that which has been framed (Casanave & Li, 2015).

As mentioned earlier in this section, certain core features of a theoretical framework are reiterated when definitions are examined more closely. Researchers tend to highlight the integrated nature of theory and concepts (Egbert & Sanden, 2014; Rocco & Plakhotnik, 2009) and, broadly speaking, use it as a means to guide research, (Imenda, 2014). The essential relationship between the theoretical framework and phenomena or 'reality' is also highlighted (Anfara, 2008; Chowdhury, 2019).

The theoretical framework is also closely engrained with the methodology employed by the researcher in the study. This includes the study's rationale, an explanation of the problem, research questions, methods, analysis and ultimately the discussion and interpretation of the research findings (Cai et al., 2019; Casanave & Li, 2015; Egbert & Sanden, 2014; Grant & Osanloo, 2014; Wentz, 2013). Importantly, the theoretical

framework provides an insight into the reasoning of the researcher in terms of the decisions made in the study (Cai et al., 2019).

The theoretical framework serves an important function in qualitative research as it purposefully "…moves the research beyond the realm of the descriptive into the sphere of the explanatory" (Ngulube et al., 2015, p.13). Due to the habitually unpredictable nature, and the wide-raging scope when researching phenomena, these frameworks provide direction and impetus to the research inquiry whilst enhancing the rigour of the research (Adom et al., 2018). Theoretical frameworks are more formal as they are situated within an academic repository. They are essential in scholarly research as they make the findings more meaningful, systematic and therefore acceptable (Chowdhury, 2019).

3.4.2 LIMITATIONS

Some researchers have raised concerns when theoretical frameworks are applied to qualitative research. Lester (2005), for one, cautions that frameworks can force researchers to make their data fit their theory or omit important information. Anfara (2008) concurs and cautions that researchers should be mindful of the fact that the theoretical framework focuses the researcher's attention on specific aspects of the phenomenon under study. This may, however, cause certain aspects of the phenomenon to be neglected or concealed. Anfara (2008) also cautions researchers not to overreach the parameters when analysing the data. Certain questions should rather be asked such as whether the research supports, extends or refutes the theory? When these factors are taken into consideration, it demands that theoretical frameworks are "…used with imagination and flexibility" (Anfara, 2008, p.8).

3.4.3 SELF-DETERMINATION THEORY AS A THEORETICAL FRAME FOR THE STUDY

> *People are said to be motivated to the extent that they intend to accomplish something - that is to the extent that they have a purpose* (Deci & Ryan, 1994, p.3)*.*

A theoretical framework is based on contemporary theories and specific features surrounding the researcher's phenomenon of interest (Hughes et al., 2019) and evolves in the process when literature is reviewed (Imenda, 2014). It is also guided by the disciplinary orientation that becomes the 'lens' through which the phenomenon in

the world of the researcher is viewed (Merriam, 2009). As stated earlier, Self-determination Theory (SDT) is proposed as an apposite framework to guide and support the researcher with the process of gaining greater clarity and an in-depth understanding of the passive learning phenomenon. Thus, what follows, is a brief account of the background and history of the origin and theoretical foundations that have contributed to the evolution of SDT. What has also been included is an overview of empirical studies in the field of education and how SDT specifically relates to teachers, learners and educational settings.

3.4.3.1   History and influential work

The seminal work of Edward Deci dates to 1975 and later, Deci and Ryan in 1980 when early explorations of intrinsic motivation provided the basis for SDT to grow and develop. In 1985, the original framework was extended to encompass both intrinsic and extrinsic motivation (Ryan & Deci, 2019). From an organismic dialectical outset, SDT contends that:

> *…humans are active, growth-oriented organisms who are naturally inclined toward integration of their psychic elements into a unified sense of self and integration of themselves into larger social structures* (Deci & Ryan, 2000, p.229)*.*

SDT assumes that individuals naturally predispose their behaviour or actions towards learning, mastery, need cultivation, individual capacity, what they value and their sense of social connectedness (Deci & Ryan, 2000; Legault, 2017; Ryan & Deci, 2020). The fundamental 'nutriments' to obtain the prior were identified as humans' need for competence, autonomy and relatedness. Supporting these needs is considered imperative for optimal functioning, psychological growth and general well-being (Deci & Ryan, 2000; Ryan & Deci, 2020).

The role of social structures is also highlighted as they either support or thwart individuals' natural tendencies towards their active engagement and/or psychological growth. The dialectic between the individual (active organism) and their environment (social structure) therefore becomes the basis for SDT's predictions about individual behaviour, experience and development. Environmental and social factors play an important role and can be framed to facilitate intrinsic motivation, which is considered

the most autonomous form of motivation in the SDT continuum (Deci et al., 1994; Ryan & Deci, 2000; selfdeterminationtheory.org, 2020).

3.4.3.2 Theoretical foundations

From a SDT standpoint, motivation is not seen as a global and undifferentiated concept that is synonymous with effort. It is rather viewed as a multidimensional concept that varies in terms of quality (Guay et al., 2008). Dated theories of motivation were more concerned with the *direction* of the behaviour when it came to goal-achievement and/or to achieve certain outcomes. However, they did not answer the question as to *why* certain behaviours were desired and consequently failed to address the subject on the 'energization of behaviour' (Deci et al., 1991). SDT, for one, addresses this 'direction' as well as the 'energization' issue. It is considered a macro-theory of human motivation, emotion, development and personality that explores the factors that either facilitate or prevent growth-oriented processes in individuals (Legault, 2017; Niemiec & Ryan, 2009).

According to Deci, SDT's vantage point of human nature begins with the notion that:

> *…humans are growth oriented, proactive, and inherently desirous of autonomous, or self-determined, functioning… but that they are also vulnerable to being controlled – to being coerced or seduced by interpersonal or intrapsychic forces* (1992, p.170)*.*

In a definition of SDT by selfdetermination-theory.org (2020) the interplay between systems and agentic properties are highlighted: "The interplay between the extrinsic forces acting on persons and the intrinsic motives and needs inherent in human nature". The definition by Yu and Levesque-Bristol (2020, p.1) highlights individualistic properties where SDT is considered in terms of "…motivation that is congruent with the self or well-integrated within the human organism".

As research progressed, a more in-depth examination of the motivation phenomenon led to the exploration of constructs such as intrinsic motivation (autonomous), various extrinsic sources of motivation (controlled), amotivation and psychological wellness. Studies have also investigated how these aforementioned constructs relate to and influence individuals' social- and cognitive development (Deci & Ryan, 2008; Legault, 2017; Ryan & Deci, 2020; Ryan & Deci, 2019; selfdeterminationtheory.org, 2020). Empirical studies within this field focus on themes such as personality development,

self-regulation, universal psychological needs, life goals and nonconscious processes (Deci & Ryan, 2008).

It is important to note that SDT differentiates itself from other theories of motivation. SDT focuses on *different types* rather than the *amount* of motivation (Deci, 1992; Deci & Ryan, 2008). These types may vary in the extent to which they are self-determined (experienced as being freely chosen) versus controlled (being pressured or controlled by an interpersonal or intrapsychic force). Self-determined and controlled behaviours signify the opposite ends of a continuum when reference is made to the quality of motivated actions (Deci, 1992; Deci & Ryan, 1994). These behaviours are thus provided with inputs from *external* (for example, social and cultural) environments as well as *internal* (for example, drive, emotion) properties (Deci & Ryan, 2000; Ryan & Deci, 2019).

The six interconnected mini-theories of SDT provides a comprehensive overview of the many aspects of human motivation. Each were developed to explain a set of motivationally based phenomena that emerged from both laboratory and field research. They provide answers to essential questions such as the 'who, what, where, when, why and how' of peoples' behaviour and by such, address various facets of human motivational properties (McEown & Oga-Baldwin, 2019; selfdeterminationtheory.org, 2020). When selecting a theory, the researcher takes into account the knowledge base of the phenomenon under investigation and uniquely applies it to the study at hand (Adom et al., 2018). Although an overview of all six mini-theories falls outside the scope of this study, a brief overview is provided of the Basic Psychological Needs Theory, as it is considered most relevant to the study at hand.

3.4.3.3   Basic Psychological Needs Theory (BPNT)

Over the years, six mini-theories have been developed within the SDT framework. When the fourth mini-theory was researched, the focus shifted to internal properties (psychological needs) and how these direct or guide motivational processes. Definitions on these processes intersect at a foundational level as they underline the importance of needs for individual growth, development and emotional activation to drive behaviour. Ryan's (1995) study specifically sought to find a greater understanding of how needs function within their symbiotic relationships. His study also

confirmed the importance of psychological needs to serve as a "…prerequisite for optimum functioning" (Ryan, 1995, p.410).

In short, *needs* are defined as "… the nutriments or conditions that are essential to an entity's growth and integrity" (Ryan, 1995, p.410), "…an energetic resource that propels a variety of motivated behaviours" (Vansteenkiste et al. 2010, p.133) and "…organismic necessities for health" (Deci & Ryan, 2012, p.86). More specifically, psychological needs are considered a subset of these 'necessities'. Deci and Ryan continue by stating that these are essential for psychological growth, integrity and wellness.

Humans' psychological need for autonomy, competence and relatedness is seen as essential to support, foster or thwart humans' psychological well-being and their ability to develop and function at an optimal level before they thrive. These needs were also found to have a significant impact on whether high-quality motivation across all ages, genders, social classes and cultures were enhanced or impeded. They are considered to be central to all six of the mini-theories of SDT (Legault, 2017; Reeve & Lee, 2019; Ryan & Deci, 2019; selfdeterminationtheory.org, 2020; Sheldon et al., 2009; Vansteenkiste et al. 2010).

Studies that investigated Cognitive Evaluation Theory, Organismic Integration Theory and Causality Orientations Theory (the first three mini-theories) found support for autonomy, competence and relatedness (Ryan & Deci, 2019). Consequently, research was directed to the arena of psychological needs. One of the most signifying, was the study conducted by Ryan (1995) in which he re-examined the innate tendencies that underlie human personality and social development. He argued that these processes are not automatic or non-existent, instead they are dynamically interwoven and interdependent upon support within social-contexts.

3.4.3.3.1   *The need for Autonomy*

The need for autonomy can be summarised briefly as the capacity of an individual to experience self-regulation (Deci & Ryan, 2012), which originates from their desire to be casual agents who experience volition (Stroet et al., 2015). Individuals are able to initiate, continue and terminate actions according to their free will (Kutluer et al., 2020).

The definition by Di Domenico and Ryan (2017) features an experience of integrity which transfers to behaviour that is authentic and self-organised rather than externally coerced.

As humans develop and progress through life, they naturally move in the direction of greater autonomy. Consequently, the internalisation and integration of externally motivated behaviours become more visible in the sphere of drive and emotion (Deci & Ryan, 2012). It is, however, important to note that the literature clearly distinguishes between autonomy and independence. Autonomous individuals display a sense of self-responsibility and personal causation whereas with independence, individuals are seen as somewhat socially disengaged and thus non-reliant on others (Sheldon et al., 2009).

Key features are highlighted when the need for autonomy is deconstructed such as taking ownership for one's actions and initiative (Ryan & Deci, 2020; Vansteenkiste et al., 2010), a feeling of volition and/or choice in behaviour (Jeno, 2015; Van den Broeck et al., 2016) the need for self-direction (Legault, 2017), a move toward greater freedom and voice (Deci & Ryan, 2012) or the need to self-organise experience and self-regulate behaviours (Yu & Levesque-Bristol, 2020), has been identified. These are some of the features that supplement the bifurcation of the psychological need for autonomy. They originate from the self and are in line with an individual's values and interests (Vansteenkiste et al., 2010). In contrast, affective experiences such as being controlled, coerced or constrained, have a negative impact on autonomous motivation (Legault, 2017).

3.4.3.3.2   *The need for Competence*

Competency is generally defined in terms of one's ability to achieve a variety of outcomes (both internally and externally) (Deci et al., 1991). Although definitions exemplify various characteristics of the construct, most acknowledge *efficacy* as fundamental to ascertain the need for competence. From the literature, competency is seen as feeling masterful of one's actions (Di Domenico & Ryan, 2017; Legault, 2017; Ryan & Deci, 2020), feeling efficacious in the interaction with one's environment (Jeno, 2015; Yu & Levesque-Bristol, 2020), seeking out optimal challenge and developing

one's capacities (Di Domenico & Ryan, 2017; Legault, 2017) and the drive to potentially succeed and grow (Ryan & Deci, 2020).

A study by Yu and Levesque-Bristol (2020) furthered the importance of the psychological need for competence, as it found that competence has a dominant effect on self-determined motivation. It is thus given precedence to the conditions under which it can be strengthened. Some of these conditions include optimal challenge, positive feedback and creating growth opportunities (Ryan & Deci, 2020).

3.4.3.3.3 *The need for Relatedness*

The need for relatedness is defined by Vansteenkiste et al. (2010, p.120) as "…the need to experience mutual care and concern for close others." Elsewhere, reference is made to the development and maintenance of close personal relationships, feeling a sense of connection and belonging to a group (Kutluer & Mentiş Köksoy, 2020; Niemiec & Ryan, 2009; selfdeterminationtheory.org, 2020). This relative 'closeness' or 'connectedness' provides a secure foundation for individuals to behave competently as well as autonomously. A sense of belongingness ensures that the transfer of group knowledge occurs more effectively. Relative closeness to significant socialising agents (for example, parents, teachers, friends) will furthermore assist individuals when it comes to adopting norms, guidelines, practices and values (Niemiec & Ryan, 2009; Vansteenkiste et al., 2010).

When the need for relatedness is met, individuals benefit largely as it may assist and support them to be more willing to invest their energy in intrinsically motivated behaviours that ultimately contribute to individual growth and well-being (Deci & Ryan, 2000). It is important to note, however, that interpersonal support and a sense of respect and caring for the other, has to be conveyed to facilitate the sense of belonging (Ryan & Deci, 2020; Vansteenkiste et al., 2010).

3.4.3.3.4 *The influence of the social context*

The idea that social contexts play an essential role in whether the universal needs for autonomy, relatedness and competence are met (generally and within relationships), is widely recognised in research (Deci, 1992; Deci et al., 1994; Deci et al., 1991; Legault, 2017; selfdeterminationtheory.org, 2020; Vansteenkiste et al., 2010).

Research by Ryan (1995) furthers the aforementioned statement by shedding light on the direct link between the intensity of individuals' strength of integrative propensities and the level to which psychological needs are met in diverse contexts. Social contexts that foster need satisfaction provide opportunities for promoting high-quality performance, intrinsic motivation and positive life outcomes. These in turn positively reinforce self-determined behaviours (Deci, 1992; Legault, 2017). Additionally, it provides insight into the social forces and interpersonal environments that directly influence the extent to which motivation is considered controlled or autonomous (Deci & Ryan, 2008).

One does, however, have to take into account that although individuals may display similarities when behaving within certain contexts, they may differ in the level or extent to which their needs for autonomy, competence and relatedness are met. They may also vary in their orientations of motivation, that is, the underlying attitudes and goals that bring about action. These differences can be ascribed to past experiences which have impacted or affected learners' affective and cognitive development. This provides greater insight into the complex nature of Basic Psychological Needs Theory (BPNT) as different contexts affect individuals to different degrees (Deci, 1992; Ryan & Deci, 2000).

3.4.3.3.5 *The advantages of need support within BPNT*

BPNT theory suggests that when a learner's need for autonomy, relatedness and competence is satisfied, they tend to display higher levels of growth, integrity and overall wellness. These three needs are viewed as organismic and are considered to be cross-cultural and cross-developmental (Jang et al., 2009). From the outset, basic psychological needs within SDT focus on need satisfaction rather than need strength. Herewith opportunities are created for manifold compilations (context depending) of these needs as individuals differ in terms of their capacity when it comes to satisfying their psychological needs (Van den Broeck et al., 2016).

Yu and Levesque-Bristol (2020), established that need support may occur in many instances. Autonomy-supportive teachers may, for example, provide learners with choices, provide the rationale to make activities relevant to their learning experience or consider their perspectives within classroom interactions. These actions naturally

translate from need-supportive social contexts. Within these contexts, autonomy support, involvement and structure are identified as key features to satisfy the basic psychological need for autonomy. Yu and Levesque-Bristol's (2020) research revealed that when this need is addressed, learners display self-determined behaviour that leads to a variety of positive outcomes, such as higher quality and more frequent engagement, general well-being, increased performance and a sense of stronger identity.

Within the BPNT literature, there is a collective notion on the positive outcomes when the need for autonomy, competence and relatedness are met. Van den Broeck et al. (2016, p.1215) argue: "The very definition of basic psychological needs in SDT requires that each need incrementally predict psychological growth, internalization, and well-being". Within a more comprehensive range, some of these outcomes include fostering the highest forms of motivation and engagement, persistence and creativity (selfdeterminationtheory.org, 2020; Vansteenkiste et al., 2010), promoting self-initiation, productivity and cooperation (Vansteenkiste et al., 2010) and being able to consolidate social values and transform them into personal values that guide self-regulatory behaviours (Hu & Zhang, 2017).

3.4.3.3.6   *Need neglect within BPNT*

On the contrary, when psychological needs are neglected, individuals may experience a detrimental effect on their autonomous motivation and/or their level of self-determination. In a broader sense, research has shown that, when needs are thwarted, motivation and well-being are negatively impacted and the natural development process of individuals may be impaired (Deci et al., 1991; Hu & Zhang, 2017; Legault, 2017; Ryan & Deci, 2019; selfdeterminationtheory.org, 2020).

The negative impact of need neglect is not limited to the above. More studies have recognised the disadvantageous consequences on motivation when psychological needs are not met. A brief overview of these include replacing need satisfaction for a more egocentric pursuit of self-worth (Vansteenkiste et al., 2010), experiencing pressure and/or internal conflict when the need for autonomy is neglected (Yu & Levesque-Bristol, 2020), experiencing feelings of failure (Yu & Levesque-Bristol, 2020), doubting one's efficacy when the need for competence is unsatisfied (Yu &

Levesque-Bristol, 2020), less creativity when the need for autonomy is unmet (Deci & Ryan, 2000), lower-quality performance (Ryan & Deci, 2020) and poorer problem-solving when the need for autonomy is thwarted (via rewards and threats) (Deci & Ryan, 2000).

The imperative role of the social context is once again recognised. According to Ryan (1995, p.399), social contexts that are void of psychological need support tend to "…promote fragmentation and alienation…". If, for example, a social context is excessively controlling, overchallenging or rejecting, individuals may diverge to behaviours that are self-protected. This may result in undesirable actions such as psychological withdrawal, antisocial activity or a greater focus on oneself (Deci & Ryan, 2000). Individuals also tend to adopt extrinsic goals to validate their self-worth which negatively impacts their pursuit of need satisfaction (Deci & Ryan, 2008).

3.4.4 SELF-DETERMINATION THEORY RESEARCH IN THE FIELD OF EDUCATION

In 2018, Ng made a call to "…nurture the young generation in becoming adaptive, self-regulated and self-determined" (p.1). From a pragmatic point of view, SDT should be able to drive pedagogical practice that support learners' autonomy and intrinsic motivation whilst nurturing the development of their need for competence and relatedness (Kutluer & Mentiş Köksoy, 2020). Learners are regarded as active participants in this process, as they have "…inherent and deeply evolved propensities to assimilate knowledge and develop new skills" (Ryan & Weinstein, 2009, p.225).

SDT has gained prominence in the field of educational research and the sphere of educational psychology and various empirical studies (referred to within this section), has highlighted the suitability of the theory when investigating learner motivation, active classroom interaction and performance (Yu & Levesque-Bristol, 2020). There are two primary hypotheses that can be traced within the SDT research sphere. The first is that more autonomous forms of motivation will lead to an increase in learner engagement, learning and wellness, the second is that need support facilitates autonomous motivation whilst the opposite occurs if need support is neglected. These two hypotheses have been well-substantiated at different levels of development and across various learning contents and contexts (Ryan & Deci, 2020).

Ryan and Deci (2020) continue by stating that one of the primary global challenges is that many educational policies and practices remain fixed in traditional models of schooling. A few examples include High Stakes Testing, the use of grades, rewards and external pressures that often contribute to more controlling styles of teaching, whilst diminishing the focus on best practice. These also fail to support learners' psychological need satisfaction. This consequently allows for less pluralism in education (Ryan & Weinstein, 2009). Ryan and Deci (2020) have consequently called for closure in the gap between knowledge and policy and once again, highlight the importance and relevance of the SDT framework in educational research. Their reasoning includes a better understanding of supporting the inherent propensities of learning as well as the rich educational outcomes these may yield such as wellness and thriving across different age groups and cultures.

3.4.4.1   Teachers, learners, pedagogy and SDT

Within the context of this study, SDT is proposed as a framework to view whether a pedagogic intervention, that allows learners to be more autonomous, can ultimately activate their motivation and increase their active engagement in individual learning processes. As this intervention is implemented in a high school context, it is important to recognise the significance of the developmental phase. Adolescence is seen as a critical timeframe to develop self-determination as learners within this phase are growing in their identity and independence (Field et al., 1997). At present, this is however novel terrain as there is currently limited knowledge about how self-determined learners engage in the process of creating their own learning paths (Agonács & Matos, 2019). Research, however, has shown the potential of the FCP to address learners' need for competence, autonomy and relatedness in the high school classroom (Muir, 2021).

Teacher support, however, cannot be underestimated when aiming to achieve this outcome. Autonomy-supportive techniques, scaffolding to increase competence as well as individualised feedback, becomes fundamental within this process (Ryan & Deci, 2019). In addition, knowledge regarding SDT (with specific reference to basic psychological needs) enables teachers to formulate appropriate- or adapt their existing interaction styles, organisational structures and educational practice to meet learners' needs, interests and preferences (Adi Badiozaman et al., 2020; Vansteenkiste et al.,

2010). Providing need-supportive classroom strategies is, however, often challenging as teachers have to overcome constraints in terms of time, resources and curricula (Ryan & Deci, 2020). Moreover teachers may have to come to terms with the fact that learners may view some subjects or classes as futile (Jeno, 2015).

3.4.4.1.1 *Teaching practice: Support for Autonomy*

The direct impact of autonomy-supportive teaching has been widely researched (Adi Badiozaman et al., 2020; Cheon & Reeve, 2015; Niemiec & Ryan, 2009; Ryan & Deci, 2020; Stroet et al., 2015; Turner, 2019). From the literature reviewed by the researcher, autonomy is seemingly the psychological need that to date, receives the most attention. Research on the support for autonomy generally substantiates the notion that teachers with a controlling motivating style negatively impact learners' autonomous motivation whilst the opposite holds true when teachers employ pedagogical practices that are autonomy-supportive (Cheon & Reeve, 2015).

A variety of autonomy-supportive practices exist which can be readily applied. It becomes evident that teachers are mainly responsible for supporting learners' growth when it comes to autonomy, which can be divided into two categories. The first focuses on autonomy support that is driven mainly by teachers' pedagogical practice. Within the second category, the focus shifts to provide autonomy support that caters for learner individuality and unique learner needs. Within this category, learners' input also requires teachers to be flexible.

The list of actions teachers can take to support autonomy is quite extensive. These pertain to various areas and have been grouped in three categories, namely, teacher pedagogy, skill development and classroom atmosphere. Teachers can adapt their pedagogy to provide learners with opportunities to make choices and pursue individual interests (Adi Badiozaman et al., 2020; Jeno, 2015; Kutluer & Mentiş Köksoy, 2020), create opportunities to take ownership of schoolwork, homework and learning experiences (Ryan & Deci, 2020; Turner, 2019), incorporate a sense of challenge into the lesson (Stroet et al., 2015), provide as much choice as possible (Sheldon et al., 2009), provide meaningful rationales for content, teacher actions or classroom activities (Cheon & Reeve, 2015; Stroet et al., 2015), give an overview of the educational value of activities (Holte et al., 2020) and design scaffolded assessments

(Narendran et al., 2018). In order to develop autonomy related skills, teachers can encourage reflection on learning (Kutluer & Mentiş Köksoy, 2020), teach learners to develop their own learning strategies followed by opportunities to implement these (Hu & Zhang, 2017). Attention should be given to a classroom atmosphere that supports learner autonomy such as reducing the pressure surrounding assessments and/or minimising any form of coercion in the classroom (Niemiec & Ryan, 2009), attempting to understand and acknowledge learners' perspectives (Ryan & Deci, 2020), providing structure (Guay et al., 2008) and minimising excessive controlling behaviour (Deci et al., 1991).

Bearing learner diversity in mind, teachers can welcome learners' contributions (thoughts, feelings, suggestions, complaints) and accommodate different needs when planning and developing assessments and resources (Cheon & Reeve, 2015; Field et al., 1997; Herman, 2012; Stroet et al., 2015; Turner, 2019). Teachers can also allow for instantaneous change in direction during a lesson by taking into consideration learners' ideas and/or input (Turner, 2019), incorporating learners' curiosity into the lesson (Stroet et al., 2015) and taking into account the learner's frame of reference (Deci et al., 1991).

When learner autonomy is supported, a scaffold is provided for learners to internalise autonomous motivation. This contributes to a stronger sense of agency and potentially greater ownership of learning on behalf of the learner (Sheldon et al., 2009).

3.4.4.1.2   *Teaching practice: Support for Relatedness*

Research findings by Wang et al., (2019) delivered an unanticipated result, in that, relatedness was found to be the strongest contributor to autonomous motivation. Consequently, peer learning and the affective domain (teacher emotions and characteristics) may have a more profound influence on autonomous motivation than previously recognised. Taking, for example, into account the social reorientation especially during adolescence, peer related activities are likely to be more effective (Hohnen & Murphy, 2016).

In their study, Stroet et al. (2015) identified three areas that can be considered as supportive of the need to support relatedness. These are (i) affection (showing warmth,

fostering a sense of connectedness, treating learners fairly), (ii) 'attunement' (displaying a sense of understanding of the things that are important to learners, being available to all learners in class), and (iii) dependability (being available to offer support, showing commitment to learners' learning). Turner (2019) found that the need for relatedness was supported when learners interacted with their peers in 'authentic caring relationships'. From the same study, the results indicated increased social interactions between peers as well as a sense of connectedness and higher levels of tolerance.

The need for relatedness can be fostered in classroom contexts via various means. Teachers can, for example, provide learners with opportunities to experience a sense of belonging (Adi Badiozaman et al., 2020), create opportunities for small group learning (Narendran et al., 2018), demonstrate affection and be responsive to emotional distress (Stroet et al., 2015), provide opportunities for group assessments and peer learning (Narendran et al., 2018), show respect towards learners and value their individuality (Niemiec & Ryan, 2009) and encourage and support learners' learning (Adi Badiozaman et al., 2020).

When teachers aim to satisfy learners' need for relatedness, it positively relates to the interpersonal relationships that they build with their peers. Within peer-to-peer interactions, learners are provided with opportunities to grow in their communication skills, tolerance for diversity, ability to take the lead and coach one another (Turner, 2019). More significantly, learners also get to see and value the strength of their peers (Herman, 2012), which may contribute to enriched learning experiences.

3.4.4.1.3   *Teaching practice: Support for Competence*

According to Ryan and Deci (2020), learners whose need for competence has continuously been thwarted may become completely amotivated. This directly contrasts with learners' ability to experience mastery and take responsibility to drive their own learning initiatives (Turner, 2019). Fostering the psychological need for competence is crucial, as learners need to experience a sense of 'enabledness' to initiate and sustain personalised learning activities.

A variety of practices to support the development and/or facilitation of learners' competency can be found in empirical studies on SDT. Some examples include providing learners with choices (Herman, 2012) or opportunities to seek out challenges (Turner, 2019), and regular feedback that is constructive and non-comparative (Narendran et al., 2018; Stroet et al., 2015). Examples of competency enhancing teacher practices also includes making allowances for learners to learn via trial and error, thus allowing for mistakes (Turner, 2019), communicating clear and consistent instructions and expectations (Stroet et al., 2015), being cognisant of how tasks are introduced (Niemiec & Ryan, 2009) and being willing as well as enthusiastic when answering learner questions (Stroet et al., 2015). Key to competence development, however, are experiences of effectance, mastery and making individual progress (Reeve & Lee, 2019).

3.4.4.2   Educational settings and psychological need support

Within the section above (teachers, learners, pedagogy and SDT), the focus was mainly on *how* teachers can align their practice and/or actions to satisfy or support learner autonomy, competence and relatedness within the microsystem of the classroom. In educational environments where this persists, learners benefit greatly in terms of their level of motivation, quality of learning, become more persistent when faced with difficulty and demonstrate higher levels of creative thinking (Turner, 2019). Research by Holte et al. (2020) confirmed that situational factors have a significant influence on motivation and that they could not determine whether active learning alone increases learners' self-determination.

Scholars are in agreement that the learning climate or social context has a significant impact on learners' motivation, engagement and learning gains (Adi Badiozaman et al., 2020; Jeno, 2015; Reeve, 2012; Yu & Levesque-Bristol, 2020). When learning climates are favourable, learners benefit greatly as these environments facilitate various aspects of their cognitive, social and personal development (Ryan & Deci, 2020). Examples of the aforementioned include: conceptual understanding, flexible problem solving, and social responsibility (Deci et al., 1991) as well as increased levels of intrinsic motivation (Niemiec & Ryan, 2009). Other advantages include higher levels of enjoyment and value (with a decline in pressure) (Wang et al., 2019) and enhanced wellness (Niemiec & Ryan, 2009).

On the contrary, environments that are over controlled and display signs of neglect not only thwart the satisfaction of psychological needs, but also have unfavourable influences on learners' emotional development and scholastic performance. According to Deci and Ryan (2000), learners may display signs of inner conflict, alienation and anxiety and make compensations with regards to their goals. Ryan and Deci (2019) caution that one may run the risk of compromising the richness and depth of the learning experience.

3.4.5 CONCLUSIONARY REMARKS

> *Self-determination theory, when applied to the realm of education, is concerned primarily with promoting in students an interest in learning, a valuing of education, and a confidence in their own capacities and attributes* (Deci et al., 1991, p.325)*.*

Over time, SDT has grown through conceptually and empirically connecting models and phenomena. It operates progressively fitting new findings within the existing well-founded evidence-grounded framework. It has been informed by multiple methods and interventions and continues to pass the criteria of coherence and rigour (Ryan & Deci, 2019). The theory is continuously proliferating. One such example is a study by González-Cutre et al. (2016) who investigated the possibility of a fourth psychological need, namely the need for novelty.

Throughout this section the researcher has provided an overview of SDT including the history of the theory, the theoretical foundation underpinning the theory, an overview of the fourth mini-theory (Basic Psychological Needs Theory) as well as a review of the research with specific reference to the educational arena. The empirical research reviewed has also addressed the call by Eisenhart (1991) for scholarly discourse to be functional outside academic discipline by being practical and/or helpful in day-to-day educational practice.

SDT was proposed as a suitable framework to provide the scaffold or frame for the study (Anfara, 2008) to specifically gain insight into the passive learning phenomenon being studied. SDT contends highly controlled educational environments that advocate high stakes testing as these evidently encourage learner passivity at the cost of individual learning. The danger is that, apart from encouraging passive learning, these environments apply a single standard to all learners and by effect, many learners are

overchallenged whilst others are bored (Ryan & Weinstein, 2009). Within the South African context, the CAPS curriculum with its final grade 12 examination, follows a similar approach. As SDT is essentially regarded as a macro-theory of motivation (Niemiec & Ryan, 2009) and learner passivity can be likened to high levels of learner amotivation, SDT can be considered as an appropriate proponent to encourage psychological need satisfaction (which directly influences motivation) as well as encourage intrinsic motivational properties. When intrinsically motivated, learners increase their capacities and learn new things (Fidan & Oztürk, 2015).

3.5 HEUTAGOGY

In 2016, Blaschke and Hase made the statement that heutagogy provides the learner with the opportunity to think about their learning in a revolutionary way. This was reiterated by Tümen Akyildiz (2019) who mentioned a revolutionary change in human learning, which has had a significant impact on the whole education system within the 21st century. A year later, the COVID-19 pandemic intensified this process when it became the impetus for change, shaking the foundations of the education system at its core (Vinayan & Harikirishanan, 2021).

In the previous section, SDT as a theory of motivation was discussed along with the potential of the AFCP to activate learners' need for competency, autonomy and relatedness. Ideally the passive learning phenomenon is countered as learners eventually move across the Pedagogy-Andragogy-Heutagogy (PAH) continuum where they become more self-determined in their approach to learning. Blaschke (2019) importantly states that heutagogy does not derive from Deci and Ryan's theory. Self-motivation, which receives emphasis in their theory, is however, seen as an important element of heutagogy (in Agonács & Matos, 2019). Consequently, in the words of the researcher, one can distinguish between the two concepts as follow: Self-determination is seen as 'determined by the self', whereas heutagogy is seen as 'the self determines'. Self-determined learning has received wide focus from a psychological point of view; however, the pedagogical impact of its implementation has barely been discussed (Glassner & Back, 2019).

3.5.1 THE FOUNDATIONS OF HEUTAGOGY

At its core, heutagogy is a learner-centred approach to learning (Agonács & Matos, 2019). The word originates from the Greek word "heut" which pertains to the 'self' (Hase & Kenyon, 2007). Within academic literature, heutagogy constitutes the Theory of Self-determined Learning (SDL) (Banerjee, 2019; Hase & Kenyon, 2003) and is predominantly rooted within three theories, namely complexity theory, humanism (Carl Rogers, 1969) and constructivism (Vygotsky, 1978) (Bhoyrub et al., 2010; Hase, 2014a; Hase & Kenyon, 2013). Self-determined learning is primarily concerned with "…understanding how people learn best and how the methods derived from this understanding can be applied to educational systems" (Hase, 2014a, p.16).

In short, constructivism emphasises the importance of making sense of the world and reality by continually building on one's past experiences and knowledge whilst engaging in new learning experiences (Ilieva Nikolovska et al., 2019). As a result, there is an increase in experiential learning whilst the control of the teacher becomes less and less (Hase, 2014a; Hase & Kenyon, 2013). Vinayan and Harikirishanan (2021) view heutagogy as a framework for learning that serves, in their words, as a 'harness' to manage this complex concept of learning to prepare learners for the demands of society in the 21st century. Humanism highlights the concept of human agency, as humans are naturally inclined to ask questions, explore and make novel connections. Humanists are also responsible for coining the term learner-centred learning (Hase, 2014a).

According to Blaschke (2016) there are four key principles to heutagogy, namely agency, capability, reflection and metacognition. Learners predominantly take the responsibility for their learning whilst supported by the teacher, who takes on the role as a guide. Heutagogy also acknowledges the sporadic nature of teaching as learning happens in a non-linear way. Learners demonstrate high levels of autonomy and emphasis is placed on developing learners' capacity and capability (Blaschke, 2012; Hase, 2014a). Banerjee (2019) states that SDL is not something that can be done to learners. She contends that humans are naturally self-determined and that the principles of SDL create optimum opportunities for learners to grow and operate as self-determined individuals.

Important to note is that heutagogy is at the most autonomous end of what is known as the PAH continuum (Luckin et al., 2010). In short, this reflects the Greek origins of the words learner-led, adult-led and self-leading respectively. This continuum at its opposite ends, captures the balance between control and autonomy. Pedagogy is completely teacher-led, and teachers take full responsibility for what is learnt as well as when learning happens. When moving to andragogy, learning becomes more self-directed as the teacher is viewed as a mentor, but learners are encouraged to make decisions and find solutions to problems. When moving to a heutagogical approach, learners are encouraged to take responsibility and initiative when it comes to their learning (Ilieva Nikolovska et al., 2019). When learners are introduced to heutagogical principles and learning at an early stage in their schooling, there will no longer be a need to 'move' them across the PAH continuum (Blaschke, 2014).

3.5.2 LINK WITH SELF-DETERMINATION THEORY

Within the context of this study, SDT is proposed as a framework to view whether a pedagogic intervention, that allows learners to be more autonomous, will ultimately activate their motivation and increase their active engagement in individual learning processes. Deci and Ryan's theory, discussed in the previous section, emphasises the role of motivation from a psychological point of view. They argue that when learners' need for autonomy, relatedness and competency is met, their self-motivation is activated. Self-motivation is seen as a component of heutagogy as learners have to have high levels of self-motivation or intrinsic motivation to learn in a self-determined way (Blaschke, 2016; Glassner & Back, 2019).

Heutagogy similarly recognises learners' need for *competency* as it is essential to grow learners' capability, build their capacity and develop their competencies (Banerjee, 2019; Blaschke, 2012). When learners are capable, they are able to use their knowledge and skills in novel situations, unfamiliar contexts or contexts that are everchanging (Hase & Kenyon, 2007).

Closely linked to the need for *autonomy* is learner agency, which is seen as critical in SDL. Learners are enabled with the choices as to how, what and when they learn, and these may differ significantly based on the experiences, knowledge and skills of each

individual learner (Hase, 2014a). Learners are consequently considered 'active agents' in their learning, which manifest itself in the following ways:

- their motivation to learn
- the effort expended when participating in learning activities
- choosing the focus area(s) for their learning in general or their learning activities
- their ability to critically review information to distinguish what is important for their learning
- being able to assess their progress and whether or not they are learning; and
- consolidating what they have learnt (Hase, 2014b).

Heutagogy also extends Deci and Ryan's need for *relatedness* through collaboration with peers. According to Canning and Callan (2010), learners' heutagogic tendencies develop when they discuss their learning journey with others. They continue by stating that heutagogy encourages a space for collaborative reflection, which enable learners to confidently share their views, beliefs and opinions. When listening to others, individual cognitive schemas can be altered and/or extended. Learners also discover others with similar views or interests, which then create opportunities for future collaboration (Blaschke & Hase, 2016).

3.5.3 SKILLS & COMPETENCIES

According to Blaschke and Hase (2016, p.2), "We are in the age of knowledge and skill emancipation." The 21st century thus demands a differentiated skillset to thrive in an era where innovation and change has become the norm. Hase (2014b) lists a few of these in the following quote:

> *Realising human potential through learning, however, can be a much more dynamic activity. It means finding ways to enable participants to explore, discover, test hypotheses, research, confront, reflect, change, create, analyse, and synthesise. Heutagogy places an emphasis on these activities in formal and nonformal learning environments* (p.99).

A heutagogical approach to learning therefore has the potential to help learners acquire these skills both inside and outside the classroom and as learners are prepared for their positions once they enter the workforce (Blaschke & Hase, 2016). What follows, is a short discussion of some of these skills as they have become a necessity

for 21ˢᵗ century learning. What is important to note, is that the skills and competencies discussed below are grounded within high levels of learner autonomy (Banerjee, 2019).

3.5.3.1   Adaptability and/or flexibility

Learners' ought to embrace the notion of becoming capable lifelong learners with a rounded skillset, passionate about learning as they constantly have to navigate and manage the rapid change brought about by the knowledge era (Blaschke & Hase, 2016). Having to adapt and being flexible are therefore essential skills. According to Agonács and Matos (2019), the changing workforce demands 'fast' learners who can take responsibility for their learning which often happen 'ubiquitously and non-linearly'. These skills are not only a necessity for the learner, they also translate to the curriculum and assessment practices as learners have to learn how to define, adapt and assess their own learning outcomes (Tümen Akyildiz, 2019).

3.5.3.2   Creativity

Heutagogy provides learners with the freedom and space to activate their creativity (Hase & Kenyon, 2013). From a simplified point of view, this can be achieved through learning approaches such as writing, reflecting, drawing, designing and creating mind maps (Hase & Kenyon, 2013). As an important 21ˢᵗ century skill, creativity has become a prominent objective for schoolteachers (Tran et al., 2017), as it is seen as significant to personal and cognitive growth (Olivant, 2015). Being creative entails one's ability to find novel solutions that can generate new outlooks to existing problems as it requires the use of imagination (Ozkal, 2014). From a heutagogical perspective learners embark on a journey of discovery which is often not clearly defined as they break through the 'conventional educational lines' (O'Beirne, 2014). International research by Tran et al. (2017) has, however, found that teaching for creativity is associated with several challenges, which include teachers' limited understanding of creativity and creative pedagogies.

3.5.3.3   Collaboration and Communication

According to Blaschke (2012) collaborative learning is seen as an essential component in the heutagogical classroom. Learners are provided with opportunities to work in

groups toward solving a problem, explore or experiment to achieve the learning outcome(s). This occurs through contrasting and disputing one another's viewpoints and trial and error which compels learners to adapt their approaches as they gain new knowledge and comprehension through their experiences (Blaschke & Hase, 2016; Vinayan & Harikirishanan, 2021). Learning via social interaction is critical as it enables learners to adapt their existing cognitive schemes, create new learning and test and validate their thinking. Learning communities also positively influence motivation and generate diverse solutions (Vorhauser-Smith, 2011).

Drawing on Vygotsky's social constructivist theory as well as the need for *relatedness*, (Deci et al., 1991; Ryan, 1995), learners develop and refine their knowledge structures within these learning relationships. The shared meaning making also facilitates reflection (Canning & Callan, 2010), which may ultimately help learners to access deeper learning. Working as a group or team enables the development of their interpersonal communication skills, teaches them how to ask for help from their peers, and empowers them to improve their arguments as they have to present these to one another (Glassner & Back, 2019). As learners eventually become older, constant collaboration enables them to build a rich learning network of connections with people, resources and eventually global communities. This then maintains and strengthens their growth in terms of knowledge, skills, ability and perspective (Bull, 2014).

3.5.3.4   The skill of knowing how to learn

According to Hase (2014a, p.20), "Capable people have justified high self-efficacy… and know how to learn". Two years later the critical skill of knowing how to learn was identified as one of the central principles of heutagogy (Hase, 2016). Elsewhere this is referred to as an 'autodidactic' approach to learning (Ilieva Nikolovska et al., 2019, p.153).

Learners' perception of their ability to learn is also closely linked to prior knowledge and experiences (Canning & Callan, 2010). This once again highlights the potential of the AFCP to enrich the learning experience by making it more meaningful. Within the heutagogic process of learning how to learn, learners are also encouraged to ask questions and to think rather just to blindly accept the curricula (Hase, 2014b). Learners also have to learn how to become researchers and should know how to

respond if and when they have a skill or competency deficit by knowing where to go to address this need (Blaschke & Hase, 2016). One can, however, not assume that learners will automatically know how to learn via a heutagogical way; therefore, some attributes may have to be taught (Stoszkowski & McCarthy, 2018).

3.5.3.5 Reflection

Blaschke (2014) underlines the importance of being able to process, evaluate and finally reflect on the learning process especially in the knowledge era where learners are bombarded with information. For this reason, reflective learning skills ought to become part of learners' learning repertoires (Blaschke, 2014). Opportunities should be provided by teachers within the learning process as new learning can be altered and/or refined and previous learning can be consolidated.

Reflection also enables learners to ascend to higher levels of cognition such as one's ability to analyse, reason and synthesise. Reflection, like other skills, needs to be practised. Learners should also reflect on the new knowledge they have gained and how this relates to their existing knowledge base to consider how their newfound knowledge and discoveries have refined or altered their belief and value systems (Blaschke & Hase, 2016). Lastly, learners eventually become 'reflective practitioners' when they discover the importance of voicing the opportunities and challenges from their learning journey as well as their learning preferences and how these helped them determine their 'heutagogic tendencies' (Canning & Callan, 2010).

3.5.4 LEARNING

According to Hase (2014b) learning is first and foremost about the realisation of human potential. Because human potential is unique to each person, learning can and should not be a one-size-fits-all approach but rather be personalised (Hase & Blaschke, 2021) to create opportunity for maximum growth and development in every individual. Learning is a highly dynamic process that can only be controlled by the learners' mental processes. Deakin Crick et al. (2015, p.145) sees meaningful learning as "…deep changes in learners' behaviour, beliefs and attitudes". These processes or changes can nonetheless be inhibited when a teacher-centred approach is followed (Hase, 2014a).

3.5.4.1   Learning as a process

When infants grow, little distinction is made between learning, playing, exploring, and discovering. It is a natural process and part of everyday life. As learners grow older and enter the formal education system, this change and learning becomes a process often associated with work. As they progress through the schooling system, work is mostly determined and defined by teachers and policy makers. Subsequently, education becomes something that is done to the learner. Learners are not necessarily provided with opportunities to define, direct or collaborate with peers to choose a course of action (Bull, 2014). The process of learning is associated with making new linkages which collectively includes ideas, emotions, experience, and knowledge which enable learners to discover and/or develop a new understanding about themselves and their world (Banerjee, 2019).

Hase and Kenyon (2007) make a distinction between acquiring knowledge and skills and SDL by viewing them as inherently different processes. They argue that although knowledge, skills and competencies can be acquired and replicated, this is not the case with learning. Hase and Kenyon (2007, p.12) consider learning as "…an integrative experience where a change in behaviour, knowledge, or understanding is incorporated into the person's existing repertoire of behaviour and schema (values, attitudes and beliefs)". When learning has taken place, these can be modified and meaningfully applied to novel situations. However, when skills and knowledge have been acquired superficially, this is not necessarily the case as full integration with learners' prior experience has not yet occurred (Banerjee, 2019).

3.5.4.2   Heutagogic learning characteristics

Although the principles of heutagogy were discussed earlier in this section, what has not been discussed is how this translates into the classroom. Certain key features have been identified which is captured in the table below that follows.

TABLE 3.1: HEUTAGOGY AS A CONTINUUM OF ANDRAGOGY

Andragogy (Self-directed)		Heutagogy (Self-determined)
Single-loop learning	▶	Double-loop learning
Competency development	▶	Capability development
Linear design and learning approach	▶	Non-linear design and learning approach
Instructor-learner directed	▶	Learner-directed
Getting learners to learn	▶	Getting learners to understand how they learn (process)

(Source: Blaschke, 2012, p.61)

As seen in Table 3.1, a heutagogic approach generally envisages a more independent approach to learning where the process is key to whether learning is successful. Double-loop learning is one of the concepts listed above which is less familiar. Simply put, double-loop learning transpires when learners are behaviourally and psychologically engaged in the learning process. As a result, learners reflect on their experience to consider and review their personal beliefs and prevailing assumptions (Tümen Akyildiz, 2019). Apart from the shift on the continuum, Hase and Kenyon (2013) highlight a few key points that should be considered when engaging in the learning experience. These are as follow:

- individualise learning
- differentiate between deep and superficial learning
- refrain from controlling the learning experience
- allow for informal learning experiences; and
- recognise that teaching has the potential to become a barrier to learning.

What becomes evident is the freedom that learners have to choose the direction and path that their learning will follow. This includes what they want to include in a flexible curriculum (Agonács & Matos, 2019). When they are allowed to do so, they are more focused and efficient when it comes to their learning (Hase & Blaschke, 2021). This higher level of agency increases the demand on learners to take responsibility for their learning (Hase & Blaschke, 2021). Within an education system that generally promotes high levels of rote learning and teaching to the test (Blaschke, 2014), learners may not be accustomed to learning autonomously.

3.5.5   LEARNERS

Learners are highly affected when embarking on a heutogogical approach to learning. Many learners have become accustomed to a more passive, teacher-centred approach and consequently find the transitioning a great challenge. The question is therefore asked how teachers can support their learners to move along the PAH continuum and 'unlearn' their prior dispositions to become agentic learners (Hase, 2014b; Hase & Blaschke, 2021). It is also important to note that closely linked with learners being able to move towards a heutagogical approach to learning, is a shift in the locus of control from the teacher to the learner. This should be a gradual process and not happen instantaneously (Hase, 2014a).

3.5.5.1   Learner readiness

Where a heutagogical approach to learning has been introduced, researchers have found that participants reverted to their 'comfort zone' based on their prior learning patterns (Blaschke, 2014). Consequently, teachers have to carefully plan and deliberate how they are going to introduce heutagogical approaches over time (Stoszkowski & McCarthy, 2018) to try and prevent regressing to old patterns. They must also gain an awareness of learners' readiness for learner autonomy, as this can lessen the potential mismatch between teachers expectations and learners' preconceived ideas (Farahani, 2014). The comfort zone can be overcome when learners experience high levels of autonomy and empowerment (Canning & Callan, 2010).

One of the greatest emotional barriers that learners need to overcome is a sense of helplessness when a heutagogical approach is followed (Canning & Callan, 2010). Research by Glassner and Back (2019) revealed a similar finding, specifically at the onset of their heutagogical learning journey. They were overwhelmed with the freedom they were given to choose the direction of their learning path. Questions asked by the students centred around how grades would be allocated and the expectations of the lecturer. Some students were confused whereas others experienced a form of disbelief at the freedom given to explore the topic under study. Students also did not know how to choose a topic and/or find the learning resources that related to the topic chosen.

Apart from feeling helpless, learners may also experience inner conflict or feel intimidated as they are not in the habit of taking responsibility for their learning (Blaschke & Hase, 2016). Others may experience a sense of fear as they have yet to grow in their ability to learn autonomously as self-determined learners outside of the traditional boundaries of the classroom to which they are accustomed to (Blaschke, 2014). This may be due to a lack of attributes needed to engage in SDL (Stoszkowski & McCarthy, 2018).

Putting support in place for learners is inevitable to undergo successful transitioning. Teachers can assist learners with this process in a variety of ways. Firstly, teachers can inform their learners of the heutagogical principles and concepts and explain the difference between heutagogical and traditional learning (Vinayan & Harikirishanan, 2021). They can also allow them to negotiate the learning process and/or the design to be used for assessment (Hase, 2014b). Teachers can provide learners with explanations and opportunities to practise and grow their emotional literacy, which is required for when they have to reflect on their overall learning experience (Canning & Callan, 2010).

3.5.5.2   Advantages of a heutagogical approach to learning

Although learners have to overcome all these challenges associated with being ready for a heutagogical approach, the advantages and benefits far outweigh the negative emotions they might experience. From a holistic point of view, the SDL approach has the potential to provide learners with the opportunity to first and foremost learn about their learning preferences and change their paradigm about the meaning of learning altogether. They also learn to draw on the strengths of the heutagogical approach to close the metaphorical chasm between traditional education systems and learning as it occurs naturally in the real world (Glassner & Back, 2019).

A few of the benefits of learning via a heutagogical approach have been accounted for. Firstly, learners choose the direction that their learning will follow, according to their interest and passion and consequently learning becomes a more enjoyable experience (Hase & Blaschke, 2021). Learners also demonstrate higher levels of intrinsic motivation and state that learning becomes more meaningful (Glassner & Back, 2019).

They move to the higher levels of Bloom's Taxonomy, which are rarely accessed in the traditional classroom setting (Hase, 2014b).

As mentioned earlier on, one of the four key principles of heutagogy is capability. Learners experience significant growth with regards to their capability to learn when confronted with challenges that are generally beyond what they are capable of doing (Bhoyrub et al., 2010; Ilieva Nikolovska et al., 2019). This ultimately enables and prepares learners to manage the complexities that they face when entering the workforce (Banerjee, 2019). Learners are able to discover learning strategies that suit their unique learning needs, grow in confidence especially when participating in groups and are faced with multiple opportunities to consider their attitude towards learning in general (Canning & Callan, 2010). Lastly, and most importantly, heutagogy encourages learners to take ownership of their learning experience where learners readily identify their own learning needs and are able to personalise their learning experiences accordingly (Bhoyrub et al., 2010).

3.5.6   Teacher role and Curriculum design

According to Glassner and Back (2019), 21st century learning envisages innovative pedagogies as there has been a complete change in the way knowledge is organised and distributed. They continue by describing it metaphorically as a tree-like structure thereby emphasising the complexity of content relevance and the new demand that is simultaneously placed on curriculum design. This has a reciprocal impact on teachers when the move towards a more self-determined approach is undertaken as teachers have to acquire certain heutagogical methods which are considered higher order pedagogical skills (Levy-Feldman, 2018). They also ought to undergo a role change to take on the role as learning leader, something which is often unfamiliar and does not come naturally (Hase & Blaschke, 2021).

3.5.6.1   Teacher role change

As with learners, teachers are similarly confronted with the uncertainty associated with the change of roles (Blaschke, 2014). The first step is to be cognisant of the fact that they should relinquish their need for control which may be a daunting experience (Abraham & Komattil, 2017; Blaschke & Hase, 2016). It also necessitates a re-

evaluation of their teaching methods as they now become co-learners on the learning journey or a valuable resource which can be accessed when necessary (Blaschke & Hase, 2016; Ilieva Nikolovska et al., 2019; Vinayan & Harikirishanan, 2021). Due to the new teacher-learner dynamic, teachers have to learn how to relate to learner difference (Levy-Feldman, 2018) in order to accommodate different views and opinions as learners bring their unique array of experiences to the classroom.

To become a 'learning leader', teachers need to first and foremost grow their capacity to learn continually whilst being able to accept and manage uncertainty. They should also be able to foster engagement and collaborative thinking (Hase, 2014b). They have to come to realise that they do not have all the answers, and that their primary role is to be a guide that help learners move from their comfort zones to explore novel ways of learning. Teachers should grow their resilience to let learners 'fail' as mistakes enable and empower learners to learn and explore outside the confined boundaries of their comfort zones. Teachers ought to put scaffolds in place to support learners' progress towards competency (Abraham & Komattil, 2017). This will assist learners towards becoming autonomous and build their confidence to engage in future learning cycles (Blaschke, 2014).

3.5.6.2 Curriculum design

Hase (2016) clearly states that heutagogy does not imply a curriculum free environment; however, both the curriculum and the way it is approached should be flexible. Hase and Kenyon (2007, p.114) use the words 'living curriculum' to describe the nature of the curriculum as being open to change whilst learners grow and develop their knowledge, skills and beliefs. When undertaking the process of a heutagogical curriculum design, teachers should be mindful of designing a non-hierarchal and non-prescriptive curriculum, whilst at the same time, meeting the needs of the learner (Hase & Blaschke, 2021). This includes taking the intrapersonal background of learners into consideration as well as their individual skillset, existing knowledge base and attitude (Stoszkowski & McCarthy, 2018).

3.5.6.2.1   *Key features*

Certain key features have been identified in the literature to guide teachers when undertaking a heutagogical curriculum design. The first is to create opportunities where learners are free to identify and explore a topic whilst using a selection of resources and materials relevant to the learning path that they have identified (Blaschke, 2014; Blaschke & Hase, 2016). A second is to give learners real-life problems which are relevant to their context and, when resolved, have a meaningful impact on their environment and/or communities (Blaschke, 2014). When asking questions, the focus shifts from content and recall to reflection, creativity and deeper insight into the content being explored, once again reaching the higher levels of Blooms' Taxonomy (Hase & Blaschke, 2021). Teachers as the learning leader must take an active role in scaffolding, especially at the onset, as learners from differing backgrounds with different abilities, may display varying levels of self-determination. This reinforces the importance of scaffolding at the onset of the SDL process but is subject to change and is altered as learners progress through the process (Blaschke, 2014). Teachers must also enable learners so grow and refine the skills needed to extract knowledge from the sea of information to which we have become accustomed (Levy-Feldman, 2018).

From a practical point of view, the design elements to help learners move towards a learner-centred heutagogical approach include having learners create learning contracts, a curriculum that is flexible and open for change and adaption, learner-initiated questions and negotiated assessment (Blaschke, 2012). Burke et al. (2019) describes the move according to three phases. Firstly, learners have to identify their learning goals. Phase two includes setting up an action plan to achieve the goal(s) set out in phase one as well as processes to monitor their progress. Within the last phase, learners self-evaluate to adjust the learning plan if/when necessary.

3.5.6.2.2   *Link with the flipped classroom literature*

Green and Schlairet (2017) searched for a model of teaching and learning within the educational research sphere that was founded on the principles of heutagogy. The FC was identified as a suitable option. Their study found that although some participants were negative towards the FC, they still moved from a pedagogical disposition towards

a more andragogical and heutagogical disposition. Hase and Blaschke (2021) also referenced the FC as is provides ample opportunities for collaboration.

3.5.6.2.3   *Resources*

Accessible resources are key to the learning experience. The resources provided at the onset of a learning experience are not meant to be exhaustive but serve as a baseline for learners to work from. When learners build from this baseline, they develop their skills as researchers (Hase & Blaschke, 2021). Teachers as the learning leader, as well as learners, should be prepared to adapt and uncover relevant resources in response to new lines of inquiry, sub-questions and discoveries that may come about as a result of the learning process (Hase, 2014a).

3.5.6.2.4   *Assessment*

Assessment in the form of formative feedback and reflection is seen as critical within a heutagogical design (Hase, 2014a). Assessment is predominantly flexible, learners become largely responsible for designing their own assessment criteria and ultimately become the primary assessors of their learning (Blaschke & Hase, 2016; Vinayan & Harikirishanan, 2021). Unlike the traditional schooling system, there is a greater focus on formative assessment as it provides learners with opportunities to continually grow and improve along the way (Blaschke, 2014). Learners are given the freedom to firstly participate in the design process of the assessment. They are also not limited to the original scope but can creatively and innovatively explore beyond the traditional boundaries set via standardised assessments. There is also a shift in focus as learners are required to show that they can demonstrate their competencies in unfamiliar or real-life situations (Hase & Blaschke, 2021; Hase & Kenyon, 2007). This ultimately implies that learners can present their learning in various ways even though the same topic has been covered. Learners also participate in the evaluation of their own learning and process of knowledge construction (Glassner & Back, 2019).

3.5.7   NEUROEDUCATION AND HEUTAGOGY

Brain research has shown radical advancement since the early 2000s. According to Banerjee (2019), much of what is being discovered in terms of learning, is revealing the principles of heutagogy. This may be due to the fact that neuroscience provides us

with a scientific basis and more insight into how humans learn (Hase & Blaschke, 2021). Apart from drawing on humanistic and constructivist theories of learning, heutagogy also draws on the more advances in neuroeducation that have revealed what happens at a cellular level in the learning process (Blaschke & Hase, 2016). Consequently, neuroscience research provides an opportunity to develop an evidence-based practice for teachers (Agonács & Matos, 2019; Hase, 2016).

According to Hase (2016), neuroscience research has the potential to significantly increase our understanding of how learners learn best. It also sheds light on the ineffectiveness of what is often seen as good practice. The problem, however, is that the complexity of the learning process may be underestimated. Because every learners' brain is different, individual experience will influence how learners approach their learning in terms of the areas on which they focus, the questions they ask at the onset of inquiry, their concerns and how their new found knowledge would link with existing cognitive structures (Hase & Kenyon, 2013). They continue by stating that because learners are uniquely individual, it is hard to predict the new patterns they will form when new learning integrates with their existing knowledge base. As learning takes place, learners' cognitive schemata are adapted while new hypotheses, questions, needs come to the surface and new neuronal connections are formed (Hase, 2014a). Learners may, for example, aim for a change in behaviour or a new competency, but end up making unexpected cognitive leaps. In this case, the curriculum may become a constraint if it is not adaptable.

Collaboration as a key principle of the heutagogical approach creates opportunities for learners to create original ideas as they are exposed to the ideas of others. This occurs mainly because their peers act as a cognitive stimulant that can activate relevant or alternative neural networks (Hase & Blaschke, 2021). As humans we "…are hard wired to learn" consequently, we are naturally inclined to explore, analyse and inquire (Hase, 2014a, p.22). A heutagogical approach inevitably coalesces with neuroeducation research and because learners have to become self-determined in their learning, they are less passive.

3.5.8 THE MOVE TO LEARNER-CENTREDNESS WITHIN A HEUTAGOGICAL APPROACH

Researchers are in agreement that constant exposure to rote-learning negatively impacts learners over time (Blaschke, 2014; Bull, 2014). Learners operate from an 'industrialised mindset' where they have become accustomed to rote learning or teaching to the test. Consequently, learners' creativity, ability to reflect and self-determined capabilities have been neglected. It has also largely resulted in learners who are in the habit of being spoon-fed (Blaschke, 2014). Furthermore, formal teacher-centred education disables learners in the sense that they are often less inquisitive and curious and reluctant to expand the boundaries of their learning (Hase & Blaschke, 2021). Additionally, Blaschke et al. (2014) found that student teachers' perceptions around teaching have centred around didactics and presentation rather than learning, thereby reinforcing the notion of passive learning behaviour.

As mentioned earlier, when moving towards a self-determined approach to learning, there is a shift in focus to (i) understand how learners learn best and (ii) maximise the development of learners' capabilities to find appropriate methods, which can be applied to educational systems as a whole (Hase, 2014a; Vinayan & Harikirishanan, 2021). This is, however, a challenge as traditional classrooms are limited to time constraints which makes it challenging to personalise time and pace in order to accommodate individual learning needs (Bull, 2014).

3.5.8.1 Teacher control and role change

Hase and Kenyon (2007) disputed whether the teacher can truly control the learning situation as they could not predict the process of bifurcation. This creates the possibility that curriculum and/or learning activities can become redundant at any time in the learning process. They argued that teachers' roles are limited to knowledge and skill transfer. Levy-Feldman (2018, p.183), on the other, hand states that there has been a shift "…to the paradigm of teacher's authority and control". By implication, teachers therefore hold an authoritarian position in their classes. Hase (2014b) points to the danger of an over-emphasis on teacher competence at the cost of effectiveness in the traditional models of education, where the teacher is in control and the learner is a passive recipient. Lastly, it is important to note that the fear of 'relinquishing power' can challenge some teachers severely (Ilieva Nikolovska et al., 2019) and consequently

become a barrier when aiming to change their mindset from a teacher- to a learner-centred approach.

3.5.8.2 The learner at the centre

The word 'teach' is defined in terms of instruction, the transfer of information or to give a lesson. Although teachers inherently occupy an active role when teaching, learners become inclined towards assuming a more passive role (Hase, 2014b). When moving towards a heutagotical approach, the focus shifts from the teacher back to the learner (Hase & Blaschke, 2021). The learning process and the nature of the teacher-learner relationship becomes more dynamic as there are higher levels of interaction between teachers and learners, pro-active learner involvement and higher levels of participation (Blaschke, 2016; Blaschke & Hase, 2016; Hase & Kenyon, 2013). There is also a display of increased learner control and evidence of learner-initiated learning (Hase & Kenyon, 2013) and learners take responsibility for negotiating the process to be followed as well as the content, depending on the topic they want to explore and the learning outcomes to be reached (Hase & Blaschke, 2021).

Learner-centredness and determinedness remain a prevalent research topic (Agonács & Matos, 2019) although teacher-centred learning largely prevails within the education system. One reason may be that these theories challenge institutions that rely on mass education to survive (Hase, 2014b). To counter the passive learning phenomenon, learners need to become fully engaged (Hase, 2014b). Teachers therefore need to align the context and content with a learner-centred approach (Blaschke, 2012). Hase (2014a, p.16) explicitly states that "At the heart of self-determined learning… the learner is at the centre of the learning process".

3.5.8.3 Autonomous learning

Teachers need to recognise the importance of learner agency to initiate a move to innovative pedagogical practices such as learner-centredness (Hase, 2016). They come to accept that learners have agency when they see their learners rather than themselves as central to the learning process (Hase & Blaschke, 2021). Learners can be introduced to heutagogical practices from a young age (Blaschke, 2014) as this may foster a positive inclination towards autonomous learning that can continue after

they have completed their formal education. It is once again important to reiterate the noteworthy part that a heutagogical approach to learning can play to develop learners' capabilities and capacity (Vinayan & Harikirishanan, 2021). Heutagogical learning enables learners to forge new non-linear self-defined learning paths, ask critical questions and extend the boundaries of the content they are uncovering (Blaschke, 2016; Blaschke & Hase, 2016).

3.5.9 CONCLUSIONARY REMARKS

The COVID-19 pandemic served as a reminder of how critical it is to enable learners to become lifelong learners and to have the skillset to learn autonomously. Education can therefore not be limited to traditional settings (Tumen Akyildiz, 2019). Hase and Kenyon (2007) state that people only change in response to a definite need and that those who are comfortable are less likely to undergo a behavioural change. By implication, teachers might want to continue with the status quo of traditional schooling. Some teachers, however, are open to change and transformation as will be seen in Chapter 5 (*cf.* 5.5.7) of this study. It remains uncertain however, what teacher characteristics influence teachers to become more receptive or willing to adopt innovative pedagogies such as a heutagogical approach to learning (Hase, 2014b). One aspect that has become clear, is their perception of and the value that they add to agency (Margarit, 2021). Another is their willingness to relinquish absolute control in the classroom. This, however, transcends beyond the classroom environment and includes key role players such as policymakers and politicians who operate in wider educational systems (Hase, 2016).

3.6 CONCLUSION

The purpose of the literature review was to provide an overview of the researcher's expertise on her field of research including the key terminology, ideas, concepts and theories (Grant & Osanloo, 2014; Ravitch & Riggan, 2012). It is also clearly and logically demonstrates how the concepts that comprise the conceptual framework, the theoretical framework and the secondary research questions interconnect theoretically in a novel way, whilst addressing the primary research question guiding the study. This clarity adds rigour to the research process and also assists with the process of data analysis (Rocco & Plakhotnik, 2009).

Within chapter 3 the researcher has provided a contextual framework for the study by providing a comprehensive account of the key factors, theories and concepts as well as their interconnectedness. A pedagogic intervention was introduced that theoretically links neuroeducation research, pedagogy (the flipped learning approach) and Self-determination Theory, which eventually extends to heutagogical principles.

The focus then shifted further along the continuum by introducing the final key concept of the study, namely heutagogy. Within the PAH continuum, heutagogy is positioned at the opposite end of pedagogy as it naturally flows from andragogy where the learner takes a moderate amount of responsibility for their learning compared to heutagogy, where learners become autonomous and fully responsible for their learning paths. To move from one end to the opposite of the PAH continuum, learners have to undergo a transformation when it comes to their frame of reference, which entails the shift from being predominantly passive and a consumer of knowledge to actively participating and following an inquiry-based approach (Blaschke, 2014).

The researcher is of the belief that the selected theoretical framework, which epitomises internal motivational properties as well as the basic psychological need for autonomy, competence and relatedness, is suitable to inform the intervention that was implemented to address the research question that guided the study. More specifically, this refers to whether an AFCP can effectively address the phenomenon of learner passivity that is commonly found in South Africa's educational contexts, where teachers generally make use of a rote learning pedagogy and teacher-centred approach to transfer knowledge. The intervention can be regarded as innovative in nature as it links theory and practice, restricts transmissive teaching methods and recognises learner individuality (Gejdoš, 2019). It also addresses a call by teachers in developing countries for tangible support to improve their pedagogical practice, broaden their perspectives, and develop their ability to learn new educational trends (Kim et al., 2019).

CHAPTER 4

RESEARCH METHODOLOGY

4.1   INTRODUCTION

The aim of every methodology chapter should be to walk the scientific audience through the 'how' of the research study. Saying that, researchers who have embarked on a prolonged research project would recognise or agree that this process is not linear, objective nor value-neutral (Freshwater, 2020; Ravitch & Riggan, 2012; Thayer-Bacon, 2013). It also rests, to a large extent, on the willingness, input, time and commitment of significant role players such as research participants who often do not receive the credit or recognition, that they are due.

Ultimately, the methodology employed by the researcher serves the purpose of answering the research question(s) of the study. Consequently, due to the nature of the research question and the aim of the study, this study is oriented a-paradigmatically. It takes instead an interpretive stance flowing from a methodological approach known as 'qualitative description' (Sandelowski, 2000), a 'pragmatic qualitative approach' (Savin-Baden & Howell Major, 2013) or elsewhere the 'generic qualitative approach' (Kostere & Kostere, 2021).

Due to the challenges imposed on researchers by the COVID-19 pandemic (Byrom, 2020; Denfeld et al., 2020; Rahman et al., 2021), access to natural settings have been either limited or in most instances, prohibited. This was the case especially during the period (mid-August 2021 - mid-October 2021) when the data for this study were collected. The researcher employed four methods to obtain qualitative data (semi-structured online interviews, a feedback questionnaire, participant research diaries and spontaneous participant response) to answer the research questions and widen her understanding of the phenomenon under study. For the remainder of this chapter, the aim is to discuss the subsequent research questions, pragmatic qualitative approach and the research methodology employed to provide clarity to the reader about how the process of data collection, and ultimately analysis and interpretation, were undertaken. The procedure followed during the data analysis phase is discussed as well as how the data were verified.

4.2   RESEARCH QUESTIONS

Qualitative research problems ultimately necessitate an understanding of the intricacies or inner worlds of individuals exploring some event, process or phenomenon (Johnson & Christensen, 2014). They encapsulate among other things the goal of the study, and exemplify what the researcher intends to learn as well as which area needs further exploration (Savin-Baden & Howell Major, 2013). Apart from the evident connection between the theory, problem, method and phenomenon being studied (Connelly, 2014), it is important to note that research questions are formed through the philosophical and personal lenses of the researcher (Savin-Baden & Howell Major, 2013).

This study is guided by the primary research question: *To what extent does an altered flipped class pedagogy serve as an effective intervention strategy to address passive learning in a teacher-centred classroom?*

Flowing from the primary research question, secondary research questions are:

1. How do teachers experience their role transitioning when implementing the AFCP?
2. What are teachers' perceived challenges when implementing an AFCP?
3. To what extent, from the teachers' view, does the AFCP support learners to become motivated in their learning?
4. What are the benefits for learners, as perceived by teachers, when implementing an AFCP?
5. How are teachers' existing pedagogical approaches adapted when implementing an AFCP?
6. To what extent, from the teachers view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency, and relatedness?

4.3   RESEARCH PARADIGM

Becoming a qualitative researcher begins with recognizing and understanding qualitative research language. Some of the common words used in qualitative research studies are experience, discovery, understanding, meaning, exploration, process, involvement, passion, commitment, themes, patterns, sensitivity, intuition, illumination, creativity, lived experience, and first-person narrative (Kostere & Kostere, 2021, p.8)*.*

Kostere and Kostere's quote explicates the complex, intricate, subjective and value laden foundations from which theoretical and practical scientific qualitative research emanate and ultimately build on. It challenges the notion of 'philosophical orthodoxy' naturally leading towards moving past the boundaries laid through 'purist' approaches (Savin-Baden & Howell Major, 2013). Within a pragmatic qualitative approach, researchers consequently aim to remain philosophically neutral (a-paradigmatic) whilst choosing a theoretical framework as a complementary theory approach where greater emphasis is placed on utilising appropriate methods to answer the research question(s) at hand (Savin-Baden & Howell Major, 2013).

In 2000, an article by Sandelowski titled *Whatever happened to qualitative description?* opened a gateway for researchers to acknowledge the true nature of the methodological orientations of their qualitative studies more freely. Others have provided more depth and clarity regarding 'qualitative description' (Colorafi Jiggins & Evans, 2016; Lambert & Lambert, 2012; Neergaard et al., 2009; Turale, 2020); however, it is also referred to in research as 'pragmatic qualitative research' (Savin-Baden & Howell Major, 2013); 'basic interpretive qualitative study' (Merriam, 2002); 'interpretive description' (Thorne et al., 1997); 'generic qualitative research' (Caelli et al., 2003 Cooper & Endacott, 2007); 'generic qualitative approach' (Auta et al., 2017; Kostere & Kostere, 2021); 'exploratory-descriptive qualitative research' (Hunter et al., 2019) and a 'generic inductive approach' (Liu, 2016). For the purpose of this study the researcher will employ the term by Savin-Baden and Howell Major (2013), pragmatic qualitative research, which is discussed in more depth in the next section.

In the words of Tabulawa (1997):

> …*paradigms are ways of looking at the world, that is, they are world-views, mind sets, frames of references or conceptual frameworks. Each views phenomena differently from the others. Each claims to be producing more reliable and dependable knowledge than the others* (p.191).

Characteristically, paradigms form boundaries that shape research. The words of Tabulawa are reiterated by Broido and Manning (2002), except they also acknowledge the influence of paradigms on the types of questions that researchers ask and what the answers might look like. Atypically, within an a-paradigmatic study, the methodology is shaped by the intervention and qualitative feedback based on its

effectiveness in different real-time contexts. The motivation for the prior is based on the primary purpose of pragmatic qualitative research, which is to link theory and practice (Savin-Baden & Howell Major, 2013). The intervention (AFCP) that was introduced took the form of online teacher training supported by a complete teacher training manual developed by the researcher. An account was given of the origin of the research question, theoretical underpinnings, and conceptual framework of the study, as well as practical examples for implementation in real-world contexts.

Often, specifically in social science research, paradigms may impose limits on researchers to conform to certain paradigmatic presuppositions to present their research as more philosophically sound. Liu (2016), however, cautions that when an overemphasis is placed on defending established methodologies, it may come at the cost of paying insufficient attention to the findings of social reality. This does not imply that the researcher claims to position herself void of an ontological or epistemological position. It rather highlights the freedom of the researcher to move past the limits of paradigmatic constraints and embrace 'methodological flexibility' (Liu, 2016).

According to Chowdhury (2019, p.103), *ontology* is defined as 'the nature of social reality' where researchers asks questions such as "*What is reality? What is out there that exists? What is out there that is knowable?*". As mentioned in the introduction of this study, the research focus was strongly influenced by a real-time in-class experience of the researcher. Subsequently as a full-time teacher and part-time researcher she gained knowledge and experience from her own classes and made meaning from these. The researcher endeavoured to develop and design an intervention that could provide a probable in-practice solution to the passive learning phenomenon within the wide-ranging contexts of South African schools to ultimately improve the quality of teaching and learning.

Egbert and Sanden (2014, p.17) define *epistemology* in terms of an individual lens that is created through individuals' worldviews, which in turn is used to understand knowledge in the world. They continue by emphasising that epistemology is consequently unique for each individual and how understanding is acquired. Rawnsley (1998, p.2) defines epistemology as the "…theory of knowledge to encompass philosophical problems concerned with the origin and structure of knowledge" where believing, perceiving, imagining, inferring, remembering, reflecting, constructing and

corroborating are processes which have been included in the scope of epistemology as the branch of philosophy (Rawnsley, 1998). These actions in turn have a direct influence on the methods used to collect data and how meaning is ascribed to the findings (Egbert & Sanden, 2014). Considering the aforementioned, the researcher has a few questions of her own such as: *Do we know what we know? How do we know what we now? Can we ever claim knowledge to be our own?* This is echoed in the words of Shah and Al-Bargi (2013), where both the roles of the inquirer and inquired and their interaction with one another are acknowledged within a subjective transactional epistemology.

The third philosophical term that needs to be considered is axiology. Due to the nature of qualitative research, researchers need to be cognisant of their morals, values and ethical considerations and how these directly influence the research being conducted (Carter & Little, 2007; Chowdhury, 2019). Axiology extends to the ultimate purpose of the research being done as well as to what the researcher considers as valuable and/or meaningful (Chowdhury, 2019). In the words of Sandelowski (2010), a researcher's axiology permeates every word, whether they recognise it or not.

4.4   RESEARCH DESIGN

In short, Yin (2016) captures research designs as the 'logical blueprint' of the study. Creswell (2009, p.17) defines it as "…the strategy of inquiry". Research designs vary significantly and can also change during the course of the study. The need to do pragmatic qualitative research has been acknowledged; however, how to do it well has been questioned (Caelli et al., 2003; Savin-Baden & Howell Major, 2013). Qualitative pragmatic research is seen as the least theoretical of the qualitative approaches and is often dismissed by critics. It is essential that the research is grounded in existing knowledge, that thoughtful linkages are made with the work of others in the field as well as the data obtained in the process of data collection, and that the findings are trustworthy, rigorous and transparent (Freshwater, 2020; Lambert & Lambert, 2012; Neergaard et al., 2009).

Within educational studies, pragmatic qualitative research is commonly used when doing qualitative research (Merriam, 1998 in Caelli et al., 2003). Characteristically, these types of studies draw from concepts, models and theories in educational,

developmental or cognitive psychology research which ultimately provides frameworks for the studies (Caelli et al., 2003). At the beginning of this study, the researcher gave an explicit account of a real-life experience that greatly influenced the formulation of the primary research question of the study. When conducting a pragmatic qualitative study, it is essential to give an in-depth description and make explicit the starting point of the study as well as how the key concepts and theoretical frame were identified. However, the researcher is not obliged to stay within these boundaries (Sandelowski, 2010).

4.4.1 QUALITATIVE RESEARCH

Fundamentally qualitative research studies derive from the personal interest to those who undertake them. They are conducted in natural settings (work and/or social life of participants) and are dependent on the input and understanding of the participants' subjective experiences of the phenomenon under study. This occurs within participants' unique contexts as meaning is socially constructed (Creswell, 2009; Kostere & Kostere, 2021; Merriam, 2002). The multiple perceptions of the individual realities of the participants contributes to the rich descriptions common to pragmatic qualitative research as individuals' behaviours, perspectives, opinions and emotions are explored (Auta et al., 2017; Chowdhury, 2019). Eventually this opens the door for descriptive data as researchers venture into actions of discovery, complex understanding and meaning making (Kostere & Kostere, 2021). Furthermore, qualitative research opens the empirical knowledge field for what Guba and Lincoln (1994) refer to as 'creative and divergent thinkers'.

Generally, qualitative research is known by certain characteristics. Among these are:

- The researcher is regarded as the primary instrument for data analysis and collection (Merriam, 2002; Shah & Al-Bargi, 2013);
- The process is inductive, thus data is gathered to build or develop themes, concepts or theories (Merriam, 2002; Mukherji & Albon, 2018);
- The focus is on research in a naturalistic setting (Mukherji & Albon, 2018);
- Diverse viewpoints are acknowledged (Mukherji & Albon, 2018);
- Participants' meanings are collected (Creswell, 2009);
- Personal values are brought into the study (Creswell, 2009); and

- An agenda for change or reform is created (Creswell, 2009).

If the nature of the research question is to gain a better understanding of a particular phenomenon and uncover the meanings of those involved, qualitive designs are most suited (Merriam, 2002). It is also striking the balance between the complex and the simple (Chenail, 1995). What follows is an overview of the pragmatic qualitative approach including definitions, descriptions and a justification for the choice of this particular approach.

4.4.2 PRAGMATIC QUALITATIVE RESEARCH

Pragmatic qualitative research is first and foremost rooted in naturalistic inquiry (Turale, 2020). The term pragmatic signals its philosophical origin, as it aim towards practicality and a sensible approach to research (Savin-Baden & Howell Major, 2013). It is undertaken when a researcher desires a unique approach to understanding a phenomenon and/or the topic at hand requires a more practical approach leading to practical (in practice) results or solutions and approaches such as grounded theory, case study research, ethnography, a narrative study and phenomenology, do not suffice when examining the particular research topic within a specific or multiple settings (Sandelowski, 2000; Savin-Baden & Howell Major, 2013).

First and foremost, it is important to note that pragmatism and pragmatic qualitative research are not synonymous. Pragmatism is regarded as a philosophy, whereas pragmatic qualitative research is seen as a research approach. It draws on the most sensible and practical methods available to the researcher to answer the research question (Savin-Baden & Howell Major, 2013) as it is linked to the practice disciplines (Sandelowski, 2000). In 2000, Sandelowski made a call to give clear and comprehensive methodological descriptions of *qualitative description* (as she refers to the approach). She identified the lack and equal standing with other qualitative designs in literature, although it is one of the most frequently employed approaches, especially in the practical disciplines.

An article by Thorne et al. (1997) highlighted a gradual shift in nursing research where researchers started to 'push' past the limits of traditional methods. Researchers were implored to explore new methods that are grounded in the discipline's unique

epistemological foundations. Similarly, education as a practice science should "… adhere to the systematic reasoning of our own discipline, and yield legitimate knowledge for our practice" (Thorne et al., 1997, p.172). Many qualitative studies simply seek to discover and uncover a phenomenon, process or the worldviews of the people involved (Merriam, 1998). When the objectives have been made clear and none of the traditional methodologies fully fit the study, the pragmatic qualitative approach can be used to form the research design (Liu, 2016). This, however, requires the researcher to have a high tolerance for ambiguity as there are no procedures or protocols that he/she can follow step-by-step. Flexibility is essential as it allows the researcher to adapt the study due to unforeseen events should the need arise (Merriam, 1998).

4.4.2.1   Definitions

As mentioned earlier in this chapter, pragmatic qualitative researchers have been coined differently by various researchers. In short Caelli et al. (2003, p.9) defines it as "…that that which is not guided by an explicit or established set of philosophic assumptions in the form of one of the known qualitative methodologies". Elsewhere, it is defined more broadly by Kostere and Kostere (2021, p.3) as "…a methodology that seeks to understand human experience by taking a qualitative stance and using qualitative procedures".

Savin-Baden and Howell Major (2013) centre pragmatic qualitative research within a continuum between the objective *basic/fundamental/generic/qualitative description* of Merriam (1998) and Sandelowski (2000) and the subjective *interpretive description* of Thorne et al. (1997). In their words: "Pragmatic qualitative research marks the meeting point of description and interpretation, in which description involves presentation of facts, feelings and experiences, in the everyday life of participants as interpreted by the researcher" (Thorne et al., 1997, p.172).

4.4.2.2   Overview

When embarking on a pragmatic qualitative study, the researcher aspires to gain deeper understanding of a phenomenon, process and the perspectives and worldviews of the individuals involved in the study (Merriam, 2002). In light of the aforementioned,

Kostere and Kostere (2021) provide researchers with three guiding questions when considering a pragmatic qualitative approach for their study. These are *(i) Does your research question seek an understanding of human experience? (ii) Are you using qualitative procedures? (iii) Is your research design consistent with a qualitative stance?* (p. 3)

According to Savin-Baden and Howell Major (2013, p.176) pragmatic qualitative studies are known by:

- a research topic that is practical in nature and often related to practice;
- the unit of analysis is usually individuals, processes, or structures; and
- the literature review is comprehensive and all inclusive.

In her original article, Sandelowski (2000) gave a basic framework which highlighted key characteristics when employing this particular design. This included staying closer to the data and to the surface of words and events where "…language is a vehicle of communication" (Sandelowski, 2000, p.336). Furthermore, techniques are used where the phenomenon under study is studied as far as possible in its natural state. In addition, the event is not highly interpretive in the sense that it is described in terms of a conceptual, philosophical, or other abstract framework. Instead, everyday language is used to give account of the phenomenon.

Caelli et al. (2003) identified four key areas that pragmatic qualitative research should address to be considered credible. Firstly, researchers need to be aware of and communicate their *theoretical positioning*. This includes making explicit their motives, presuppositions, assumptions and the history that led to the research question being explored. Secondly, the *methodology and methods* need to be *congruent*. The onus rests on the researcher to clearly and meticulously communicate the methodological design, including how data were collected, analysed and how findings were reported. Thirdly, the researcher needs to utilise strategies to establish rigour. This can be achieved by selecting and articulating an approach that is theoretically informed and methodologically congruent with their inquiry. Lastly, the researcher needs to be cognisant of his/her *analytic lens* as the interpretive and methodologic presuppositions they bring have a direct influence on how they engage with the data.

Lastly, pragmatic qualitative research does not require philosophical orthodoxy – the researcher attempts to remain philosophically neutral (a-paradigmatic). A theoretical framework may be selected as a complementary approach, as suggested by Merriam (1998); however, the researcher has the freedom to mix and match approaches that are fitting to answer the research question (Savin-Baden & Howell Major, 2013).

4.4.2.3   Why a pragmatic qualitative design?

Recent times have placed new demands on qualitative researchers when it comes to gaining access to collect data in real-life contexts, especially schools. As a full-time teacher, my prerogative was (and is) to do research that would meaningfully contribute at ground level and to find practical solutions to real-time educational problems. Initially the design would have been an instrumental case study (Mukherji & Albon, 2018); however, due to lockdown restrictions, this had to be altered and the process of data collection moved entirely online.

Sandelowski (2000) raised a valid point when she critiqued researchers who claimed designs because they sounded more desirable in order to make them more acceptable in the research community. Similarly, Lambert and Lambert (2012) state that novice researchers frequently have to defend their research approach by giving it 'epistemological credibility', whilst (Caelli et al., 2003) argue that researchers claim qualitative approaches, however, they lack 'methodological depth'. Probert (2006) gives an account of her struggle and journey of discovery and exploration into finding a 'suitable approach' for her study. Her conclusion was that after delving into the various traditional qualitative designs, she could not find one best suited for her study. The researcher can therefore not claim, with a clear conscience, that a case study research design was employed, as the inherent requirements of this qualitative approach was not met (Lambert & Lambert, 2012).

Finally, qualitative methods have been linked to interventions where they provide the researcher with a rich and deep understanding of the contexts in which they are accessed by the research participants (Yardley et al., 2021). Additionally, the development of interventions have been linked to a qualitative pragmatic approach (Turale, 2020).

4.5 RESEARCH METHODOLOGY

Egbert and Sanden (2014, p.74) define methodology as "… a reasonable plan for gathering and analyzing information that responds to a line of research inquiry". Elsewhere it is defined by Chowdhury (2019, p.106) as "…the 'design' of a particular study, the 'plan of action' for research". In my own view, the methodology is the golden thread that clearly links the purpose, objectives, research question(s), epistemological stance of the researcher, the research design, methods of the study and finally, how the findings would be communicated. It also plays a key role in the process of knowledge production (Chowdhury, 2019).

Within a qualitative pragmatic design, the researcher has the freedom to select from numerous theoretical frameworks, sampling strategies, and data collection techniques (Colorafi Jiggins & Evans, 2016). The researcher, however, is obliged to ensure that the methodology, methods and epistemology are internally consistent and ought to keep a firm grasp on the decisions made regarding these whilst remaining flexible. This will ensure that the methods employed evolve naturally as the study progresses (Carter & Little, 2007).

4.5.1 SELECTING PARTICIPANTS (SAMPLE)

When a pragmatic qualitative research design forms the framework of the study, virtually any sampling technique is acceptable (Colorafi Jiggins & Evans, 2016). It is done to gain perspectives of a variety of participants that are demographically diverse (Savin-Baden & Howell Major, 2013). It is crucial however, that the researcher aims to achieve maximum representativity to highlight various elements of the phenomenon under study and avoid misrepresentation thereof (Johnson & Christensen, 2014; Thorne et al., 1997).

Volunteer sampling, also known as self-selected sampling (Mukherji & Albon, 2018), is traditionally known as a non-probability sampling technique where the participants of the sample self-select themselves to partake in the study. Participants are told about the study through advertisements and if participants are interested, they contact the researcher (Alvi, 2016; Mukherji & Albon, 2018). When making decisions about the process of sampling, the researcher should also take into account settings, events and

social processes. When conducting a qualitative study, parameters can be redrawn and/or refocused as the study progresses (Miles et al., 2020).

The study was conducted in the Western Cape province of South Africa. The study area was initially delineated to include public high- or combined schools in the Metro East (60 schools), Cape Winelands (60 schools) and Metro North (55 schools) education districts (as per the official WCED website). Due to a low response rate, a decision was made by the researcher to invite all teachers who teach at public or private high- or combined schools within all the education districts in the Western Cape Province. A total of 474 schools were contacted to obtain the email address of the school principal, vice-principal, teacher or other staff members responsible for the professional development at the particular school. An advertisement (invitation to participate) (Addendum A) was sent to these individuals; however, the researcher could not guarantee that the advert was passed on to the staff at the school.

An email was sent to the corresponding school contact, as mentioned earlier, wherein they were asked to forward the advert including the consent to participate (Addendum B) and the WCED research approval letter (Addendum C) to the grade 8-11 teachers at the school. The advert sent to teachers invited them to voluntarily undergo a free two-hour online training session titled: *Laying Foundations and Breaking Barriers: The Altered Flipped Pedagogy* before attempting to implement the intervention in their classrooms. A hyperlink was imbedded on page two of the advert that directed teachers to register online via a Microsoft form (Addendum D). Once the researcher received proof of registration, the participants were emailed a link to the scheduled session via the Microsoft TEAMS platform.

4.5.1.1   Research participants

Research included in-service teachers who currently teach grades 8-11 in any subject area at a public/private high/combined school within the Western Cape Province. The participants should have had no/limited prior experience of implementing the FCP in their classrooms. They should also have been interested in undergoing training to discover an alternative pedagogic approach to predominantly relying on teacher-centred instruction. The sample did not limit participation on any characteristics (such

as age, gender, ethnicity). Participants did not receive any inducement to participate in the study.

Schools were contacted once the Research Approval letter was obtained from the WCED (12 August 2021). After contacting the schools, an email was sent (Addendum E) with the invitation to participate, the official teacher consent letter as well as the WCED Research Approval letter attached to the email.

Nine online sessions were conducted between the 25th of August 2021 and the 16th of September 2021. These were held on 25, 28, 31 August and 2, 8, 11, 14, 15, 16 September 2021 via the Microsoft Teams platform. Sessions were held on different afternoons during the week as well as Saturday mornings to accommodate teachers who might have activities after school. Of the nine sessions, five were presented in Afrikaans and four in English.

Once teachers had registered, attended the online training, completed the post-evaluation form, and indicated that they wanted to continue with the study, they became the frame of the study. A total of 54 teachers registered for the online training sessions. Of these, 31 attended their scheduled session. At the end of the session, an email was sent to the teachers with a link to a post-session evaluation/feedback Microsoft form (Addendum F). Of the 31 who attended the online training, 21 completed the post-evaluation form. Based on the post-evaluation form, 14 teachers indicated that they wanted to continue with the research process. After reaching out to these 14 teachers, ten school principals were contacted to obtain consent (Addendum G & H). Two did not give consent for the research to continue at their respective schools.

4.5.2 DATA COLLECTION METHODS

Fieldwork is considered the process of collecting raw data from natural settings. It is taken up by researchers because of its capacity to yield information about individuals and phenomena in the social world. The choices that researchers make, set parameters that ultimately frame what they will discover, which include decisions regarding time, space and the participants that are selected to participate in the study (Savin-Baden & Howell Major, 2013). This holds particularly true when data are to be collected during a World-wide pandemic and as the researcher needed to be cognisant

of the health and safety of the research participants, as well as her own. The researcher decided to, hypothetically speaking, 'enter the field' and collect the data for the study during the 3rd term of 2021, according to the South African school calendar. In Term 3, learners (Grades 8-11) do not write exams and during the 4th term, the Western Cape Department of Education prohibits research in schools.

Methods are defined as "… the specific procedures that accomplish the task of gathering and analyzing the data in a research study" (Egbert & Sanden, 2014, p.74). Chowdhury (2019, p.106) defines it as "… the specific tools or instruments for collecting data". When conducting a qualitative study, researchers are inclined to collect data that will accurately capture various elements of a phenomenon to display, as far possible, its fundamental constituents. This includes the 'who', 'what', 'where" of the phenomenon as well as participant experiences (Sandelowski, 2000). The researcher employed non-statistical methods to reveal patterns in the data, which ultimately provided greater depth of the phenomenon under study (Mukherji & Albon, 2018). These methods were also valuable to provide rich insight into participants' behaviour (Guba and Lincoln, 1994).

When conducting a pragmatic qualitative study, the researcher has a unique duty to provide information about the methods employed and a rationale for using these (Savin-Baden & Howell Major, 2013). According to Merriam (2002), there are three major sources of data collection, interviews, observations and documents. She continues by emphasising the influence of the research question on the selection of methods as these ought to provide the researcher with the 'best information' to answer the question of the study (Merriam, 2002, p.12). The methods used for data collection determine the quality of the data, the meaning that we uncover and finally the claims to be made (Suzuki et al., 2007). What follows is a short overview of the four methods used to obtain the data for this multi-method study, namely research diaries, semi-structured interviews, extensive feedback on the online training and spontaneous response via email.

4.5.2.1 Research diaries

Research diaries are a valuable source to collect in-depth qualitative data that can range from exploratory to theory-building research and enable researchers to gain

entry to places that they cannot necessarily access (for example, individual's homes, minds or geographically dispersed locations) (Sheble et al., 2017). Participants are actively engaged in identifying, selecting and recording data of their individual points of view (Sheble et al., 2017) that reflect a (subjective) account of their experiences, thoughts, opinions and feelings and ultimately their lived experiences (Alamri, 2019; Filep et al., 2017; Jacelon & Imperio, 2005; Ortlipp, 2008). These experiences then translate into a more in-depth understanding of the social, psychological and physiological process within the everyday situations where the phenomenon under study unfolds (Bolger et al., 2003). In light of the aforementioned, diaries are characterised by introspection as they provide the researcher with insider meaning (Alamri, 2019, p.67).

Simply defined, "…diaries are used as research instruments to collect detailed information about behaviour, events and other aspects of individuals' daily lives" (Corti, 1993, p.1). Diary methods are used alongside other methods of data collection such as interviews or questionnaires to support the process of triangulation (Sheble et al., 2017) and are preferable when conducting a study within the social sciences (Alamri, 2019). Once again, Duke (2012) emphasises the importance of carefully aligning the purpose of the research diary with other data collection methods and the appropriateness thereof to the research setting and the research participants.

Within this study, the participants completed a semi-structured solicited diary (Sheble et al., 2017) where questions or reflections were guided by the interests of the researcher. Solicited diaries provide opportunities for research participants to, chronologically and unobtrusively, keep a record of everyday life events and/or reflect on significant predetermined events (Snowden, 2015). Participants write in their diaries knowing that the diary will be read by another (Jacelon & Imperio, 2005). Bolger et al. (2003) distinguished between diaries with different purposes in mind, one having an event-contingent strategy where research participants have to report each time the event in question (in this study the intervention) occurs. This allows to capture rare and specialised occurrences as these research diaries serve the purpose of providing in-depth accounts of specific and often rare phenomena (Bolger et al., 2003). Diaries do not have to be longitudinal in nature and can reach over one to three days to collect 'time-use data' (Corti, 1993 p. 2).

The researcher gave participants the option to keep a solicited research diary (question within the post-evaluation form) when implementing the altered flipped pedagogy. They were asked to implement the altered flipped pedagogy over three lessons (not necessarily chronologically nor the same class) and record their experience. The researcher provided them with a clear outline as to what is required of them regarding the nature and purpose of this research activity (Morrison, 2012) to give them a general point of departure. The diary protocol or outline consisted of three to four questions (Addendum I) and included a question for a general reflection at the end of the third event, as suggested by Corti (1993), as these may prove helpful when coding or analysing the data. Of the ten participants who indicated that they would keep a research diary, only two returned their completed research diaries.

When employed correctly, research diaries can generate valuable qualitative data for the study as they are less intimidating than an interview, focus groups or being observed by a researcher. They also provide an alternative to report immediately, or shortly after, an event without a time-laps that may influence their ability to accurately recall their experience. They can also supplement interview data and help participants overcome the challenges associated when collecting personal or sensitive data (Corti, 1993). Furthermore, diaries are flexible as participants can record their experiences at a time that is convenient to them (Snowden, 2015). Bias is limited as the self-report instrument provides them with opportunities to capture the data close to when the event occurs (Alamri, 2019), making findings more accurate, relevant and valid (Snowden, 2015). It also enables the researcher to identify patterns as behaviours and experiences are recorded over time (Snowden, 2015).

Using a diary for collecting qualitative data is not without its limitations. Firstly, a diary does not assure that entries will be reflective in nature. When researchers therefore structure the diary outline, they should be cognisant that the questions they ask encourage participants to go beyond merely outlining events (Mukherji & Albon, 2018). This help participants to guard against overgeneralising events based responses to their general experiences (Bolger et al., 2003). Diaries also demand a higher level of commitment and dedication from participants as a lack thereof may compromise the reliability and validity of the data. In addition, repeated queries and responses may burden participants (Bolger et al., 2003). This may ultimately lead to fatigue and as

participants become weary, completion or recording may be directly affected (for example, underreporting or inadequate recall) (Corti, 1993; Sheble et al., 2017; Snowden, 2015). It is suggested that researchers design diary instruments that are short and do not take long to complete; however, one still does not want to induce a shallow or narrow response (Bolger et al., 2003). Lastly, social desirability biases may invalidate data collected via diaries as participants may communicate the event more positively in their account than what occurred in reality (Alamri, 2019; Snowden, 2015).

4.5.2.2 Online interviews

The interview is well-known for its prominence when undertaking a qualitative study (Kostere & Kostere, 2021; Punch & Oancea, 2014). As a qualitative method, it is used to explore participants' perceptions, how they define and interpret situations and ultimately construct reality (Punch & Oancea, 2014) by freely sharing their perspectives and experiences (Savin-Baden & Howell Major, 2013). Due to their flexible nature, participants often reveal more about themselves through expressing their subjective opinions and experiences thereby enriching the qualitative data (Alamri, 2019).

Interviews are defined as: "…a method where one person ask questions of an individual… with the expectation of getting answers to a particular question or an elaboration of their views" (Mukherji & Albon, 2018, p.238). Qualitative interviews are also called *depth interviews* as they elicit extensive information regarding the thoughts, beliefs, knowledge, reasoning and feelings that a participant holds towards a phenomenon (Johnson & Christensen, 2014). The flexible nature of the interview helps participants to reveal more about themselves, which then adds to the richness of the data. The interviewer is also in the position to follow up on ideas, opinions and responses, which other methods do not necessarily allow for (Alamri, 2019).

When conducting interviews, researchers should be cognisant of the procedures to follow when establishing rapport, their behaviour (especially regarding responses) as well as their responsibilities and roles. This includes being impartial, avoiding non-verbal signals, avoid speaking too much and observing the participants during the interviews (body language and gestures). If the researcher does not remain as neutral and objective as possible, the responses may become biased (Alamri, 2019; Barrett & Twycross, 2018; Johnson & Christensen, 2014; Savin-Baden & Howell Major, 2013).

Johnson and Christensen (2014, p.229) suggest that the researcher establish rapport, remain neutral, make use of nonverbal cues to show interest, make sure the interviewee is doing most of the talking and use probes and follow up questions to gain greater quality and depth.

In line with the qualitative pragmatic research design (Kostere & Kostere, 2021; Neergaard et al., 2009), the researcher conducted semi-structured interviews with open-ended questions. Semi-structured interviews provide some form of standardisation as the same questions are asked to all participants (Johnson & Christensen, 2014; Mukherji & Albon, 2018); however, the researcher has the freedom to use probes and/or additional questions based on the individual response or reaction of the participant (Savin-Baden & Howell Major, 2013) elsewhere known as 'topical trajectories' (Ricci et al., 2019). In line with Nguyen et al. (2016), the interview protocol began with introductory questions to cover participant demographics. This was followed by specific questions exploring different aspects or concepts as they related to the primary and secondary research questions guiding the study.

As mentioned earlier, the COVID-19 pandemic necessitated a change in how qualitative researchers go about collecting data. Face-to-face encounters became minimised in social and economic spheres and with constraints placed on travelling, researchers resorted to online platforms to continue with their research activities. This initiated the rise of a new era where traditional routines and rituals had to be reconsidered, re-examined and often re-theorised to represent new research opportunities that are applicable to virtual settings (de Villiers et al., 2021). For example, in July 2021, Microsoft announced that their users exceeded the 250 million mark (Foley, 2021). Online interviews do have advantages such as access to geographically remote participants, cost effectiveness and time effectiveness. It is also favoured over telephone calls as the researcher can view and respond to nonverbal cues to establish rapport, facilitate engagement and promote a natural relaxed conversation (Archibald et al., 2019).

Video interviews are defined as "…qualitative research interviews conducted using online video communication technologies, including hardware (such as computers and smart phones) and software (such as Skype, Zoom and WhatsApp), which allow the interviewer and interviewee to see (video) and talk (audio) to each other in real-time,

that is, 'live'" (de Villiers et al., 2021). Within the teaching profession, the move to online teaching and learning platforms compelled, amongst others, teachers to acquire affordable high-speed internet, smart phones and personal computers to continue with their daily activities from the safety of their homes (de Villiers et al., 2021).

Whilst completing the post-training online questionnaire, participants were given the opportunity to indicate whether they would like to participate in an online interview based on their experience when implementing the AFCP. The researcher then contacted the participants who consented via email to arrange a suitable time and date for the interview. Once finalised, an online invitation was sent via the Microsoft TEAMS platform which included a hyperlink for the online interview (Addendum J).

An interview protocol was designed that consists of nine open-ended questions (Addendum K). Six interviews were originally conducted with teachers who fell within the scope of the study. One teacher contacted the researcher one day after completing the interview and asked to withdraw from the study due to personal reasons. Five interviews ranging from approximately 50 to 78 minutes were used for thematic analysis. One interview was conducted in Afrikaans, two in English and two were combined Afrikaans/English. The researcher made use of the automatically generated Microsoft TEAMS interview transcripts; however, with the Afrikaans interviews this proved to be difficult, as these had to be transcribed verbatim.

A study by Deakin and Wakefield (2014) found that online interviews can produce data as reliable and in-depth as face-to-face interviews. They continued by highlighting that online interviews give researchers access to participants in remote areas that might otherwise be difficult to reach or unsafe to travel to. Online interviews also provide researchers and participants who are employed full-time, with greater flexibility as interviews can take place after school hours or at night-time. The recording of the interview makes it easy for the researcher to revisit the data which helps when transcribing, coding and analysing the data. The researcher is able to explain or clarify questions, which increase the accuracy of the collected data whilst the participant has the opportunity to clarify and/or elaborate their answers (Alamri, 2019). Moreover, the live feed helps to surmount issues regarding physical locality as neither the researcher nor the participant impose on one another's personal space (Hanna, 2012).

4.5.2.3   Feedback questionnaire

The flexible nature of qualitative research enables researchers to make the necessary changes to answer the research question(s) (Hanson et al., 2011). Within this study, the researcher introduced a 'feedback questionnaire' as some participants valued the approach but could not continue with the research process due to (i) time constraints or (ii) the school principal denying consent to implement the intervention. The feedback questionnaire provided participants with the opportunity to contribute to the research by reflecting on the online training and evaluating the possibilities of the intervention to counter the passive learning phenomenon.

In the words of Thorne (1997, p.174), "…the judicious application of a range of data sources can add considerable strength to the usual data sources of interviews and observations for the purposes of generating practice knowledge". Ideally, the feedback questionnaire served as a secondary source with questions being similar to the ones outlined in the interview protocol. Once again, it is necessary to reiterate the importance of the questions to align with key constructs as identified with prior research when conducting the literature review (Gehlbach et al., 2010). Of note, is this specific questionnaire could be considered innovative, as a study by Ricci et al. (2019) found that emergent methodologies (specifically related to questionnaire development) were uncommon.

Unstandardised questionnaires were used encompassing well-defined open-ended questions. This required of participants to formulate answers unique to their experience and the context wherein they teach (Sarantakos, 2013). Open-ended questions are valuable as researchers can utilise them to gain a rich picture of the phenomenon under study through the personal insights, perspectives and authentic voices of the participants, ultimately shedding new light on how the phenomenon is interpreted (Hanson et al., 2011; Newby, 2014).

Although the questionnaire was kept short, it included a variety of questions covering various aspects such as factual knowledge (gender, age, experience), schemata and mental modes (applying one set of knowledge to another) and implementation of ideas (where questions move beyond knowledge) (Newby, 2014). In the process of developing the content of a questionnaire, researchers should take heed of the

guidelines provided by Newby (2014), such as not introducing more than one idea into a question, being cognisant of context and avoiding questions that may elicit a biased response. Sarantakos (2013) highlights the importance of listing questions logically which allows for flow in the questionnaire and that questions should be related, interesting and relevant to the topic. In his words "…one should include as many questions as necessary and as few as possible" (Sarantakos, 2013, p.253), and that these should be subjected to external scrutiny. The feedback questionnaire (Addendum L) was sent for review to the researcher's supervisor for revision before distributing it to the research participants.

4.5.2.4   Spontaneous response

As mentioned in the previous section, the design of a qualitative study is 'emergent and flexible' and "…responsive to changing conditions of the study in progress" (Merriam, 1998, p.8). This section, *spontaneous response*, exemplifies the words of Merriam in the very sense of the word. One of the teachers who attended the online training wrote a comprehensive email (narrative reflection) on her experience in the education sector and the relevance of the content covered during the training session. A follow-up email was sent three weeks later to the participant to inquire as to whether she has implemented the intervention in her class. Once again, the response was an extensive narrative on her experience after implementing the *Altered Flipped Pedagogy* in her classroom.

The participant mentioned above was initially excluded as she fell outside the sample of the study (a grade 7 teacher). However, due to the nature of qualitative research, researchers have the privilege of adapting and accommodating change and employ various documents as to answer the research question (Flick, 2018; Hanson et al., 2011). Her two emailed responses (Addendum M) depict a key of qualitative research - to understand the phenomenon from the research participant's point of view also referred to as 'the emic or insider's perspective' (Merriam, 1998). This is obtained when participants share the meaning or insight they ascribe to the phenomena of interest (Hanson et al., 2011; Maliski & Litwin, 2007) as it occur naturally within their context or everyday lives (Flick, 2018; Guba, 1987). Moreover, it can be used to verify findings or corroborate the findings from the other data sources (Bowen, 2009).

One disadvantage of this data source is that unsolicited comments can be more challenging to analyse as they were not purposefully collected by the researcher (Maliski & Litwin, 2007). Researchers should therefore take care to carefully integrate them with other data sources (Suzuki et al., 2007). Bowen (2009) also suggests that they should be viewed with a critical eye to establish meaning and contribution to the phenomenon under study.

Having various and unique data sources in a study enables the researcher to gain deeper insight and complex understanding of the phenomenon of interest (Suzuki et al., 2007). The process of data collection is first and foremost an intentional one as the researcher seek to uncover the depth and width of the phenomenon under study, whilst navigating through a variety of meanings, histories, interests, motivations and situational conditions (Suzuki et al., 2007).

4.6   DATA ANALYSIS

In short, data analysis refers to the process of knowledge production that involves the separation of elements through a break up or break down of the data (Sandelowski, 1995). It is considered an on-going, emerging and non-linear process involving a variety of actions on the part of the researcher (Smit, 2002). It is also a highly analytical process which is influenced by choices regarding the theoretical lens used to approach the phenomenon under study, the strategies employed to collect the data, as well as the data selected to answer the research question (Thorne, 2000). Within qualitative pragmatic research, a pre-existing set of rules is not used to guide the process of analysis. It is purely data-derived and codes are generated from the data as the study progresses (Lambert & Lambert, 2012).

Qualitative pragmatic research follows an inductive approach to data analysis. Key concepts are developed inductively from the data before moving to a higher level of abstraction and capturing the interrelationships between the emergent themes, categories and sub-categories (Punch, 2014). Furthermore, the researcher has to familiarise her/himself with the data and apply reasoning skills (Kostere & Kostere, 2021). The process can briefly be captured in the following steps: (i) prepare the data for analysis; (ii) explore the data; (iii) analyse the data; (iv) represent the analysed data;

(v) interpret the results and (vi) validate the data and the results (Creswell & Plano Clark, 2011).

4.6.1 ATLAS.TI 22

Within this study, ATLAS.ti Windows (Version 22.0.6.0) was used to assist with the process of data analysis. ATLAS.ti is a Computer Assisted Qualitative Data Analysis Software (CAQDAS) designed to assist qualitative researchers when embarking on the analysis phase of their study. It has been used across a variety of fields including education (Soratto et al., 2020) and is considered beneficial especially for large quantities of data such as interviews and open-ended questionnaires (Smit, 2002).

Computer-assisted qualitative data analysis consists of various consecutive phases which includes preparing the data, creating a project file, coding the data and structuring the data according to the themes and patterns to be reported (Friese, 2019). The program also make provision for researchers to capture their analytic thoughts and idea via memos (Friese, 2019) and an option to create networks (*cf.* 5.4) which allows the researcher to visually connect the data. CAQDAS has been advocated for improved quality for its function to manage large quantities of data, improve the rigour of the study and enhance the trustworthiness of the study due to the ability to create a transparent audit trail (Paulus et al., 2017).

4.6.2 THEMATIC ANALYSIS

Within this study, thematic analysis (TA) was used to analyse the data. TA is considered a method to identify, analyse and report themes and categories within qualitative datasets (Braun & Clarke, 2006) which are central to understanding the phenomenon under study (Al-Zahrani, 2015). TA is not bound to a particular epistemological or theoretical perspective, making it a flexible method, appropriate to the realm of teaching and learning (Maguire & Delahunt, 2017). TA can be used to identify patterns within and across data including the participants' lived experiences, perspectives, behaviour and aims to understand what participants think, feel and do (Clarke & Braun, 2017). A study by Xu and Zammit (2020) has used TA to analyse qualitative data in the natural classroom setting, which highlights the applicability of the

method for educational research. What follows, is a discussion of the six phases of TA according to Braun and Clarke (2006).

4.6.2.1 Phase 1: Familiarising yourself with the data

The first phase includes transcribing, reading and re-reading the data, which simply refers to converting data into word processing documents (Smit, 2002). Preparing the online interviews for analysis was a timeous process. The Microsoft Teams platform has a transcription function; however, the researcher had to revise and edit the transcriptions due to their high levels of inaccuracy. Moreover, one of the interviews was conducted in Afrikaans and another was a combination of Afrikaans and English thereby necessitating the careful transcription on the part of the researcher. The researcher had to check the transcripts against the recording a second time to ensure that an accurate account of the data was captured, which is considered a central feature in transcription procedure (Flick, 2018). Due to the complexity of human interaction, transcription requires data reduction and characterisation. This includes making decisions about the level of detail to be included in the transcripts (Savin-Baden & Howell Major, 2013). Having worked through the transcripts meticulously assisted the researcher with familiarising herself with the data before starting with the first level of coding. Data immersion is seen as one of the key actions of the first step in TA and includes repeated reading of the whole data set (Braun & Clarke, 2006; Nowell et al., 2017). It serves as a preliminary analysis which assists the researcher in developing an understanding of the whole in order to ensure a consistent approach to the next phase of analysis (Sandelowski, 1995).

4.6.2.2 Phase 2: Generating initial codes

Within phase two, the researcher embarks on the process of coding, giving full attention to each data item whilst identifying aspects that may form themes. Codes become the building blocks of themes, which eventually become the framework for organising and reporting the researcher's analytic observations (Braun & Clarke, 2006; Clarke & Braun, 2017). The data needs to be taken apart to make sense of and interpret what is being said by the participants (Smit, 2002) and to simplify and focus on certain characteristics of the data (Nowell et al., 2017). Codes are defined as "…labels that assign symbolic meaning to the descriptive or inferential information

compiled during a study" (Miles et al., 2020, p.62). They continue by stating that codes are assigned to detect recurring patterns in the data, and from these, similar codes are clustered together to form categories. Codes should also show a coherent relationship between one another as they become part of a unified structure.

During open coding, the researcher names and categorises the phenomena under study through close examination of the data and by breaking it into discrete parts (Smit, 2002). This process allows researchers to explore the hidden ideas and meaning of their datasets before moving to axial coding (DeCuir-Gunby et al., 2011). Moving to a deeper level of analysis, axial coding is used to establish connections between codes in new ways to form connections between the categories and reveal their inherent relationship (DeCuir-Gunby et al., 2011; Smit, 2002). Labelling codes are predominantly influenced by one's research questions, ideas, the topic under study, phrases, key words and the nature of the study (Elliott, 2018; Savin-Baden & Howell Major, 2013; Walliman, 2011). In the process of coding, the researcher should however heed not to lose the richness, breadth and depth of the data (Chenail, 1995), and retain accounts that may differ from the dominant line of thought (Braun & Clarke, 2006).

Memoing is considered a basic operation of qualitative analysis and runs hand in hand with the coding process. Memos can be substantive, theoretical, methodological or personal in nature and may assist the researcher with the discovery of new patterns or higher levels of coding, with their main purpose being to move the researcher from the empirical to the conceptual level (Punch, 2014). Smit (2002) highlights the advantage of memoing to capture reflective notes whilst coding the data. Referring to interviews, Sandelowski (1995) suggests writing a brief abstract and a summary of the distinct features of the interview which may include reflections on its theoretical, discursive and nondiscursive features as this may probe further analysis.

Within this study, the interview transcripts, feedback questionnaires, research diaries and spontaneous responses were transferred to ATLAS.ti (version 22) before embarking on the second phase of TA. In line with Sandelowski, the researcher created a memo for each interview that was analysed (see example Addendum N), as well as a collective memo for the research diaries, feedback questionnaires and spontaneous response. The purpose of these memos was to engage in a higher level of analysis by asking critical questions within and across the datasets. Similarities and differences in

the data were questioned and codes were critically reviewed and adjusted as themes and categories started to emerge. Parallel to this process, the researcher created a separate memo to capture the actions taken during the coding process (Addendum O) as the data analysis progressed from one phase to the next.

4.6.2.3   Phase 3: Searching for themes

Moving into the next phase, a refocusing occurs at a broader level of themes as codes are collated. Consideration is given to how different codes can be combined to form a novel overarching theme (Braun & Clarke, 2006). This process, referred to by Miles et al. (2020) as data condensation, encompasses the process of sharpening, focusing, abstracting, sorting and organising the data in order to draw and verify preliminary conclusions. Pattern coding is a common method utilised by researchers to achieve data condensation. It is briefly defined as "…inferential or explanatory codes, ones that identify a 'bigger picture' configuration" (Miles et al., 2020, p.79). Data are reduced into smaller units which allows for a more complex understanding of the data and to review the data in line with the primary and secondary research questions (Walliman, 2011).

When embarking on this phase of the analysis, the researcher began the process by dividing the codes in three main themes, that is, Teachers, Learners and Systemic/Other. The categories and number of codes captured in the memo were as follow: Advantages: 76; Challenges: 33; Ed Value: 31; Future use: 18; Implement: 46; Other: 80; OTS: 23; R_Comment: 26; T_Background: 28; T_Demo: 43; T: Implement: 51; Teacher def: 16; Training: 2.

4.6.2.4   Phase 4: Reviewing themes

Phase 4 encompasses a back-and-forth review of the preliminary themes to refine them. This process reveals whether the candidate themes have enough data to support them. If that is not the case, they might have to be combined with a similar theme. Moreover, if the theme is too diverse and/or extensive, it may have to be broken down further into separate themes. The data within the themes should nonetheless form a meaningful and coherent whole; however, there should be clear distinguishable distinctions between themes. From there, the researcher has to consider the validity of the themes in relation to the entire data set to ensure accurate representation (Braun

& Clarke, 2006). Because coding is essentially a circular process, the researcher may have to re-code where necessary (DeCuir-Gunby et al., 2011).

Within this phase of the study, the codes were divided into three themes, that is, Teacher, Learner and Other. Thereafter, sub-themes were created within each theme:

- Teacher: advantages, challenges, control, emotional, pedagogy, teacher efficacy, teacher role;
- Learner: autonomy, cognitive, learner positive, learner negative, learning, skills, other
- Other: Neuroeducation, SDT, Pillar FLIP, Systemic or external factors

After these themes were captured, certain changes were made. For example, the theme *Other* was divided into two themes; *Systemic/ External factors* & *Theoretical Frame and concepts*. Both were considered themes in their own right due to their individual and unique contribution to represent a certain aspect of the passive learning phenomenon. The researcher also came to the realisation that there was an overlapping of some sub-themes. These were not true sub-themes but rather categories of more prominent sub-themes. One example is *Cognitive* which became a category of *Learner positive*. Another example is *Learning* which was initially considered a sub-theme. With only ten codes, it was collapsed as a category under the sub-theme *Learner positive*, the rationale being that improved learning is seen as an advantage or outcome for the learner when the AFCP is implemented.

4.6.2.5   Phase 5: Defining and naming themes

At this point, the themes which were to be presented for analysis, are refined. The researcher has to identify the essence of what each theme is about and should take care that the themes are not to diverse or complex. Care should be taken that the content of the data is not only paraphrased, but that one accurately captures what is of interest regarding the specific theme. It is also important to consider how each theme is positioned in the broader sense of the 'story' being told about the data. Although the themes have working titles, these must be reviewed before the researcher embarks on the last phase of analysis. The names of the themes have to be concise and give the reader a good indication as to what the theme is about (Braun & Clarke, 2006).

Primary changes made during this phase of the study included the labelling of two of the themes. As mentioned at the end of the previous section, the theme *Other* was divided into two themes. Three sub-themes were arranged under the theme *Systemic/ External factors*; namely, Curriculum, Education System and School context. *Theoretical Frame and concepts* was renamed as *Self-determined behaviour* with two sub-themes; namely, Self-determination Theory and Pedagogy-Andragogy-Heutagogy continuum. Once the themes were finalised, the network function in ATLAS.ti was used to generate thematic maps to capture the visual representation of the data (*cf.* 5.4 - 5.7).

4.6.2.6   Phase 6: Producing the findings

Within phase six of the data analysis process, vivid extract examples are selected and related back to the literature and research questions guiding the study. It is about telling the complicated story of the data in such a way that the reader is convinced of the merit and validity of the analysis. The write-up must be concise, coherent, non-repetitive and give an accurate account of the data within and across themes (Braun & Clarke, 2006). The challenge when embarking on this phase, is to ensure that there is a minimum voice-over by the researcher and that the participants' voices are amplified (Sandelowski, 1998). The final product is therefore richly descriptive and includes a description of the demographical background of the research participants   (Merriam, 2002). It is presented in a qualitative narrative, that is, the discussion of themes, including sub-themes and multiple perspectives from the participants with supporting quotations (Creswell, 2009).

Walliman (2011) cautions that these qualitative reports are often lengthy and cumbersome as findings are presented sequentially and the information is dispersed over many pages. He suggests that graphical displays such as networks are used to communicate the data to overcome this difficulty of reading. A holistic network was developed to display the overall themes with sub-themes in the study (*cf.* 5.3) as well as four networks to display the main themes individually with their sub-themes and relevant categories (*cf.* 5.4-5.7). In line with the networks, the themes and sub-themes were colour-coded to ease the process of reading.

4.6.2.7   Disadvantages of Thematic Analysis

In terms of transparency, it is important to note the shortcomings of TA as a method of data analysis. A short overview of these shortcomings, as identified by Braun and Clarke (2006), are discussed as well as how their impact was minimised in the study. Because TA as a method is highly flexible and allows for a variety of analytic options, by implication a broad account is often given about the data. This can become a disadvantage as it problematises the development of guidelines for higher-phase analysis, especially when decisions are made on what to include and exclude in the study. The researcher aimed to overcome this challenge by using the primary and secondary research questions as well as the key concepts of the study and the theoretical framework to influence the choices made on the inclusion and exclusion of the reported data.

TA is considered to have limited interpretative power beyond mere description if not used within an existing theoretical framework which anchors the analytical claims made by the researcher. As mentioned above, the theoretical frame served as a pertinent guideline throughout the process and emerged as a theme in its own right due to the impact learners' SDT has on countering the passive learning phenomenon.

In contrast to methods such as discourse or content analysis, TA does not allow for claims about the use of language or the fine nuances of talk. Although the impact of finer nuances on speech, communication and ultimately behaviour is acknowledged by the researcher, the impact thereof falls without the nature, scope, and aim of the current study thereby lessening its impact as a potential disadvantage.

4.6.3 DATA VERIFICATION STRATEGIES

In the words of Merriam (1998), the primary aim of research is to produce valid and reliable knowledge. Having trustworthy results is particularly important to professionals in the applied fields where researchers and/or practitioners intervene in participants' lives. Knowing when to consider research as trustworthy is a contentious debate in qualitative research. However, due to the nature of the research, and for it to influence practice or theory, they must demonstrate a sense of rigour, present insights and

conclusions that rings true to their intended audiences and give some form of account for their validity and reliability (Merriam, 1998).

4.6.3.1   Validity

When arguing one's case for validity, it ensures that the steps taken were firm and sound, and that there is a coherent, logical and transparent progression from one stage of the research to the next (Richards, 2021). Within pragmatic qualitative research, the researcher endeavours for validity and/or an accurate account and interpretation of the data obtained with which the participants agree (Savin-Baden & Howell Major, 2013). To (partially) achieve this outcome, Chenail (1995) suggests that the researcher looks closely at the data and records to ascertain what they see, for when they keep to that aesthetic, the data help supports the validity of the analysis and the analysis then features the richness of the data. Apart from staying close to one's data, many scholars have given guidelines as to how internal validity can be achieved.

In breaking from the traditional sciences where validity can be measured via a test, the social sciences, due to the nature of the research and subsequently the data, feature a different approach. Validity remains a contested term in the academic sciences as some researchers take the position that validity, traditionally a quantitative construct, has no place in qualitative inquiry. Consequently, alternative terms have been suggested such as *verisimilitude* or *persuasive written account.* Nevertheless, many qualitative researchers continue to use the term decisively as it suggests a more rigorous stance toward their work (Miles et al., 2020).

Miles et al. (2020) continue their argument by stating that internal validity, credibility, and authenticity propagate crucial questions regarding the 'truth value' of the research such as whether the findings make sense, are they (the findings) considered credible by the participants and the readers and can the report be considered an authentic replication of the data obtained. Additionally, they have provided researchers with some useful criteria to achieve internal validity:

1.   The account of the participants ring true, makes sense to the intended audience and is able to convince the reader via its vicarious presence

2. Triangulation across a variety of methods has been achieved and is captured in converging conclusions

3. The data that have been presented are thoroughly linked to the dominant concepts and/or theory in the study

4. Any areas of uncertainty have been identified by the researcher

5. The researcher has paid attention to rival explanations

6. The conclusions are considered accurate by the original participants (Miles et al., 2020).

Merriam (1998) offers similar guidelines; however, she includes long term observation as well as researcher bias in her list of criteria. Creswell (2009) suggests using rich thick descriptions, as these detailed descriptions of the settings or the excerpts to support the themes, makes the results more realistic and richer.

Within this study, the researcher aimed to increase the validity in the following ways: (i) the findings discussed in Chapter 5 provide the reader with a holistic yet in-depth account of the phenomenon under study, (ii) the triangulation of data across a variety of methods including semi-structured online interviews, feedback questionnaires, research diaries and a spontaneous response, (iii) member checks were introduced after transcribing the interviews, two of the five participants verified their accuracy and (iv) the data revealed the interconnectedness between the primary concepts, the theorical frame as well as the primary and secondary research questions and (v) although the researcher did not have access to the contexts due to COVID-19 constraints, the reader has been provided with a rich description of the research participants and the process of the online training (*cf.* 5.2) and the PowerPoint presentation (Addendum P) as well as the Training manual (Addendum S) to provide the reader with transparency regarding this process. Declaring researcher bias is discussed later at a later stage (*cf.* 4.6.5)

It is important to highlight that the researcher did not observe the interventions being implemented due to pandemic restrictions during the data collection phase of the study, which ultimately placed a higher reliance on the participants (especially those who participated in the online interviews) to share detailed and accurate experiences. It is also important to note that these daily classroom interactions are situated in macro

systems that unquestionably influence whether interventions in general are welcomed and eventually implemented with success.

4.6.3.2   Reliability

The seminal work by Lincoln and Guba (1985) opened the door for qualitative researchers to align their data verification strategies with the nature of the interpretivist paradigm. Ever since the terms credibility, neutrality conformability, dependability and transferability were introduced into the scientific literature, newcomers have begun to critique narrow configurations of validity and reliability in qualitative research. Stenbacka (2001), for example, recognised the potential dangers of imposing quantitative research measures on qualitative studies. She argues that qualitative studies, with their purpose of generating understanding, may suffer due to the limitations imposed by these measures as they influence the researcher's actions. She consequently made a call to "…scrutinise standard concepts and the words that dominate the general vocabulary of quality judgement in research" (Stenbacka, 2001, p.551) and continues by stating that reliability has lost its relevance in qualitative research due to the notion of 'measurement method'.

According to Merriam (1998), reliability refers to the replicability of the findings. In line with Stenbacka's argument above, it highlights the concern as to its applicability in the social sciences for the mere fact that human behaviour is never static. Influenced by the natural sciences, the construct reliability originates from the assumption that there is a single reality which can be repeated with the same variables in different contexts. This is however, not the case with qualitative research as the laws of human behaviour cannot be isolated. Qualitative researchers also aim to explain the world as uniquely experienced by the individuals who participate in a study. There is no benchmark by which a researcher can repeat measures to establish reliability in its traditional sense (Merriam, 1998). The researcher therefore rather proposed the more nuanced definition by Richie et al. (2014) where reliability, in its broadest sense, refers to the 'stability' of findings and how authentic and credible they are. Lincoln and Guba (1985) proposed 'dependability' as an alternative, which does not envisage the same results but rather that the results make sense, are consistent and dependable (cited in Merriam, 1998).

Miles et al.'s (2020) take on dependability highlights whether the process of the study is considered consistent or stable over time, and across researchers and methods. They have proposed a list of criteria to ensure that qualitative research display high levels of dependability.

- Ensure that the research questions are clear and that they are compatible with the design of the study
- The researcher's role is described in depth
- The findings demonstrate a meaningful parallelism across a variety of data sources (for example, participants, context, time)
- The paradigmatic stance and analytic constructs are clearly outlined
- Data collection took place across diverse and appropriate settings, times and participants
- The researcher has checked the quality of the data with reference to bias and deceit; and
- The findings have been reviewed by a peer or colleague (Miles et al., 2020).

Within this study, the researcher aimed to increase the dependability in the following ways: (i) a well suited, clear and robust primary research question, extended by six analogous secondary research questions - these are compatible with the research design and illumes its pragmatic qualitative nature, (ii) although the findings were constructed across a variety of contexts (public high and private high schools) and across a variety of data sources (four different methods of data collection), it does not include implementation in low quintile schools which directly impacts the dependability of the study, (iii) a clear overview has been provided on the paradigmatic stance, the analytic constructs that formulate the conceptual framework in the study, the theoretical frame as well as their interrelatedness (iv) the findings have been reviewed independently by two peers, both who holds a Master's degree (one is a full-time lecturer at a tertiary institution, the other stepped down in 2022 as deputy principal at a private primary school).

Due to the 'time bound phenomenon' (Richie et.al, 2014) at play during the timeframe of implementation, the replicability of the study may be affected in ways that is either unknown or which the researcher cannot account for. One definite example being the

sample of teachers who participated in the study. These teachers, specifically the five who went through with implementing the intervention, may possess certain unique traits or characteristics which motivated them to experiment with the intervention.

4.6.3.3   Rigour

Attention to rigour is considered critical to an interpretive description (Thorne et al., 1997) as it ensures the trustworthiness of the research (Poduthase, 2015). It is demonstrated through continual reflection, questioning and an awareness of the role that the researcher plays when themes are generated (Ayre & McCaffery, 2022). This has special reference to TA where the aim is to produce rigorous and high-quality analysis (Clarke & Braun, 2017). Rigour, in qualitative research, is often used interchangeably with trustworthiness (Morse et al., 2002).

It is important to raise a contrary view on verification strategies as suggested by Morse et al. (2002). Contrary to the belief of returning the results to participants, Morse et al. (2002) are of the opinion that it may invalidate the data as the researcher's interpretive analysis becomes skewed. They also cation that reliability and validity should not be proclaimed by external reviewers at the end of a study, rather strategies should be put in place in the process of inquiry. As such, they consequently propose alternative strategies such as investigator responsiveness, methodological coherence, theoretical sampling and sampling adequacy, an active analytic stance, and lastly, saturation to guide the direction of the analysis and subsequently, the development of the study whilst ensuring reliability and validity (Morse et al., 2002).

The role of the researcher as key within this process as "…the lack of responsiveness is the greatest hidden treat to validity and one that is poorly detected using post hoc criteria of 'trustworthiness'" (Morse et al., 2002, p.18). Responsiveness includes being able to listen to the data, the ability to abstract, synthesise or move beyond the technicalities when coding the data and breaking from the instructions where necessary. In order to become a 'responsive researcher', emphasis is placed on key qualities such as creativity, sensitivity, flexibility and the ability to use verification strategies skilfully. What their argument captures, is the central- and active role that the researcher plays in qualitative research.

4.6.4 ETHICS

In 1964, the tenets of ethical research were outlined in the Declaration of Helsinki namely autonomy, beneficence, justice and non-maleficence. The prerogative thus lies with the researcher to conduct research in such a manner that is safe and advantageous for individuals. The research has to account for the informed consent, confidentiality, voluntary participation as well as balancing the risk against the benefit of the participants (Rhodes & Bernays, 2014).

The researcher must be cognisant of the fact that all aspects of the research process such as deciding upon the topic to identifying a sample and eventually the dissemination of the findings, have ethical implications which must be considered in advance (Northway, 2002). According to Allmark (2002), good ethical practice rests on two pillars, that is, ethical committees will review proposals and that honourable researchers will act in accordance with the ethical codes. When reviewing the ethical soundness of the research, three criteria are taken into consideration: scientific validity, the welfare of participants as well as having respect for the dignity and rights of participants.

The researcher needed to obtain permission from the relevant committees as mentioned above. This included UNISA's Research Ethics Committee, the tertiary institution with whom the researcher is affiliated ([Addendum Q](#)) and the Western Cape Department of Education, who stands responsible for public schooling in the Western Cape province of South Africa (Addendum C). Additionally, the researcher had to obtain the informed consent of the research participants (teachers) who participated in the online training (Addendum B) as well as the school principals of the participants who after the training, decided to implement the intervention in their classrooms (Addendum G).

4.6.5 RESEARCHER BIAS

From a qualitative pragmatic stance, researchers are required to identify and set aside their pre-suppositions as this allows them to be open for individual difference, the unknown and new potential meanings yet to be discovered (Kostere & Kostere, 2021). Distorting the data or results knowingly is a serious lapse of honesty, therefore, the

possibility of bias should be acknowledged and explained by the researcher (Walliman, 2011). Researcher bias is influenced by the lenses that the researcher 'puts on', which plays an integral part in the process of knowledge construction (Egbert & Sanden, 2014).

This is more so the case when social phenomena is studied. Walliman (2011) contends that our view of the world is a unique creation of the mind, which is experienced personally through our perceptions. These then are unanimously influenced by our preconceptions, beliefs and values. Consequently, a researcher does not observe phenomena from outside a system but is unavoidably influenced by the subject under study. Ultimately, there can be more than one perspective and interpretation of a phenomenon. From here, research questions are often developed (Savin-Baden & Howell Major, 2013), as can be seen in the introduction to this study where a narrative account was given of how the idea for the primary research question originated (*cf.* 1.1.). As researchers choose a topic that personally resonates with their interests and experiences, it is important to identify their personal beliefs about the topic. The researcher has to take a deliberate stance to not let these personal influences affect their judgement when making decisions on their resource journey (Kostere & Kostere, 2021).

Miles et al. (2020) distinguishes between two types of bias. The first relates to the effect of the researcher on the study, whereas the second highlights the effect of the study on the researcher. This study ran a higher risk of the first type of researcher bias, which is the effect of the researcher on the study. As a full-time teacher and part-time researcher, my epistemological stance is highly influenced by personal experience and pedagogic practice. The potential risk is to overstep the interpretive value of the data based on similar first-hand classroom experiences. From my ontological stance, my own frustration with the passive learning phenomenon as well as my passion and personal drive to find a 'solution', may hinder my sound judgement to critically evaluate the applicability and sustainability of the intervention in the South African context.

Apart from being cognisant of potential unconscious bias, care should be given to reduce the risk thereof. Sending, for example, the transcribed data for verification to the research participants, allowed participants to ensure and confirm the correctness of the data set, which were confirmed via email. Another is opening the invitation for

participation to every public and private high or combined school in the Western-Cape province, not knowing any of the participants prior to the training session and a review by the supervisor of the study, are all actions that was employed which can reduce the risk of personal bias.

4.7   CONCLUSION

Within Chapter 4, the researcher gave an account of the 'how' of the study. The reader was reminded of the primary research question as well as the secondary research questions which guided the exploration of the phenomenon under study. This was followed by an in-depth discussion of the research design as well as the paradigmatic orientation of the study and the supporting rationale for the decisions made regarding the aforementioned. An account was given of the research methodology, which includes how the participants were selected followed by an overview of the four methods of data collection. From there, the process of data analysis was outlined according to Braun and Clark's (2006) six phases. This was followed by a discussion on the data verification strategies employed in the study to improve the rigour of the overall findings. Lastly, the researcher gave an account of potential bias which serve the purpose of enhancing the validity of the study, as suggested by Merriam (1998).

CHAPTER 5

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

5.1   INTRODUCTION

When it comes to this point in the research study, qualitative researchers have immersed themselves in their data. After trying to navigate through the endless possibilities of interpretation and understanding of the phenomenon under study, they reach a point where the findings need to be communicated to their audience.

Following the previous chapter where the research paradigm, design, methodology and the process of data analysis were discussed in depth, this chapter focuses on presenting the background of the participants followed by the emergent themes and their respective sub-themes as revealed through the process of thematic analysis. Data were obtained from four datasets including five online interviews, three reflective feedback questionnaires (based on the online training), two spontaneous email responses (from a participant who attended the online training) as well as two diary entries (from two of the interviewees). Data were collected from nine participants who teach at various public schools (seven) and private schools (two). All the participants are teachers who reside and teach in the Western Cape province of South Africa.

The main research question that guided this study was: *To what extent does an altered flipped class pedagogy serve as an effective intervention strategy to address passive learning in a teacher-centred classroom?* as well as the six secondary research questions:

1. How do teachers experience their role transitioning when implementing the AFCP?
2. What are teachers' perceived challenges when implementing an AFCP?
3. To what extent, from the teachers' view, does the AFCP support learners to become actively engaged and/or motivated in their learning?
4. What are the benefits for learners, as perceived by teachers, when implementing an AFCP?

5. How are teachers' existing pedagogical approaches adapted when implementing an AFCP?

6. To what extent, from the teachers' view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency and relatedness?

What follows, is a short summary of the biographical information of the research participants as well as three concept maps of the main themes with sub-themes and categories which emerged through the process of analysis. The overview is to assist the reader when familiarising themselves with the main findings of the study. The chapter is divided into sections with the concept map at the beginning, which introduces the theme, followed by a presentation of the findings underneath each sub-theme.

5.2   BIOGRAPHICAL DATA OF RESEARCH PARTICIPANTS

All of the participants completed the online training that occurred between 25 August 2021 and 16 September 2021. Five of the participants experimented with the AFCP in their classrooms (P1, P2, P3, P4, P5) and gave feedback on their experience through the online interviews (I). Three interviews were conducted in English, one in Afrikaans and one was a combination of Afrikaans and English. Two of these participants (P1, P5) also kept a research diary (RD) of their experiences. Three participants (P6, P7, P8) could not implement the AFCP due to various reasons (time constraints, school principal withheld consent) but were willing to fill in a qualitative feedback questionnaire (FQ) on the potential of the AFCP as an intervention strategy to address passive learning in a teacher-centred classroom. One participant (P9) teaches Grade 7 at a combined private school. She was excited to attend the session and experiment with the AFCP. After the online training, she reached out twice via email (the first time to give feedback on the online training session and then again after implementing the AFCP where she reflected on her experience). Although she fell outside of the initial scope of the research, her email responses were included under the data set spontaneous response (SR), as these enriched the data (Turale, 2020).

TABLE 5.1: BIOGRAPHICAL DATA OF RESEARCH PARTICIPANTS

P. CODE	GENDER	QUALIFICATION	EXPERIENCE	SUBJECTS	SCHOOL	QUAL DATA
P1	Female	BA & PGCE	4-7 years	Geography & Social Science	Public	Online interview & Research diary
P2	Female	Hons.Ed	21-30 years	Mathematical Literacy & Life Orientation	Public	Online interview
P3	Female	BAHons	8-12 years	English Home Language	Private	Online interview
P4	Female	BA & PGCE	0-3 years	English Home Language & Creative Arts & Life Orientation	Public	Online interview
P5	Female	M.Ed	4-7 years	Afrikaans Home Language & First Additional Language	Public	Online interview & Research diary
P6	Male	M.A. French	8-12 years	French	Public	Feedback questionnaire
P7	Male	M.Ed	8-12 years	Engineer Graphics Design & Technology	Public	Feedback questionnaire
P8	Female	B.Sc.Ed	21-30 years	Natural Science	Public	Feedback questionnaire
P9	Female	BA & HDE	30 + years	Maths, English, History, Geography, Natural Science, Technology & Life Orientation	Private * Grade 7 teacher	Spontaneous response (email)

Most (78%) of the participants (teachers) in this study teach at public schools. When studying the qualification and teaching experience of the participants, all had qualified with a teacher education qualification. Furthermore, seventy-eight percent (78%) of the participants had teaching experience ranging in the category 8-12 years. Finally, sixty-

seven percent (67%) of the participants implemented the AFCP after attending the online training session.

The intricacies and complexities of the nature of the phenomenon under study seated within daily classroom interactions, provided a unique challenge to the researcher when unpacking the passive learning phenomenon in the process of analysis. All key stakeholders such as teachers, learners as well as significant others seated in the micro- and macro systems of these individuals indisputably influence what happens and consequently, form part of the process of dissemination. To demonstrate this point, the researcher would like to provide the reader with a beautifully articulated outlook of one such example constructed by one of the participants through the use of a metaphor:

"I believe it is the learners' responsibility to learn and the teachers' responsibility to give direction (not instructing alone). It's like learning to drive a car: If the learner doesn't sit in front of the steering wheel, the teacher continues to enhance his/her driving skills while the learner remains a passive passenger. The flipped approach in contradiction, has the potential to flip the teacher out of the driving seat and forces the learner into the driving seat. Learning (according to my definition) is to make sense of uncertainty. Teaching, therefore, is rather about enhancing learners thinking about the content than remembering unquestionable facts. To help the learner making sense of uncertainty, it's important to put the learner behind the steering wheel and give the learner a voice to display their own interpretation. When listening to learners' conceptions, teachers have the opportunity to correct learners' misunderstandings about content. If learners took the wrong turn help them to know the map, so that they can get back on track again. But teachers who do ALL the talking, silence their learners' voices, which means the content remains abstract and the learners main concern is to try and remember everything. When they are writing end exam, they are supposed to know the map and adapt where they needed to. Teachers are supposed to prepare them to drive the road on their own. To conclude, the rich (inquisitive) learner will get richer, but the poor (instructed drilled) might turn worse." (P7-FQ)

5.3 EMERGING THEMES AND SUB-THEMES

Four themes emerged during the process of data analysis. These themes (Teacher, Learner, Systemic & External factors and Self-determined behaviours) were sub-divided into various sub-themes as demonstrated below.
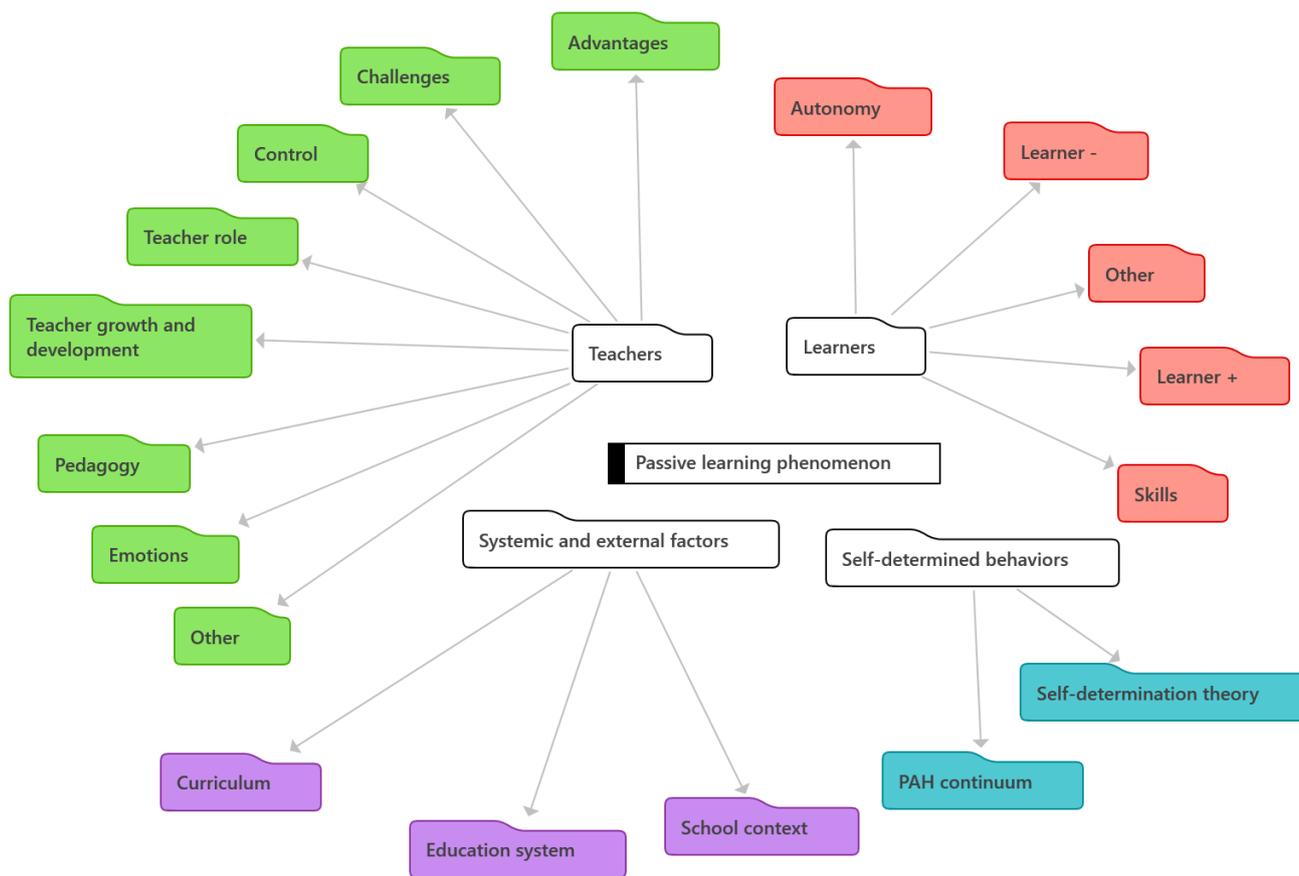
FIGURE 5.1: THEMATIC MAP – MAIN THEMES AND SUB-THEMES

In the table that follows, an overview is provided of the various themes and their relation to the research questions of the study.

TABLE 5.2: RELATIONSHIP BETWEEN RESEARCH QUESTIONS, THEMES AND SUB-THEMES

RESEARCH QUESTIONS	THEMES	SUB-THEMES
To what extent, from a teachers' view, does the AFCP support learners to become actively engaged and/or motivated in their learning? What are the benefits for learners, as perceived by teachers, when implementing an AFCP?	Learner	* Learner positive; Learner negative; Autonomy; Skills
How do teachers experience their role transitioning when implementing the AFCP?	Teacher	* Advantages; Challenges; Teacher role; Emotions; Control; Pedagogy

What are teachers' perceived challenges when implementing the AFCP? How are teachers' existing pedagogical approaches adapted when implementing an AFCP?	Learner	* Learner negative
To what extent, from the teachers' view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency and relatedness?	Self-determined behaviour	* Self-determination Theory; PAH continuum

Although the process of data analysis is primarily guided by the research questions, the researcher welcomes ideas or notions that extends beyond what the researcher is 'looking for'. Uncovering the phenomenon in more depth, may ultimately shed light on prior misconceptions or help scholars develop a better understanding when attempting a similar study in future. What follows is a glimpse into the experiences of both teachers and learners from the voice of the nine participants when implementing the AFCP in the everyday classroom and in certain instances, participants' preconceived notions of the potential of the intervention to counter passive learning.

5.4   THEME 1 - LEARNERS

As can be seen below, five sub-themes emerged from the data: *Learner positive*, *Autonomy*, *Skills*, *Learner negative* and *Learner other*. What follows is a presentation of each of these sub-themes with their respective categories.
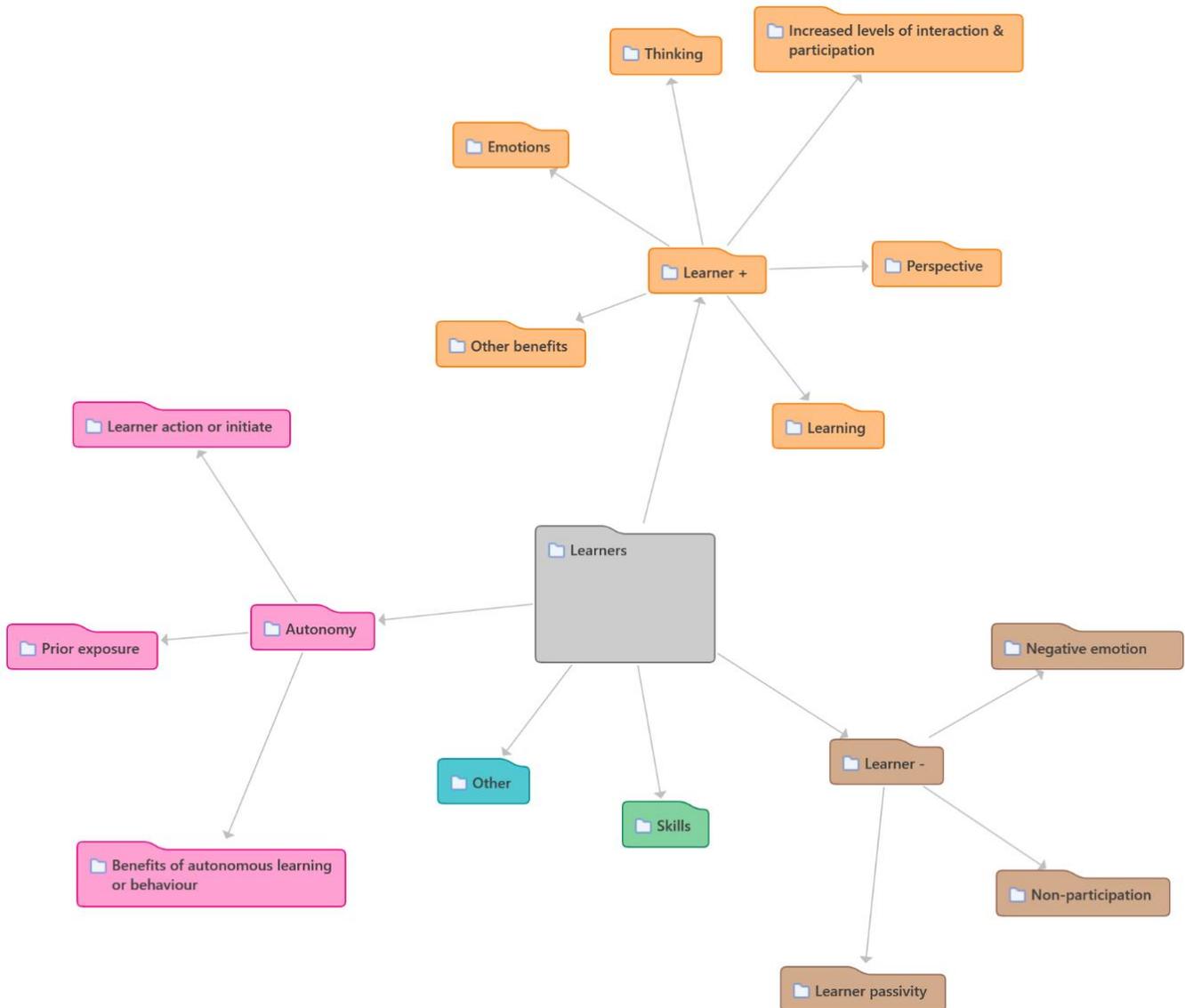
FIGURE 5.2: THEMATIC MAP – THEME 1 WITH FIVE SUB-THEMES

5.4.1 SUB-THEME 1: LEARNER POSITIVE

This category refers to the positive outcomes and benefits to learners as perceived by their teachers when implementing the AFCP. Although the FCP is widely known for the increase in learner participation, the data collected revealed that the potential impact is greater than anticipated. *Learner positive* is the largest sub-theme within the *Learners* theme and consists of six categories: *Perspective*, *Thinking*, *Learning*, *Emotions*, *Increased levels of interaction and participation* and *Other benefits*.

5.4.1.1 Perspective

One participant commented on the change in learners' perspective when implementing the AFCP, after they were initially resistant to the idea. This also had a positive ripple effect on the respective participant as can be seen in the excerpt below:

> *"Uhm, it was enlightening to see their perspectives change…"* (P4-I)

5.4.1.2 Thinking

In traditional classrooms, learners often receive information wholly from the teacher and are not required to contribute to the lesson or to provide input. When activating learners' prior knowledge via the pre-class activity and stepping into the role as a facilitator, learners' thinking becomes activated as there is a shift in responsibility as to how knowledge is 'created' and 'discovered' in the class. The data revealed a positive effect and in certain cases, an increase in different types of thinking. Learners displayed the ability to think independently and more creatively. The potential of the AFCP to increase higher-order thinking was also recognised as well as the instructional method's ability to enable lateral thinking and reduce the cognitive load on learners.

> *"Cognitively, I think it's very good because it's, uhm. It takes them out of their comfort zone, especially if they used to the teacher talk uhm, mode of teaching that's they they're challenged to think on their own."* (P3-I)
>
> *"I'm thinking specifically in South Africa... I think there's a there's a deficit in… in… now I have to remember the word… Uhm, lateral thinking. And I think… altered flipped would give students more opportunity. To develop that."* (P3-I)
>
> *"So ja, ek dink dit gaan soos half om onafhanklike denke, uhm, dit gaan definitief dit bevorder."* (P5-I)
>
> *"I must say what I picked up… They were being more creative…"* (P1-I)
>
> *"The other thing if you use flipped classroom that you won't easily overload… go into a cognitive overload."* (P2-I)
>
> *"…it allows the learners almost take the instructions and interpret it in their own ways and to think 'How will I think of a question? 'How do I understand this video?' in their own way."* (P1-I)
>
> *"It's going to develop higher order thinking a lot more."* (P2-I)
>
> *"They really broadened their minds."* (P1-RD)

5.4.1.3 Learning

Linked to the primary research question, participants witnessed a positive effect on the learning as it occurred in the classroom. Overall, the learning experience were considered more enriching, and learners were provided with the opportunity to access deeper learning. Learning also became more individualised.

"Some people came back and they were like 'Mam, I read this. And do you think this is similar?' And I was like 'What do you think? Why are you asking me? What do you think? Tell me." (P1-I)

"And I realized that they… they know what a simile is, and they know what a metaphor is. And they know what personification is and that's about it. But they don't know how to identify it." (P4-I)

"I find that they can now highlight key concepts without me telling them what those actually are, as they have a basic idea of what they are learning about, so they are reading their work with more understanding." (P9-SR)

"I used it to introduce each unit of new work so implemented it across all my subjects in grade 7 (Maths, English, History, Geography, Natural Science, Technology and Life Orientation)." (P9-SR)

"They embraced the idea… and have learnt so much more than was in the textbooks." (P9-SR)

"Flexibility - learners can work and rework certain aspects of the syllabus in their own time, depending on the layout of the subjects' learning structure." (P6-FQ)

"They will become eager to learn because they are included in the learning process." (P8-FQ)

5.4.1.4 Emotions

Implementing the AFCP had a positive effect on learners' emotions. The participants witnessed the enjoyment of learners when experiencing a new way of learning, which was evident in that it translated into their physical demeanour. One participant also attested to an improved morale in class, whereas another remarked on how learners had to confront their fear of failing to ultimately overcome it.

"But the ones that did watch it and did come up with the questions, they enjoyed it. They actually said how they watched it with their families and stuff like that which was actually pretty cool." (P1-I)

"So, they were excited, and then the next day when I saw them, which is the day after I started with the the flip lesson and they enjoyed they enjoyed the Google Classroom." (P4-I)

"…en ook moraal in die klas verbeter." (P5-RD)

"It was just nice, their whole like eyes just lit up. Their conversations weren't held back and the ones that were normally quiet weren't quiet and that was nice." (P1-I)

"…they don't like failing. They're deathly afraid of failing, but because they have to work on their own, they have to confront that fear, and so it teaches them to kind of overcome that too." (P3-I)

"It was just nice, their whole like eyes just lit up." (P1-I)

"…and they just look more alive when they walk into the class." (P2-I)

5.4.1.5 Increased levels of interaction and participation

An increase in interaction and participation inevitably implies a decrease in passivity. By implication, this sub-theme forms one of the more prominent ones under the theme *Learner* in the findings. There is a strong presence in the data of an increase in the general levels of learners' voluntary engagement in terms of interaction and participation in the class. Cooperative learning experiences during in-class activities compel learners to work in groups, which benefits them greatly. Participants also noted that the quiet or shy learners, who often shy away from interactions in the class, were drawn in and contributed to the learning process and interactions.

Examples relating to the increased levels of interaction and participation include:

"For one lesson I asked them to find me 5 fun facts about the sun (to introduce Astronomy Natural Science) and one student came up with 2 pages because 'it was so interesting'. This from the child who usually spends all lesson yawning or disturbing the others." (P9-SR)

"Eventually I'd be like, 'OK, you guys need to pack up. We have two minutes, the bells ringing' and they're like 'No Mam we have to stay.' I'm like no, no you have to go, its two minutes the bell's gonna ring now' and I had to break the conversation and I just I hated doing it." (P1-I)

"…hulle is minder passief, en jy kry almal in die klas om meer deel te neem. Ja." (P5-I)

"And then it was just like they were more engaged, and they kept relating it back to the video." (P1-I)

"They were interacting, they were listening, they were going 'Ja, ja, ja I agree with you' and then realizing that they are actually paying attention to one another." (P1-I)

"What I remember is how amazed I was with the way the learners interacted." (P1-RD)

"Learners will start to realize that they can make meaningful contributions in class, at home or in society in terms of their ability to become critical thinkers and problem solvers." (P8-FQ)

"So there was also enough, uh, they were enough girls in a group that they didn't all have to present and they didn't all have to write notes and they didn't all have to make a presentation. So, the idea was that two or three of them would present to the class orally. Uhm, and then the rest of them would help with creating the presentations. So you've got the the… the kids who are uhm, who are strong vocally confident to present. You've got the kids who are confident to do design work. Got the kids who… who are confident to do research and then the kids who write well and but they all had to contribute and help each other so they had their strengths but they were working together as well, yea." (P3-I)

"Also think that in so many classes in South Africa. All the kids are sitting facing the same way, all the time and there are a lot of them in the class. And so all they're seeing is the backs of people's heads and the teacher. But if they do the flipped classroom, if they do something that is... that is flipped, they have to work differently… you know, they... they learn best from their peers. And they don't even know

Learners who are particularly known for being passive or shy, engaged in the classroom activities.

"Dit het daartoe gelei dat leerders wat dikwels passief is en te skaam is om antwoorde te gee wel deelneem aan die klas." (P5-RD)

"…the ones that were normally quiet weren't quiet and that was nice." (P1-I)

"So al het sy net twee sinne gesê sy het ten minste twee sinne in Afrikaans gesê en dit is kinders wat gewoonlik nie 'n woord wil sê nie." (P5-I)

"En selfs met die Gr 9's met die woordeboek, daar is van dies wat uhm jy weet hulle lê mos al is dit meisies het jy ook nou maar daai lêendes. Selfs die lêendes het regop gesit en deelgeneem." (P5-I)

5.4.1.6　　　Other benefits

Apart from having a positive effect on learners' mindset, emotions and increasing the level of classroom interactions, the benefits and/or advantages of the AFCP translated into various other areas of learners' educational experiences in the classroom. A few of these are demonstrated below and include examples, such as providing opportunities for the inquisitive learner, an increase in work completion (especially weaker learners), providing learners with opportunities to grow in terms of their academic independence and sharing their learning experiences with family members, and extending the curriculum within their micro-systems.

"I think mostly it's it's allowing them a little bit of freedom. A little bit of independence so that they can see what they can do…" (P3-I)

"They would be more life-wise." (P1-I)

"They embraced the idea, have found lessons more stimulating and have learnt so much more than was in the textbooks." (P9-SR)

"It takes them out of their comfort zone, especially if they used to the teacher talk uhm, mode of teaching." (P3-I)

"But the ones that did watch it and did come up with the questions, they enjoyed it. They actually said how they watched it with their families and stuff like that which was actually pretty cool." (P1-I)

> *"And what I find amazing is they'll come back and then everybody's work is done. Sit daai selle werk in die klas 'Ok mense maak die handboek oop bladsy 10 doen nommer 1, 5, 6 en 7'. Dan is die slimmetjies vining klaar die ander ouens gesels en jy het daai stadiges wat nog steeds nie klaar is as die klok lui nie…. But send them out two-two or three-three around the school and then suddenly everybody is done."* (P2-I)

> *"…you can even ask the weak child something and that child can actually answer something."* (P2-I)

> *"The flipped altered approach is a huge improvement the inquisitive learner."* (P7-FQ)

5.4.2   SUB-THEME 2: LEARNER NEGATIVE

This category refers to the teacher perceived negative outcomes and/or behaviours learners demonstrated when implementing the AFCP. Within this category, it becomes clear that the learner positives after implementation, far outweigh the learner negatives. These, however, cannot be ignored as they provide a fuller picture of the implemented intervention. They highlight areas that one has to be cognisant of when attempting successful implementation. The data revealed similar responses to the existing literature on the FC and no new categories emerged. *Learner negative* consists of three categories: *Negative emotion*, *Non-participation* and *Learner passivity.*

5.4.2.1   Negative emotion

One participant highlighted an increase in learners' anxiety when the AFCP was implemented. The anxiety was positioned in a fear of making mistakes. Where this anxiety originates from is open to debate. Possible suggestions may be high expectations from parents or the school (private school context) or the pressure imposed on learners due to High-stakes testing.

> *"To begin with, they were quite anxious. They tend to be quite anxious because they were afraid of getting it wrong. And so, I had to reassure them quite a lot that this is it's an exploration, also it's poetry, so it lends itself to that sort of thing. Uh, you know it's. It's an exploration. You don't… it's not about right or wrong, it's about what you're thinking, it's about what you find, what you interpret."* (P3-I)

5.4.2.2   Non-participation

Contrary to the emphasis in literature, there were not many instances where participants expressed their concern with learners not participating in the pre-class

activities. In one instance, a participant expressed her disappointment and frustration when her learners were not prepared, which is visible in one of the excerpts below.

"Weaker ('lazier') learners will not invest in approach." (P6-FQ)

"And then they…They're really not, and then that makes it quite hard, because like I said, when learners come back and you're like 'OK who watched the video?' And then it's like six and then you're like 'Cool'. [pause] I'm like 'Well, what if this video was really in the exam? What if this video was important? You won't know. I haven't said the exams yet and now I'm in the mood to just put it in just for the fun of it', because sometimes I feel like that. And it was so challenging." (P1-I)

5.4.2.3 Learner passivity

Learner passivity surfaced as the strongest category under the sub-theme *Learner negative*. Participants' comments focused on learners' laziness as well as their unwillingness or reluctance to take responsibility. A lack of self-discipline was also highlighted, reinforcing the idea of indolence. One participant stressed the importance to break the passive habits associated with the teacher-centred classroom. This once again reiterates the reciprocal relationship between passive teaching and passive learning. It also emphasises the responsibility of the teacher to initiate active learning experiences.

"…but they weren't very keen on knowing that they have to go and do the work themselves. Come back, work in groups and present. Like in your training how you did the poem. I try to model that. Uhm, but they… They say they don't like it, but I don't think they understand the effects and impact that it is having." (P4-I)

"I always tell them 'I'm not here to always write down every single note that I'm saying you're gonna have to learn to do it yourself and to make notes and make questions and make answers for yourself because no one is going to do it for you for the rest of your life. You are the person that needs to question things. You are the person that needs to answer the questions as well and do research about it'." (P1-I)

"Little accountability from learners." (P6-FQ)

"Maar ek sal dit nie met enige ander klas kan doen nie. Ek sal dit nie eers met my graad 10 Huistaal klas kan doen nie, want hulle het nie genoeg self-dissipline om dit te doen nie." (P5-I)

"Uhm, they tend to not like take responsibility of engaging in the work." (P1-I)

"The challenges? You need to (pause). I think just the self-discipline maybe of some children… uhm especially if you… if you expect them to do the flipping at home." (P2-I)

"…because they want to… they just want to sit and write down and receive. But I feel like, we can break that, we can break that habit. Because that's a lazy habit. Just wanting to get, but not really engaging." (P4-I)

"That some, don't always ride on the on the backs of the others that they are also engaged and involved even in a group or individually, and making sure that you don't lose a child somewhere." (P2-I)

5.4.3 SUB-THEME 3: AUTONOMY

This sub-theme directly relates to the theoretical framework of the study and reflects an increase in learners' autonomous behaviours when introducing the AFCP. Implementing an instructional method that promotes active learning and encourages learners to take initiative due to reduced control from the teacher's end, has a compelling influence on learners' choices to take action relating to their learning experiences. Learners automatically also start displaying more intrinsically motivated behaviours. *Autonomy* consists of three categories: *Learner action or initiate*, *Prior exposure* and *Benefits of autonomous learning and/or behaviour.*

5.4.3.1 Learner action or initiate

Once the participants had implemented the AFCP, they witnessed a change in learners' behaviour specifically when it came to actioning learning activities. Learners were less reliant on their teachers and demonstrated more autonomous behaviours such as working independently, being pro-active and engaging with curricular content outside of the classroom.

"I find that they can now highlight key concepts without me telling them what those actually are, as they have a basic idea of what they are learning about, so they are reading their work with more understanding." (P9-SR)

"Now they're teaching themselves (laughs with interviewer). " (P4-I)

"Some people came back and they were like 'Mam, I read this. And do you think this is similar?' " (P1-I)

" 'Oh, but isn't it like this in the video that they were speaking about?' And then I realized. This is working. This is really working (hand gesture A-ha moment) (smiles)." (P1-I)

"So, the minute I give them something to do on their own, they run with it and they're quite happy to do that. But yea, it worked nicely. It worked very nicely." (P3-I)

"…it's going to teach the children to be to be pro-actively involved in their own education." (P2-I)

"Ek dink dit wys vir leerders dat hulle onafhanklik kan werk, of dat hulle eintlik genoeg kennis het om iets self te ontdek." (P5-I)

"…but with my grade elevens they were just full steam ahead. They were just so ready for it." (P1-I)

5.4.3.2 Prior exposure

The data revealed that learners who have been exposed to opportunities to work independently from a young age, more readily welcomed the learner-centred in-class

activities when introducing the AFCP. One participant highlighted the role of context and resources on learners' ability to develop their independent research skills, which could be readily applied in class.

"Yeah, when it comes to doing the work, they are quite used to being given the reins to their own learning and so you don't need to push them to do that." (P3-I)

"Uhm, but I… I've found, I mean in the in the classes that I've taught in the schools that I've taught, they are already independent learners. They get taught that from… from when they're young and so they don't respond well to having a teacher completely in control of the classroom." (P3-I)

"Most all of them have some sort of device, most of them have iPads. They all have access to the Internet all the time. If they don't know something, they look it up. Uhm, and so if you ask them to go and research things, that's what they do anyway, so it's, it's almost second nature to them. And I think independent learning what I was really thinking of is that they… they are asked to do projects, they are asked to do research. They are asked to gather information for projects from when they're in primary school, and so when they get to high school, it's… they know what to do. They don't have to be taught." (P3-I)

5.4.3.3 Benefits of autonomous learning and/or behaviour

The category *Benefits of learning* was discussed earlier under the sub-theme *Learner positive*. Within this particular category however, the focus specifically falls on the learning benefits that flow from learners' autonomous actions. This category emerged as the strongest within the *Autonomy* sub-theme yielding various gains towards learning, which directly counters the passive learning phenomenon. These include making an influence in their communities, being able to reflect on the content being learned and, consequently, the potential value it can add as well as successfully regulating themselves.

"Learners will start to realize that they can make meaningful contributions in class, at home or in society in terms of their ability to become critical thinkers and problem solvers." (P8-FQ)

"…too... be able to work through the content themselves without… without uhm, I think external help like from the teacher." (P4-I)

"Yeah, so it builds… it builds confidence." (P3-I)

"A little bit of independence so that they can see what they can do." (P3-I)

"It's allowing them to also go into their own knowledge and to also think like, 'What do I want out of this?' or 'What value do I see in this?'" (P1-I)

"I found that the pre-class set the tone, got them thinking about the subject, and in almost every case they gave me more information than was contained in the textbook." (P9-SR)

"Learners get the opportunity to forecast lesson by doing pre-class activities." (P6-FQ)

> *"So, their advantage would be to have the skill to identify, to do research, to have the discipline to do the work themselves at home."* (P4-I)
>
> *"…because I… I took a seat and they… were able to regulate themselves."* (P4-I)
>
> *"Ek dink dit wys vir leerders dat hulle onafhanklik kan werk, of dat hulle eintlik genoeg kennis het om iets self te ontdek."* (P5-I)

5.4.4 SUB-THEME 4: SKILLS

This category refers to the skills to be gained or developed when implementing the AFCP. One of the core strengths of the AFCP, is the opportunity to develop the skills that form part of the pedagogical outcomes of the CAPS curriculum, which strongly echo the development of critical thinking and problem-solving skills. These skills are often limited, or event neglected when teaching via a teacher-centred approach as learners are not required to provide input and a greater focus is placed on the ability to listen for information. The sub-theme *Skills* consists of three categories: *Skill development*, *Socio-emotional* and *Other skills.*

5.4.4.1 Skill development

Participants acknowledged the likelihood of the AFCP in developing skills that would benefit learners in the future thereby acknowledging the potential long-term impact. One of the participants also clearly stated that the focus and strength of the AFCP does not reside within "academics" thus implying a shift in focus on the learning outcomes to be gained.

> *"Uh, academic. Uhm, I think it's as. It's as rigourous as being taught by the teacher. Uhm… I don't think it's more rigourous. And perhaps it depends that depends on the group, and it depends on the… the situation. But I… I don't think that the academics is the most important thing in the flipped classroom."* (P3-I)
>
> *"… "life skills" to the kids, they would not only be able to apply this to write a test and get good marks, but they will also be able to apply this to other things in life."* (P4-I)
>
> *"I think with the altered flip it's more about teaching a skill then teaching… uhm knowledge and content and the CAPS. So, their advantage would be to have the skill to identify, to do research, to have the discipline to do the work themselves at home…"* (P4-I)
>
> *"But if they do the flipped classroom… they have to work differently. And hopefully they would work with each other. And that would… you know, they... they learn best from their peers. And they don't even know that they know something until they start explaining it to their peers. Uhm, and that sort of thing I think is. Very very very worth developing."* (P3-I)

> *"I think the value that this would add is we are not only setting up these kids' generation to do well in tests, but we're setting them up for life skills, for things beyond just getting good marks and knowing what the teacher is going to ask in the test. But actually, understanding the work."* (P4-I)

5.4.4.2 Socio-emotional skills

Providing learners with cooperative learning experiences opens them up to opportunities to develop their socio-emotional skills. Peer learning, for example, cultivates skills such as collaboration and communication which enables learners to work effectively in teams.

> *"…accepting each other's opinions."* (P1-I)
>
> *"Collaboration: time spent in class can be used to work together toward completing a task."* (P6-FQ)
>
> *"…are also a good thing and listening to each other's discussions."* (P1-I)
>
> *"…they were going 'Ja, ja, ja I agree with you' and then realizing that they are actually paying attention to one another."* (P1-I)
>
> *"And actually, seeing their social skills pick up because they actually were engaging with one another and not just oh, we have class together and here we go."* (P1-I)
>
> *"Socially, I think it's. Uh, if you if you give them work to do in a group or in a pair, then that cooperative learning kicks in… I always try to put the group, put them into groups with… with people that they're comfortable with because I… I remember group work from school and it was hell. Uhm, but they, you know, they have to learn to work with people with who are different to them. And I think that's important."* (P3-I)
>
> *"…to listen to other people's opinions."* (P8-FQ)

5.4.4.3 Other skills

This category highlights the possibility of the AFCP intervention to develop learners' skills that relates to higher-order thinking. By implication there is an increase in terms of cognitive demand as higher levels of input (for example, critical thinking) are required from learners.

> *"…to critically evaluate information…"* (P8-FQ)
>
> *"Learners will start to realize that they can make meaningful contributions in class, at home or in society in terms of their ability to become critical thinkers and problem solvers. They will become eager to learn because they are included in the learning process."* (P8-FQ)
>
> *"Media literacy: learners may be exposed to various sources (not only textbook-based)."* (P6-FQ)
>
> *"Ek dink dit kan probleemoplossingsvaardighede ook verbeter, want hulle moet nou self dink, hulle moet nou self iets doen in plaas daarvan dat iemand vir hulle die inligting voer en instruksies gee."* (P5-I)

5.4.5   SUB-THEME 5: OTHER FACTORS

Within the last sub-theme of theme one, the researcher wantedd to highlight certain factors that fell outside the four categories that have been discussed. It can be argued that these factors are imperative as to whether the AFCP intervention is successfully implemented. What stood out in this particular category is the influence of the learners' developmental phase as well as the generation of learners currently occupying the seats at school – Gen Z with their unique educational preferences and needs. Teachers ought to be cognisant of the fact that the AFCP is a novel experience to learners who might not be receptive to or ready for the intervention due to a variety of reasons. The sub-theme *Other factors* consists of two categories: *Gen Z* and *Introducing the intervention.*

5.4.5.1   Gen Z

Participants acknowledged Gen Z and how this generation of learners' unique skillsets could potentially play to the strengths of the AFCP. One participant also demonstrated her sense of analogously being compelled to re-evaluate her instructional methods as she became aware of changing times and the new demands brought about by educating the new generation occupying today's classrooms.

"…and that's why I like this generation 'cause they want to question everything." (P1-I)

"Uhm, and so if you ask them to go and research things, that's what they do anyway, so it's it's almost second nature to them." (P3-I)

"I began teaching in 1991 and from teaching in state schools with huge classes, private schools with very affluent children to a small village school now, I have held one sentence up as both an example of fear by most teachers and a personal challenge for me: "But we've always done it this way"... In this age we cannot do it the way "we have always done it." (P9-SR)

5.4.5.2   Introducing the intervention

In some instances, participants deliberately told their learners about their idea to implement the AFCP to help prepare them emotionally. This was met was a positive response and may ultimately have contributed to the successful implementation thereof. One participant's response, however, indicates that implementation should be

phased in moderately as learners missed the emotional contact with their teacher when the role change took place. Another participant's remark emphasised the importance of context with specific reference to learners' demographical background which may have a significant impact on their prior knowledge and subsequently, their ability to make meaningful contributions. Lastly, one participant had to manage learners' anxiety through reassuring them that it is not about getting "the right" answer.

> *"So actually, making a decision to tell them about the research and about the process and what it would look like and what is the purpose. The purpose is for them, for it to be learner-centred for them to understand the work instead of just receiving information that they're going to forget in two weeks. Uhm…They… they were very excited to be honest with you and I told them I am doing this training and this is what it is and I wrote on the bord for them, they can go look it up. So, they were excited, and then the next day when I saw them, which is the day after I started with the… the flip lesson and they enjoyed they enjoyed the Google Classroom."* (P4-I)
>
> *"I explained to the students that we would be trying a new way of learning and that all I asked of them was to give it a chance and have a good attitude for 2 weeks and then we would re-evaluate. I did say that I was not going to make the pre-class activities compulsory but that they would miss out on the fun part if they didn't do their part."* (P9-SR)
>
> *"Learners living in poor conditions may not have been exposed to real life activities (eg. camping, visiting places)."* (P8-FQ)
>
> *"They would like to do it again, but not every day. They… they also want contact with me."* (P2-I)
>
> *"Two begin with, they were quite anxious. They tend to be quite anxious because they were afraid of getting it wrong. And so I had to reassure them quite a lot that this is it's an exploration, also it's poetry, so it lends itself to that sort of thing. Uh, you know it's. It's an exploration. You don't… it's not about right or wrong, it's about what you're thinking, it's about what you find, what you interpret."* (P3-I)

5.5   THEME 2 - TEACHERS

As can be seen below, eight sub-themes emerged from the data: *Advantages*, *Challenges*, *Teacher role*, *Emotional*, *Control*, *Pedagogy*, *Teacher growth and development* and *Other factors*. What follows is a presentation of each of these sub-themes with their respective categories.

FIGURE 5.3: THEMATIC MAP – THEME 2 WITH EIGHT SUB-THEMES

5.5.1 SUB-THEME 1: TEACHER ADVANTAGES

Beginning with one of the smaller sub-themes the focus is on the advantages or benefits for teachers when implementing the AFCP. The participants highlighted their ability to receive immediate feedback on learner progress. When teachers become facilitators, they have the opportunity to observe their learners more carefully. This might enable them to provide timeous support when needed or intervene at an earlier

stage should the need arise. Secondly, participants mentioned that time could be utilised more efficiently by limiting mundane tasks that often take up valuable class time. The sub-theme *Teacher advantages* consists of two categories: *Feedback on learner progress* and *Saving time.*

5.5.1.1   Feedback on learner progress

Providing teachers with the opportunity to stand back and observe their learners rarely happens in the teacher-centred classroom. Often learners struggle unbeknownst to the teacher and only when assessed, teachers obtain some form of learner feedback. Rarely are opportunities provided for individual feedback or to discuss learners' misconceptions. When implementing the AFCP, teachers can become pro-active by providing learners with real-time relevant feedback and as a result errors are rectified and individualised support is provided where needed.

"And yes, the… the teacher would have to put in work beforehand, but then you know that it would maybe give them the opportunity to…to sit back and observe instead of being... uhm, completely involved all the time." (P3-I)

"Veral by die gr.8 Afrikaans Huistaal-klas kon ek vinniger optel watter leerders nog nie die werk onder die knie het nie omdat hulle hul stappe moes verduidelik." (P5-RD)

5.5.1.2   Saving time

Managing classroom time effectively is crucial especially during the FET phase, where the curricular content load is high. Saving time could therefore be regarded as a big gain with the AFCP where tedious and time-consuming tasks such as marking homework can become a post-class activity that is used to consolidate the work completed in class.

"This fits better into an effective time management approach, then the "unflipped" traditional approach." (P7-FQ)

"Mundane tasks learners can do by themselves at home (marking homework)." (P6-FQ)

"More time for engagement in class time." (P6-FQ)

This category refers to the main challenges teachers experienced when implementing the AFCP. Although the participants found it challenging when learners did not participate in the pre-class activities, or demonstrated a variety of passive behaviours, those challenges related to from the learner. The two categories portrayed in the section below originate solely from the teacher. The researcher is not aware that reference has been made to either of these categories, which shed some new light on teachers' experiences when implementing the AFCP intervention. *Teacher challenges* consists of two categories: *Uncertainty* and *Creativity.*

5.5.2.1   Uncertainty

Participants made special reference to their uncertainty as to whether learning took place. Although this was pointed out, the researcher is of the opinion that teachers would experience a similar challenge when teaching via a teacher-centred approach. It is noteworthy to remark on, as it might place an emotional demand on teachers when implementing the AFCP, which should not be left accounted for.

> *"Uhm en na die tyd veral met die graad 8 Huistaal klas was ek onseker of hulle… of hulle die lydend en bedrywend verstaan. Ek het vir hulle sekere stappe gegee in hulle notatjies en die stappe moes hulle die heeltyd oor en oor en oor in die klas herhaal, maar jy is nog steeds nie seker het dit nou gewerk of het dit nou nie gewerk nie. (lag)"* (P5-I)
>
> *"…the ok am I doing this right? Is this beneficial or am I wasting time? Are they receiving and learning, or is this just a by the way thing?"* (P4-I)
>
> *"Also, I think the…the uncertainty of… of… of what they're going to produce."* (P3-I)

5.5.2.2   Creativity

One of the most exciting discoveries, which can be explored in much more depth, is the role of creativity and its parallel link with pedagogical instruction as well as its potential to counter the passive learning phenomenon. As will be seen later under the sub-theme *Pedagogy*, teachers' lessons generally demonstrated higher levels of creative input. Within this category, however, participants emphasised a greater emotional demand when it came to untapping their creative resources. The relationship between teachers' creative output, the contributing factors which directly influence

these and the quality of educational experiences is explored in greater depth in the following chapter.

> *"I was so overwhelmed with everything else that I guess I... I didn't think that I could be creative with coming up with flipped lessons."* (P4-I)
>
> *"But I know it's also going to take a little bit of patience and a little bit more effort and a lot more creativity, which I don't mind. (laughs)"* (P4-I)
>
> *"Yes, although time constraints over the past few weeks have dampened my creative sources."* (P6-FQ)

5.5.3 SUB-THEME 3: TEACHER ROLE

One of the greatest shifts in the move to a learner-centred teaching approach, is the change in the teacher role it envisages. Instead of being 'centre stage', teachers have to make a deliberate decision to take a step back and move into a facilitation role. The data revealed that *Teacher role* strongly links with the sub-theme *Control* which receives focus later within this theme. *Teacher role* consists of three categories: *Teacher choice or action*, *Difficulty associated with role change* and *Facilitator.*

5.5.3.1   Teacher choice or action

From their responses, it became clear that the participants had to make a conscious decision, or that they took certain actions to allow learners to take responsibility for their work or learning opportunities. This, however, was not always easy to accomplish. Even so, their choices positively affected learners' autonomous learning experiences and encouraged them to explore alternative lines of thought, which can ultimately lead to richer learning experiences.

> *"So…so I'm really allowing the kids too… take their responsibility for their work, uhm…"* (P4-I)
>
> *"And what I realize is when I open these discussions with the learners what they gave back was just the means...not being forced to think in a certain way."* (P1-I)
>
> *"I always tell them I'm not here to always write down every single note that I'm saying you're gonna have to learn to do it yourself and to make notes and make questions and make answers for yourself because no one is going to do it for you for the rest of your life."* (P1-I)
>
> *"Some people came back and they were like 'Mam, I read this. And do you think this is similar?' And I was like 'What do you think? Why are you asking me? What do you think? Tell me.' And then it was very interesting."* (P1-I)
>
> *"But teachers who do ALL the talking, silence their learners' voices, which means the content remains abstract and the learners main concern is to try and remember everything."* (P7-FQ)

> *"You need to relinquish control and you need to trust that the kids are going to do that, that they're going to do what you've asked them to do. (pulls face) Scary."* (P3-I)

5.5.3.2   Difficulty associated with role change

Participants underlined the difficulties and challenges when stepping into the role of facilitator. This included less teacher talk as well as allowing learners to engage with the content unguided by the teachers' expertise and/or their content knowledge. This, in one instance, also translated into teacher affect where the participant felt guilty when she took a step back allowing her learners to take the lead.

> *"Uhm, en tydens die lesse was dit moeilik as jy gewoond is om as juffrou die heeltyd klas te gee om vir jouself te sê oukei bly nou stil."* (P5-I)
>
> *"The general EGD teacher prefer to follow instructions. They don't want to get out of the driving seat."* (P7-FQ)
>
> *"I think the biggest change, the biggest sort of move, is uh (laughs) uh, learning how to relinquish control because...You… think that you need to be in control of the content all the time."* (P3-I)
>
> *"O, yes it was, it was weird for me in a sense, to sit back and allow them to take the stage, basically. To take charge, uhm…"* (P4-I)
>
> *"Met my graad 8 Addisionele Taal klas het ek Betekenisleer gedoen en hulle moes die Betekenisleer beskryf of verduidelik. En dan is dit moeilik om as hulle 'n foutjie maak of as hulle ietsie nie sê nie om nie gou-gou in te chip nie. So ja dit was nogals moeilik. Uhm…"* (P5-I)
>
> *"I felt a little bit guilty, I have to say, uhm… because I…I took a seat and they… were able to regulate themselves and they were quite disciplined throughout the class, and I could help and give input."* (P4-I)
>
> *"Leerders moet tydens die klasaktiwiteit tot 'n groter mate "op hulle eie" gelos word en self meer inligting ontsyfer oor die gebruik van die woordeboek. Ek sal in die vervolg minder leiding in hierdie verband gee."* (P5-RD)

5.5.3.3   Facilitator

The research participants acknowledged their role as facilitator and also highlighted key aspects within this role. They detailed that they were there to provide help or support where needed and correct learners should they go astray. The first participant quote beautifully captures the main idea for this category, where teachers are seen as a guide to help learners navigate their individual learning experiences. Teachers should also place a higher regard on listening, contrary to the traditional classroom where teacher talk dominates.

"At the end of the day, the teacher can feature as a facilitator in the passenger seat, guiding learners in the driving seat of their own learning." (P7-FQ)

"But uhm, but I was also there so that if I felt that they were going off track, I could help them and I could ask them questions and feed in and stuff like that as well." (P3-I)

"I felt a little bit guilty, I have to say, uhm… because I… I took a seat and they… were able to regulate themselves and they were quite disciplined throughout the class, and I could help and give input. But it was literally…. almost like saying ok here is all of the resources here is everything now you figure it out, and as a group they were able to do it beautifully. Then I went, I am supposed to get paid to teach these kids. (laughs)" (P4-I)

"When listening to learners' conceptions, teachers has the opportunity to correct learners' misunderstandings about content. If learners took the wrong turn help them to know the map, so that they can get back on track again…" (P7-FQ)

"To help the learner making sense of uncertainty, it's important to put the learner behind the steering wheel and give the learner a voice to display their own interpretation…" (P7-FQ)

"Teachers are supposed to prepare them to drive the road on their own." (P7-FQ)

5.5.4 SUB-THEME 4: EMOTIONS

As with the *Learners* theme, teachers were equally impacted on an emotional level when implementing the AFCP. At the positive end, their excitement is conveyed through providing their school principals with feedback the day following the online training session on what they have learned. They also commented on the fun they experienced while teaching via the AFCP. At the opposite end, the category *Negative* features participants' negative emotions when introducing the AFCP. For example, they viewed the change as a challenge and experienced increased levels of anxiety. The sub-theme *Emotions* consists of two categories: *Positive* and *Negative.*

5.5.4.1 Positive

It is important to note that even though the participants experienced negative emotions prior to or whilst implementing the AFCP, their positive emotions ultimately outweighed the negative ones. When questioned during their online interviews, all participants who experimented with the AFCP indicated that they will use it again in the future. Participants used words that are emotionally laden such as 'love it' and 'best teaching week', which reflect the strong positive emotions associated with their experience.

> *"Ja, I loved the examples that you did when we met the previous time. And I told my principal the following day as well, that everything that you used in your examples."* (P2-I)
>
> *"In my case the principal is very enthusiastic for me to try this and report back on your training to the high school."* (P9-SR)
>
> *"I just want to say that I really enjoyed it, like I really want you to know that it was really, really fun."* (P1-I)
>
> *"But yeah, they were excited and when they got excited, I got excited, and we quite enjoyed figures of speech."* (P4-I)
>
> *"Hierdie is vir my 'n hele nuwe ding, ek love dit."* (P2-I)
>
> *"…really enjoyed it and I wish to do it in every lesson, uhm."* (P4-I)
>
> *"We started school last week, so I began to implement it from day 1. Best teaching week I've had in years."* (P9-SR)
>
> *"But I know it's also going to take a little bit of patience…"* (P4-I)
>
> *"I actually didn't experience it as a very difficult thing to do."* (P1-I)
>
> *"…liked the way that you have approached the flipped classroom from a South African perspective, with all its technological and logistical challenges."* (P9-SR)

5.5.4.2   Negative

From a holistic perspective, participants found the shift from a teacher-centred to a learner centred approach challenging. One could also contend that the novelty surrounding the introduction of an AFCP and the uncertainty of the outcomes, such as whether it would be successful or whether learners would be receptive towards the intervention, might have played a significant part. Although the negative emotion anxiety and/or fear was highlighted four times, three of these quotations came from a first-year teacher's experience. This was not the case with the participants whose teaching experience fell within the 4+ years categories.

> *"Change, change is difficult."* (P3-I)
>
> *"…you need to trust that the kids are going to do that, that they're going to do what you've asked them to do. (pulls face) Scary."* (P3-I)
>
> *"…but I think getting started is a bit of a difficult thing."* (P1-I)
>
> *"And then they…They're really not, and then that makes it quite hard, because like I said, when learners come back and you're like 'OK who watched the video?' And then it's like 6 and then you're like 'Cool'. [pause] I'm like 'Well, what if this video was really in the exam? What if this video was important? You won't know. I haven't said the exams yet and now I'm in the mood to just put it in just for the fun of it', because sometimes I feel like that. And it was so challenging."* (P1-I)
>
> *"I feel like I'm a perfectionist, and I know I'm a perfectionist, and I like to do something right and I... I think I had a fear of failing."* (P4-I)

> *"So ja, it was, I was nervous at first, it was like a roller coaster, nervous at first…"* (P4-I)
>
> *"I also got so nervous. Uhm…That was not necessary. I don't know why (laughs) I'm not a very anxious person to begin with, so."* (P4-I)
>
> *"And I was very shocked in it as well, 'cause I was just like I think I've been limiting their abilities for so long and it actually just created such a cool way of learning."* (P1-I)

5.5.5 SUB-THEME 5: CONTROL

Overall, *Control* surfaced primarily as one of the strongest themes when analysis of the data was conducted. Teachers hold the power in their hands to increase or withdraw educational opportunities that foster learner autonomy and, consequently, a sense of competence and independence. As briefly discussed under *Teacher role*, teachers had to act, which demonstrates that the locus of control is situated within them to initiate the change. As will be seen in this category, teachers find relinquishing control challenging for a variety of reasons. It is furthermore important to note that the data revealed that external factors also contribute to whether teachers are willing to retain or waive their sense of control. *Control* consists of four categories: *Teacher mindset or belief*, *Teacher habit*, *Negative impact* and *Positive outcomes of less control*.

5.5.5.1 Teacher mindset or belief

Within this category, the notion of teachers' mindset or beliefs surface as potentially deriving from teachers' identities. Participants communicated a certain mindset or belief and gave explanation of how these are formed or influenced. One participant referred to character traits whereas another mentioned her traditional tertiary education. In a third instance, reference was made to the influence of the older generation of teachers, which may counter a move towards learner-centred education. 'Outside of the box thinking' was also highlighted which, by implication, may suggest a more limited mindset which needed to be overcome.

> *"Basically, because I'm such a theatre person… my classroom is my stage."* (P4-I)
>
> *"I feel like I'm a perfectionist, and I know I'm a perfectionist, and I like to do something right..."* (P4-I)
>
> *"I was so set in this is how the class is, this is how I teach, that I felt like these kids are just going to not receive and be receptive at all."* (P4-I)

> *"But I think it's a mindset and it was something that I had to learn to just be like, it's OK to just work that extra hour or to put that extra time in."* (P2-I)
>
> *"Was it easier or was it difficult? It was… the whole move to go from a… conservative in a box kind of teacher the way you know the way we were taught at university way back… uhm, I used to teach like that and then I had this break in the private sector."* (P2-I)
>
> *"And I think many teachers are struggling with that. We are too used... teachers are used to being like soos 'n haan op 'n mishoop… Jy staan en jou klassie is jou klein koningkryk en jy wil sê die goed gebeur so en die goed gebeur so. That's why it's not always easy for staff, or for educators to adapt to new systems and new technology, etc. etc."* (P2-I)
>
> *"The general EGD teacher prefer to follow instructions. They don't want to get out of the driving seat… HOD's also expect their teachers to follow certain patterns that work for them. Maybe, after 10 years after a generation of teachers left the school system, the flipped approach will see the light."* (P7-FQ)
>
> *"With my current classroom setup, it lends itself really well to your techniques, and a small class just means we'll need to think outside the box a bit when it comes to some of the activities."* (AD-I)
>
> *"It was definitely me. (interviewer laughs) I was my biggest challenge, because I was so set in the traditional teacher-centred passive learning type of "vibe"…"* (P4-I)
>
> *"I quite felt territorial about my space… about my white bord… (laughs)"* (P4-I)

5.5.5.2 Teacher habit

Directly linked to teacher mindset in the previous category, are teachers' habitual actions. Participants explicitly acknowledged that they ought to change the pedagogical habits associated with the passive learning phenomenon. In certain instances, the participants reverted to their traditional teaching habits when they were preparing for the AFCP or were met with resistance when implementing the intervention. One participant also commented on teachers' 'comfort zone' and in doing so, the danger of habits that can oppose change and ultimately progress, were emphasised.

> *"But I feel like, we can break that, we can break that habit."* (P4-I)
>
> *"Ek dink dit is maar net gewoonte. Jy is gewoond jy is in beheer, van die klas en jy moet die meeste van die praatwerk doen, ja."* (P5-I)
>
> *"In this age we cannot do it the way "we have always done it…"* (AD-I)
>
> *" 'We're gonna do this now. Whether you wanna watch the video or not.' So I made them watch it in class and then come up with questions as well."* (P1-I)
>
> *"As jou les goed beplan is, het jy nie dissipline probleme nie. Ja jy moet net nie in so flipped classroom situasie instap en nou uit jou kop uit op jou voete probeer wing ons gaan nou dit of dat probeer doen nie. Maar as jy instap en jou goed is voorberei en reg en jy weet jy gaan dit en dit en dit met die kinders doen dat het jy 'n minimum dissipline probleme."* (P2-I)

> *"Maar 'n groot ding, is om die hele personeel te kry om saam entoesiasties te raak om saam te wil leer, want jy sit met hierdie mense wat uhm hulle is in hulle comfort zone."* (P2-I)
>
> *"…and I felt that…I think because it was it's so like hammered into me that you have to be at the front, you have to teach. They also tell us all the time that we are not allowed to sit at our desks. We have to be in front of the class."* (P4-I)

5.5.5.3 Negative impact

It is not always what participants say directly that stands out in qualitative data. Sometimes, qualitative researchers read between the lines and make inferences in the data as to what has *not* been explicitly stated, yet been communicated by their participants. In some instances, this has been the case with the category *Negative impact*. Teachers captured some of the potential negative effects or lost opportunities regarding learners' education, growth and development when predominantly relying on a teacher-centred approach to teaching.

> *"They will become eager to learn because they are included in the learning process."* (P8-FQ)
>
> *"…sometimes if we control the way learners learn or how they think, we might just take their creativity away of looking at something and thinking: Why is it like that?"* (P1-I)
>
> *"But the moment you are prepared, your your work is more concise, it's more to the point. It's uh, it's goal oriented…"* (P2-I)
>
> *"When they are writing end exam, they are supposed to know the map and adapt where they needed to. Teachers are supposed to prepare them to drive the road on their own. To conclude, the rich (inquisitive) learner will get richer, but the poor (instructed drilled) might turn worse."* (P7-FQ)
>
> *"In this age we cannot do it the way "we have always done it" - our students are not prepared for life, are not empowered to make changes in the world and are not able to work as part of an altruistic team."* (P9-SR)

5.5.5.4 Positive outcomes of less control

This category mostly captures special moments where learners exceeded participants' expectations after they introduced learner-centred pre-class or in-class activities. One participant also suggested that teachers have more 'breathing room' as learners have to manage the in-class cooperative learning activities on their own. What this potentially highlights, is the immense responsibility teachers that often carry when taking the full responsibility for learning in the teacher-centred classroom. This may ultimately result in a heavy emotional burden that is not always accounted for in the teaching profession.

> "For one lesson I asked them to find me 5 fun facts about the sun (to introduce Astronomy Natural Science) and one student came up with 2 pages because it "was so interesting". This from the child who usually spends all lesson yawning or disturbing the others." (P9-SR)
>
> "And I must be I must be honest, I was actually very surprised on how intelligent their questions were." (P1-I)
>
> "Ek het spesifiek lydend en bedrywend as een van my onderwerpe gekies omdat dit 'moeiliker' taalwerk is en ek was verbaas om te sien dat die leerders dit eintlik "op hulle eie" kon regkry." (P5-RD)
>
> "Learners interacted well and I saw such an amazing side to my learners." (P1-RD)
>
> "Uh, I think it would also give the…the teachers a little bit of breathing room. Because they have to let the kids go and do their own work. For some of it." (P3-I)

5.5.6 SUB-THEME 6: PEDAGOGY

Teachers' pedagogical choices form a central part of their daily classroom activities. These have the potential to set the tone of the learning experience and as such have an enormous impact on whether learners are encouraged to participate in the learning process. This places a high demand on teachers, as their pedagogical approach ought to be relevant for a variety of learners all with unique skillsets, strengths and learning needs. It is for this reason that the researcher developed an intervention that is situated within modern theories of learning and influenced by current neuroeducation research that provides educators with insights on how the brain learns naturally. A pedagogic approach that accommodates learners' natural way of learning not only benefits learners, but also advantages teachers. These positive learning experiences ultimately translate into the overall classroom atmosphere which may then have an impact on classroom management as well as the teacher-learner relationship.

Fundamental to the *Pedagogy* theme, is teachers' planning when implementing the AFCP. Participants remarked on a greater time input when preparing the resources to introduce the AFCP. At the same time, however, participants' learning activities demonstrated high levels of creativity. Highlighted also within this category, is a direct link to the pillars of Flipped Learning and how teachers automatically observed these without formally being introduced to these concepts during the online training session. Lastly, reference is made to neurobiological processes, which necessitate the inclusion of neuroeducation as a category within this sub-theme. *Pedagogy* consists of four categories: *Planning*, *Creativity*, *Pillars of FLIP* and *Neuroeducation*.

5.5.6.1 Planning

When preparing to introduce the AFCP, participants mentioned a variety of factors that they considered. In certain cases, they also suggested alternatives to their plans or ideas based on the outcomes of their lessons. Similar to the FC literature, participants found their overall preparation time increase. One participant also mentioned that it encompasses a different way of planning altogether and that one has to learn to think differently when approaching the overall planning. Participants also indicated that they made adaptions to the AFCP (for example, excluded the pre-class activities) possibly to suit their contexts or to start by introducing learner-centred in-class activities. Lastly, one participant made reference to resources (such as textbooks) in general and how these have to be redesigned for his subject to suit an AFCP approach.

> *"I (pause). I… this is actually not something that they did at home, so. I set up a digital Escape room. It took me 2-3 hours to do it, on ratios, for Gr 10 Math Literacy."* (P2-I)
>
> *"Finding the time to put it all together. Because obviously it doesn't, it's not just time to create the…the resource and put the…the task together, you also have to think it through quite carefully. Because you're not... the whole point is that you're not in control, so you can't, you know, manage it as it goes along."* (P3-I)
>
> *"Strain on teacher to redevelop lessons to fit Flipped approach."* (P6-FQ)
>
> *"I think I already kind of do like I... I take the bits that I like. And then I use those then take the…the bits that suit me and I use those. So, I don't think I'll ever manage a classic kind of lesson plan uhm, based on it, but I'll definitely use things over and over again."* (P3-I)
>
> *"Uhm, ek dink om so half 'n plan vooruit te maak. Terwyl as jy op 'n tradisionele manier skoolhou dan skryf jy nou maar net in jou beplanning neer dis nou wat ek doen en jou powerpoint is daar en daar gaan jy."* (P5-I)
>
> *"Indien ander of moeiliker inhoud bespreek word, sal ek graag die aktiwiteite wat tydens die les plaasvind meer wil struktureer."* (P5-RD)
>
> *"Dit vereis 'n ander manier van dink en voorbereiding. Die opvoeder moet 'n bietjie meer vooruit dink om die pre-klas aktiwiteite saam te stel en leerders voor te berei op wat van hulle verwag word. Dit is net 'n ander manier van dink wat aangeleer moet word."* (P5-RD)
>
> *"Teachers (or handbook writers) has to redesign content lessons, to guide the learner with scaffoldings to overcome the uncertainty. The scaffolding should be presented like "hyperlinks" so that the learner can utilise scaffolding where needed."* (P7-FQ)
>
> *"As jou les goed beplan is, het jy nie dissipline probleme nie. Ja jy moet net nie in so flipped classroom situasie instap en nou uit jou kop uit op jou voete probeer wing ons gaan nou dit of dat probeer doen nie."* (P2-I)

"I think it would have allowed me to do so much more because it's just it feels like you sometimes have to either let something else go to make time for something. And that's where I started then realizing that I'm becoming like the students who are complaining about not having enough time. So I started actually working out a schedule for myself and actually deciding that sometimes I'll stay that extra hour or so after school and just do it and then go to gym a bit later and stuff like that. But I think it's a mindset and it was something that I had to learn to just be like, it's OK to just work that extra hour or to put that extra time in." (P1-I)

5.5.6.2   Creativity

Participants' lessons demonstrated high levels of creativity. One played educational games (bingo) whereas others used activities that resonate with Gen Z such as a digital escape the room or identifying literary terms (poetry) from modern songs.

"I set up a digital Escape room. It took me 2-3 hours to do it, on ratios, for Gr 10 Math Literacy. And then when I had the children the first period, they had to spend working on their cell phones through my flipped classroom… finding all the uhm the…the links that I hid, and etc. etc. And each link had an activity where it was a video clip or podcast or a whatever. Uh, some of the some of the links were quizzes. Uh, and I allowed them to leave the classroom to do it on their own outside." (P2-I)

"I've had songs play and then I pause [the music] and they had to identify what type of figure of speech can you identify in this song." (P4-I)

"Leerders het 'n kort uittreksel gekry wat hulle moes bestudeer om te sien wat die klemmerkers ens. in 'n woordeboek is. Woordeboek-bingo was deel van die klasaktiwiteit." (P5-RD)

5.5.6.3   Pillar - FLIP

Central to the Flipped learning approach are the *Pillars of FLIP* (**F**lexible environment, **L**earning culture, **I**ntentional content and **P**rofessional educator), as discussed in the literature review section of the study. Although the Pillars were not discussed during the online training session, the data showed that participants unknowingly incorporated or touched on these when introducing the AFCP.

Flexible environment

"If someone walked into my class, it would have seemed like… the kids were playing around, not working, but they were. It just it looked different."

"Flexibility: learners can work and rework certain aspects of the syllabus in their own time, depending on the layout of the subjects' learning structure." (P6-FQ)

Learning culture

"…and have learnt so much more than was in the textbooks. In fact I overheard two students talking - the one had been away all week and she asked her friend what work she needed to catch up on, and her friend replied 'We didn't do any of the actual text book work, we did the new learning way and used our brains to think of stuff so now when we begin the work this week it makes sense'." (P9-SR)

"The whole discussion that eventually I'd be like 'OK, you guys need to pack up. We have two minutes, the bells ringing' and they're like 'No Mam we have to stay.' I'm like no, no you have to go, its two minutes the bells gonna ring now' and I had to break the conversation and I just I hated doing it. But it was just amazing that it was so fuelled, and I was just like for once. I just felt like I was sitting around learners that actually were not just being told what to think, and we were actually having conversations." (P1-I)

"Yeah, I was there facilitating and... from an outsider's perspective. If someone walked into my class, it would have seemed like… the kids were playing around, not working, but they were. It just it looked different." (P4-I)

"So, there was also enough, uh, they were enough girls in a group that they didn't all have to present and they didn't all have to write notes and they didn't all have to make a presentation. So, the idea was that two or three of them would present to the class orally. Uhm, and then the rest of them would help with creating the presentations. So, you've got the the…the kids who are uhm, who are strong vocally you confident to present. You've got the kids who are confident to do design work. Got the kids who…who are confident to do research and then the kids who write well and but they all had to contribute and help each other so they had their strengths but they were working together as well, yea." (P3-I)

Intentional content

"It also takes a little bit more work because you have to prepare the resources you have to prepare the tasks so that they are… So that they are, uh, scaffolded and…suited to a flipped classroom. I mean, you can do it with almost any task." (P3-I)

"Finding the time to put it all together. Because obviously it doesn't, it's not just time to create the… the resource and put the the task together, you also have to think it through quite carefully. Because you're not... the whole point is that you're not in control, so you can't, you know, manage it as it goes along." (P3-I)

"Nou moet jy vooruit dink hoe gaan ek dit vir die kinders gee om te doen, of ja. Jy moet bietjie meer vooruit dink as net o ek doen dit vandag." (P5-I)

"Uhm, and I put them into groups, and I asked them to create a lesson. Uh, I gave them each a role. I asked them to create a lesson which had to include visual elements. It had to include some questions, some study questions. It had to include an introduction and an analysis and also some feedback. Uhm, and I also gave them a list of methods to analyse a poem so. Uhm, their Smile and Swift and Salts and then a few others that I've that I've thought of. And I gave them… a couple of lessons to do that in. So spent some time gathering their information. Uhm, I also made a… they were allowed to use some questions that I'd used before. And they were allowed to use the English Experience Poetry guide. Uhm, and they were allowed to use anything they could find on the Internet." (P3-I)

"But I know it's also going to take a little bit of patience and a little bit more effort and a lot more creativity, which I don't mind. (laughs)" (P4-I)

Professional educator

"Not stepping in, not telling them that they're wrong, letting them… letting them… figure out that they're on the right path or on the wrong path on their own." (P3-I)

> *"I was not there. Not teaching like… giving them information… I was observing facilitating in the background, sitting there, making comments, helping, but I wasn't. I wasn't at my desk, I wasn't at in front of the bord, I was just…I was just there. (shrugs & laughs)"* (P4-I)
>
> *"Uhm, and being ready to... (chuckles) catch them if they're... going in the wrong... going in the wrong direction."* (P3-I)
>
> *"Kyk hier so dit help nie jy probeer te veel nuwe feite in 'n les indruk met kinders nie hulle breine kan net nie te veel nuwe feite hanteer nie. I find that if your lessons are well prepared you don't, you don't share too much. It's when you are not prepared, or you try to wing a flipped classroom or whatever classroom. Then you tend to give too much work or too many pages whatever the case is. But the moment you are prepared, your…your work is more concise, it's more to the point. It's uh, it's goal oriented, and the children definitely uhm... it definitely has a different cognitive effect on them."* (P2-I)

5.5.6.4 Neuroeducation

Without explicitly being asked to do so, participants noted the influence of the brain in the way humans learn naturally. They also touched on existing theories relating to brain-based research. The knowledge conveyed may form part of the information obtained via continuous professional development opportunities on the FC, as five participants mentioned that they had been introduced to the FC prior to the online training session. Having this knowledge may serve as an incentive or motivation to phase in the AFCP as part of their pedagogic practice, as they recognise the greater educational value or benefits for their learners.

> *"The flipped approach aligns with what is normal for our learners. Learning is part of living. Learning is supposed to be normal. Not sit down and listen to lectures…"* (P7-FQ)
>
> *"Suppose it also, depending on how you do it and if you're clever about it and you use, you know multiple intelligences and stuff you can… you can adapt it so that they can work with their intelligence."* (P3-I)
>
> *"Uh, I, it's definitely going to develop their frontal cortex' differently to when you are not using that."* (P2-I)
>
> *"…and have learnt so much more than was in the textbooks. In fact I overheard two students talking - the one had been away all week and she asked her friend what work she needed to catch up on, and her friend replied: 'We didn't do any of the actual text book work, we did the new learning way and used our brains to think of stuff so now when we begin the work this week it makes sense.'"* (P9-SR)

5.5.7 SUB-THEME 7: TEACHER GROWTH AND DEVELOPMENT

Taking the time to attend the online training session and participating in the study strongly suggest that the participants, who voluntarily participated in the study, are serious about investing in professional development. Activities like these are prone to add professional value in the sense that they provide educators with novel or innovative ideas to experiment with-in their classes. Alternatively, they can add to their existing

knowledge base by adding to their expertise. Consequently, this is transferred into their classes and their learners' educational experiences are enriched. Ironically it also demonstrates the need for teachers to foster self-determined behaviour to counter the passive teaching phenomenon. *Teacher growth and development* consists of two categories: *Online training* and *Teacher traits*.

5.5.7.1   Online training session

All participants were explicitly asked why they attended the online training session. Their reasons are grounded primarily in three groups. The first connects to participants' need or desire to improve their pedagogic practice. The second relates to their working context at the time, specifically during the pandemic. It seemed as if the Covid-19 pandemic in many ways served as a catalyst to drive teacher continuous professional development at the time, thereby leading to increased experimentation with and/or investment in innovative pedagogic approaches during that period. Lastly, one participant sympathised with the researcher stating that research participants are often difficult to obtain, which served as one of his motivations for participating and ultimately contributing to the research.

Improving pedagogic practice

"Just because I feel like the way we teach is not good enough anymore and it's I'm so over teaching 'Here's the textbook I'm just going to read out of it' or 'Here's the information here we go'." (P1-I)

"And then when I saw the way your whole thing was going with the whole flipped classroom, then I really wanted to do it, because I think preparing our learners for what's really happening in this world and what's really happening at university is so important. And them actually realizing how important it is to do research before the time or to read something before the time or to give their perspective or something. Because what if it's a perspective I've never thought of?" (P1-I)

"My inquisitiveness forced me to participate for there is possibilities that I can adapt my planning, or make it a practical realisation." (P7-FQ)

"Interested in innovating French lessons." (P6-FQ)

"…but wanted more practical concepts, especially regarding language classes." (P6-FQ)

"In my mind's eye, I tried to create a parallel pathway next to my classroom in the clouds, where learners can follow my lessons without attending classroom. Although I have the idea in my mind, the application on google classroom aren't there yet. And then I received this online invitation." (P7-FQ)

"I would like to learn about new approaches in learning and teaching that I can apply in my class." (P8-FQ)

> *"You know, I really… I really believed in in a student-centred learning as opposed to the chalk and talk model uhm, and so it immediately appealed to me."* (P3-I)
>
> *"…and because you said quite clearly that you're looking at flipped classroom in a South African context, and I thought, well, this would be… this sounds really good, this sounds really relevant. And I found that... I did find it relevant and interesting, so yeah."* (P3-I)
>
> ***Work environment and continuous professional development***
>
> *"Due to COVID regulations, I see learners 4/5 of the time less than usual. To overcome this time barrier, I search for ways to cover the content at home so that I can spend more time to elicit understanding in the classroom."* (P7-FQ)
>
> *"It's just the topic was of interest to me where we are at the school at the moment."* (P2-I)
>
> *"I'm trying to remember how… well through other bits of staff development over the course of teaching. Uhm, and the concept I think makes a lot of sense."* (P3-I)
>
> *"Uhm, ek het in Lockdown begin oplees oor die flipped classroom verlede jaar. En toe het ek dit begin… ek het gekyk wat is die patrone wat mense volg of wat is die modelle wat mense volg. Toe het ek dit begin doen in my klas, maar die klasse waarmee ek dit kon regkry is net Letterkunde klasse. So ek wou geweet het hoe gaan mens dit doen met Taal, want dit is die een ding wat dit voel asof jy die heeltyd besig is om net inligting te gee en jy weet nie of die klas enigsins iets inneem nie. So ja, ek wou meer geweet het oor wat is die regte strategieë om te volg sodat jy weet hoe om die flipped classroom ook in Taal onderrig te gebruik."* (P5-I)
>
> *"I did a short course in flipped classroom management through UCT just before… the holiday, before I moved here in 2019, actually. And I loved what I learned there and then uhm… we've been touching on it at school and working on it, we had a workshop where the principal facilitated the whole staff with regard to this. I've tried this as well on and off at school… And I'm extremely interested in this kind of thing."* (P2-I)
>
> *"I've tried this as well on and off at school… And I'm extremely interested in this kind of thing."* (P2-I)
>
> *"…we've been touching on it at school and working on it, we had a workshop where the principal facilitated the whole staff with regard to this."* (P2-I)
>
> *"I read the poster and I remember that in my classes, my PGCE classes, they talked about the flip method and that's what they use and I kind of got a little bit of experience in the flip, because that's the method that my Creative Arts lecturer wanted us to use when we went into teaching practice, so that was quite fun."* (P4-I)
>
> ***Sympathy***
>
> *"I know how difficult it is to find participants."* (P7-FQ)

5.5.7.2   Teacher traits

In the previous category, it became evident that participants' decision to participate in the online training session primary stemmed from a professional stance. Within this category, however, the decision was driven by personal attributes of the participants. As seen below, it became evident that participants demonstrated certain key characteristics associated with growth and development, which includes aspects such

as personal drive, positive risk-taking, having a positive mindset, being able to solve problems creatively and having the right attitude.

> *"Uhm, so ja ek het al van tevore die flipped classroom probeer, maar soos ek vir jou gesê het, nog glad nie met Taal nie. So… ek was 'n bietjie onseker oor hoe om dit te benader met Taal, maar ek het besluit ek gaan Taallesse daarmee doen, want dit is… wat ek wil weet. Uhm, en tydens die lesse was dit moeilik as jy gewoond is om as juffrou die heeltyd klas te gee om vir jouself te sê oukei bly nou stil. (glimlag)"* (P5-I)
>
> *"Mm, mm, I think that's a big thing is that you…you have to see it as an experiment.*
> *Interviewer: That's a good approach.*
> *P3: You…you have to see it as an experiment and look and evaluate afterwards and figure you know, decide what worked, what didn't what… And then try again."* (P3-I)
>
> *"I tend to watch it as well. I'm a very like documentary freak in watching like a lot of documentaries and Ted talks and stuff like that. I think it's very important to do it because I always believe that you're an example so you cannot tell learners to do these things if you're not doing it yourself."* (P1-I)
>
> *"I teach a group of 12 Grade 7's who by Grade 5 had earned themselves the reputation of being the "naughtiest" class ever. Mostly because there was so much infighting, quarrelling and, well, bitchiness. After 30 years teaching, I know that happy kids are learning kids - so researched ways to change things up. I turned my classroom into a coffee shop! With Cafe background music, a coffee machine bubbling away every Friday, a couch, dining tables, bean bags, rugs to sit on, chalkboard sayings, and a relaxed atmosphere. I must say I thought it was going to be chaos - and I'm a very "ducks in a row" sort of person...and yes, it's much noisier...but no one has managed to be sent to the principal's office so far, no major infighting, no particular discipline issues, and on the whole a noticeably happier, and much more self-disciplined class. From seating - who knew!!"* (P9-SR)
>
> *"Uhm, and I know I always was kind of growing into this thing of new things and creative things, etc. but when COVID started last year we were forced. This whole process was accelerated like crazily."* (P2-I)
>
> *"So, it has a lot to do with attitude, I think my attitude is fine, so I don't struggle as much as many other teachers."* (P2-I)

5.5.8   SUB-THEME 8: OTHER FACTORS

To conclude this theme, it is important to examine two more categories that have not been represented in the discussion. Within the first category, participants' reflections are communicated from a holistic point of view after implementing the AFCP. They commented on their overall experience, how refreshing they found this alternative approach in comparison to the traditional classroom and how learners will benefit from this in the time to come.

Within the second category, participants recognised *Time* as a deciding factor when having to prepare for or implement the AFCP altogether. Greater care had to be taken when planning for the AFCP due to the limited control assigned to the teacher as well as the unpredictability of the learning outcome. In some instances, time was viewed by

participants as a barrier to implement the AFCP. The sub-theme *Other factors* consists of two categories: *Teacher success and long-term value and Time.*

5.5.8.1   Teacher success and long-term value

It was decided to include this category in the data analysis chapter as the participants' overall positive experiences testify both to the applicability of the intervention as well as how it can successfully counter the passive learning phenomenon. In one particular case, the participant recognised her discomfort with teaching via the traditional approach after having had the AFCP experience. Participants could see the educational value and the potential power of the intervention to impact their learners long-term, as the AFCP creates opportunities to develop learners' life skills that might prepare them better for the future. This may ultimately encourage participants to continue using the AFCP henceforth.

"…and it actually just created such a cool way of learning." (P1-I)

"And I found that... I did find it relevant and interesting, so yeah." (P3-I)

"I really see a purpose in this." (P1-I)

"[Learner] 'Oh but isn't it like this in the video that they were speaking about?' And then I realized. This is working. This is really working. (hand gesture A-ha moment) (smiles)" (P1-I)

"And I find that it worked very, very well." (P3-I)

"It was a hit. They embraced the idea." (P9-SR)

"At the moment we're starting on, we're starting on our matric Shakespeare, so we're doing The Tempest, and I have to lecture them. And it's so different because I have to tell them everything. They are absorbing it because they're clever and they listen, but it's very much coming from me at the moment and I need to, I need to sort that out (P3 & interviewer laughs), I need to do something with them that… they get the reins again because it's not, it's too one way at the moment. They like it, yeah and my the younger grades, they also like it…" (P3-I)

"Uhm, it was enlightening to see their perspectives change…" (P4-I)

"…so, they will benefit from it you know for the time to come." (P2-I)

"Well, I mean, if we if we are able to…to teach "life skills" to the kids, they would not only be able to apply this to write a test and get good marks, but they will also be able to apply this to other things in life." (P4-I)

"…not understanding how… it will benefit them long-term doing these things." (P1-I)

"…will help learners to become responsible citizens and eager to contribute to the development of their community." (P8-FQ)

> *"I was thinking... honestly what I was thinking of, is the type of classroom I found in the Eastern Cape, where there was… the grade 8 classroom was… I don't know how big it was but it wasn't a huge classroom and they were 60 children in there and they were sitting two to a chair and they could not... and you could not move it into… into any kind of other formation. Uhm. But if you are giving them something slightly different to do, then you can send them outside. And they can sit in circles outside and work like that. And that's I think that's the kind of thing that this... uh, can... can allow."* (P3-I)

5.5.8.2 Time

Participants referenced *Time* in three different ways. The first included a greater investment in time to prepare for lessons when implementing the AFCP. The second referred to participants' limited time due to contextual factors such as a content laden curriculum that forced participants to teach via the traditional approach, as it essentially relies on knowledge transfer. There was, however, also a positive connotation to time especially during the pandemic. Participants could utilise their time to invest in professional development activities and experiment with alternative methods, which they normally did not have time for.

> *"So, I started actually working out a schedule for myself and actually deciding that sometimes I'll stay that extra hour or so after school and just do it and then go to gym a bit later and stuff like that."* (P1-I)
>
> *"Finding the time to put it all together. Because obviously it doesn't, it's not just time to create the…the resource and put the…the task together, you also have to think it through quite carefully."* (P3-I)
>
> *"Like I said, I just feel like if we just had more time and it wasn't always so admin driven or so content heavy, I think it would have allowed me to do so much more…"* (P1-I)
>
> *"Because next year it just gets a bit easier 'cause you have then an idea of something and you know how to work it. You just make a different video or use a different content, but you have an idea of how to do it again…"* (P1-I)
>
> *"Uhm, I personally think the Grade 8's & 9's, I don't have enough time with them ever. I see them three times in two weeks, which isn't a lot. So, with this term coming up now because exams are starting in a month, I only have 6 lessons with them. So, I summarize their work into 10 pages."* (P1-I)
>
> *"…although time constraints over the past few weeks have dampened my creative sources."* (P6-FQ)
>
> *"I (pause). I… this is actually not something that they did at home, so. I set up a digital Escape room. It took me 2-3 hours to do it, on ratios, for Gr 10 Math Literacy."* (P2-I)
>
> *"Ons is op hierdie moerse learning curve omdat ons nie nou extra murals en goed het nie. So, we are making headway with regard to that… (share feelings with regards to reintroducing extra murals) Jy weet jy is in 'n hele ander mindset nou op die oomblik. Jy het tyd om ander goed te leer en ander goed te probeer en ens. ens."* (P2-I)

5.6 THEME 3 - SYSTEMIC AND EXTERNAL FACTORS

Three sub-themes emerged from the data: *Curriculum*, *Education system* and *School context*. What follows is a presentation of each of these sub-themes with their respective categories. This theme is significant as it captures the external or systemic forces that influences or confronts participants daily that ultimately affect their pedagogical choices. It appears as if the fundamental design of the current educational system hampers a move to fully embrace learner-centred education, although this shift has been propagated in the past.
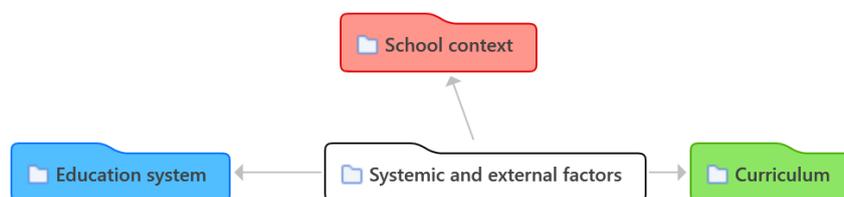
FIGURE 5.4: THEMATIC MAP – THEME 3 WITH THREE SUB-THEMES

5.6.1 SUB-THEME 1: CURRICULUM

The curriculum could be regarded as a centre piece when it comes to education as a whole. It encapsulates the knowledge, skills and values learners ought to acquire to become well-rounded and well-equipped citizens that can function in a global society. It also provides guidelines for assessment types and practices. What remains and continually surfaces however, is the highly contended quality versus quantity debate. Participants expressed their discontentment with a content-laden curriculum that burdens both learners' and teachers. This also made the exploration of the AFCP more challenging to a point that one participant used the word *sacrifice*. Having to make these difficult decisions, for example, balancing the demands of higher powers (such as management or educational policy) and the goodwill of their students, may emotionally burden teachers even further. The mismatch between what is being propagated by the outcomes of the curriculum and how this does not always transpire into classroom context, is also highlighted. The sub-theme *Curriculum* strongly links with the category *Time*, as discussed earlier, with a focus on assessment or a curriculum that is heavily content-laden. As will be seen, this pressurises teachers and

limits opportunities for creative pedagogy or a more learner-centred approach, consequently reinforcing the passive learning phenomenon.

> *"I think they're so filled with so many things. 'cause I remember in that week they were complaining about writing a Life science test a Maths test there was an English essay that they needed to hand in and an LO project. It was all in one week. And they say to me, 'Where must they find time for this 10 minute video?'"* (P1-I)
>
> *"And then they still they keep the same quantity of assessments for subjects. Daar is hier en daar ook een uitgesny but it's not… it's just a waste of time. Hulle kon eerder die assesserings baie minder gemaak het en I for example will love it if we can only maybe write June exam and a November exam… And just flippen let us teach for the rest of the time."* (P2-I)
>
> *"A problem that we do have, especially in the in the government schools, is there are way too many assessments. The teachers spend too much time on setting assessments. As die onderwysers soveel tyd spandeer het op lesvoorbereiding soos wat hulle op die opstel van assesserings spandeer dan gaan jy 'n heel ander ball game sien in hierdie land."* (P2-I)
>
> *"The CAPS states that we are supposed to deliver critical learners. The flipped approach aligns with what is normal for our learners. Learning is part of living. Learning is supposed to be normal. Not sit down and listen to lectures but distinguishing between fake info and usable info."* (P7-FQ)
>
> *"Uhm, I personally think the Grade 8's & 9's, I don't have enough time with them ever. I see them three times in two weeks, which isn't a lot. So, with this term coming up now because exams are starting in a month, I only have 6 lessons with them. So, I summarize their work into 10 pages."* (P1-I)
>
> *"They like it, yeah and my… the younger grades, they also like it, uh it's easier to do it with the younger grades because there's less pressure."* (P3-I)
>
> *"Hierdie benadering het veral goed gewerk met my EAT-klasse en jonger klasse."* (P5-RD)

5.6.2 SUB-THEME 2: EDUCATION SYSTEM

Participants recognised various flaws in the education system, which may ultimately hinder the effective implementation of pedagogic interventions such as the AFCP. They highlighted features such as the incompatibility of the system that currently favours instruction, yet Gen Z learners are growing up in the information age with unique demands in terms of skillsets. To reinforce this statement, something as simple as a school bell, which indicates when a lesson 'start' or 'end' can somewhat control learning or in some instances, fragment learners' natural learning experiences.

What also became evident, was how external factors such as high stakes testing influences learners' mindset especially in terms of their fear of failure. The danger is that, because of learners' fear and the pressure they experience surrounding summative assessment, external factors may become hindering factors when implementing educational interventions that promote a learner-centred approach.

> *"It's just something is not working in our system."* (P1-I)
>
> *"While we living in the Information era and note that information is already everywhere, we are instructing as if we are living in the industrial age (where instruction was crucial)."* (P7-FQ)
>
> *"I began teaching in 1991 and from teaching in state schools with huge classes, private schools with very affluent children to a small village school now, I have held one sentence up as both an example of fear by most teachers and a personal challenge for me: "But we've always done it this way"... In this age we cannot do it the way "we have always done it" - our students are not prepared for life, are not empowered to make changes in the world and are not able to work as part of an altruistic team."* (P9-SR)
>
> *"I've been working a lot on overseas websites of other colleges and schools overseas over the last two years, and I I'm amazed at what you find there, and the level at which they are working with the children and with their staff members and systems they have in place etc. etc. We are far behind on that… flippen baie ver."* (P2-I)
>
> *"…eventually I'd be like 'OK, you guys need to pack up. We have two minutes, the bells ringing' and they're like 'No Mam we have to stay.' I'm like no, no you have to go, its two minutes the bells gonna ring now' and I had to break the conversation and I just I hated doing it."* (P1-I)
>
> *"Two begin with, they were quite anxious. They tend to be quite anxious because they were afraid of getting it wrong. And so, I had to reassure them quite a lot that this is it's an exploration, also it's poetry, so it lends itself to that sort of thing. Uh, you know it's. It's an exploration. You don't… it's not about right or wrong, it's about what you're thinking, it's about what you find, what you interpret."* (P3-I)
>
> *"Why… why should the instructions be so… like you have to draw a line on this line and this line, and then it has to look like this. Why? If at the end of the day, the test is going to be the test and it's still gonna get handed in it doesn't really matter."* (P1-I)

5.6.3 SUB-THEME 3: SCHOOL CONTEXT

Within the previous sub-theme, the influence of the education system as a whole and its potential to enhance or hinder the effective implementation of interventions was briefly touched on. This portrays the complexity of education as a macro-system, how systems influence the agents within them and vice versa. On a smaller scale, school environments are meso-systems situated within these macro-systems. Apart from government regulations, they are predominantly influenced by leadership and management, who play an enormous part when it comes to establishing the culture and/or ethos of the school. In certain instances, the culture and/or context of the school appear to be pro-growth where innovation is welcomed. In contrast, when leadership and/or management are more conservative, it can hinder, or to a greater extreme resit an individual's drive to bring about change and explore alternative pedagogies that learners can benefit from socially, emotionally and/or intellectually.

Within the second category reference is made to the two schooling systems found in South Africa, namely Private and Public schools. Although not explicitly asked to do

so, participants shared their prior experiences within different schooling contexts. The insight obtained from their accounts provided the researcher with deeper insight as to the applicability of the AFCP intervention across various contexts. The sub-theme *School context* consists of two categories: *Influence of school culture and Public versus private schooling.*

5.6.3.1   Influence of school culture

It is important to reiterate that a school's culture has the power to inhibit or enhance educational change. This requires that all significant role players are on board. To emphasise this point, the researcher would like to highlight two of the excerpts below. The first reflects how one of the research participant's colleagues inspired and ultimately motivated her to challenge herself to present a truly challenging topic via the AFCP. In contrast, another participant, who is in top management, noted how difficult it was to bring staff on board who prefer to remain in their comfort zones.

"Ons het 'n hoof hierso wat baie 'n baie lateral thinker is en 'n baie proaktiewe leier. Hy't ons begin druk met opleiding vir e-learning en digitale goeters 3 maande voor COVID op ons neergesak het so hy het ons redelik goed voorberei daarvoor en uhm ons fokus erg op dit. En die skool het met rasse skrede spring ons wat betref digitale goeters en… metodes van onderrig en… ek kan nie vir jou sê waarmee was ons die laaste jaar besig nie." (P2-I)

*"…een van ons Wiskunde onderwysers het vir ons gevra of het ons al Kahoot gebruik om **nie** te hersien nie.*
Onderhoudvoerder: (verbaas) Oukei interessant.
CU: Soos, om die kinders te lei om iets te verstaan. Toe's ons soos nee, toe sê hy want hy het dit gedoen. Hy het 'n Kahoot gemaak wat die kinders lei om die werk te verstaan.
Onderhoudvoerder: Wow, oukei, interessant (glimlag en skud kop).
CU: En toe het hulle die werk soveel beter en soveel vinniger verstaan, uhm... as wat hy dit gewoonlik verduidelik en dan doen hulle die toepassing. En toe het ek gedink, as hy kan Wiskunde met Kahoot (lag), dan kan ons seker maar lydend en bedrywend probeer flip. Daar moet 'n manier wees." (P5-I)

"But going into all of that that chaotic mess, I just completely went back into this like this is how I know teaching to be and this is how I'm going to approach it. I'm not even going to try doing something different because disciplinary challenges, COVID with can't work in groups, uhm." (P4-I)

"I can do whatever. It's not really like limited, but with the Gr 8's and 9's and 11's I teach them with other people, so I always have to whatever do and fix that and give on." (P1-I)

"I introduced flexible seating this year, and even with the social distancing requirements the students have spent most of the year working from couches, bean bags and group tables. I allowed the students to chat while working, help each other to complete tasks and move around freely to sit in a new seat each period if they wanted to. I also had to do this as an "altered" version, as I couldn't offer very many seating alternatives with both COVID restrictions and a zero budget! My principal was delighted to lend this idea support and we have seen how it has particularly affected class cooperation." (P9-SR)

"HOD's also expect their teachers to follow certain patterns that work for them. Maybe, after 10 years after a generation of teachers left the school system, the flipped approach will see the light." (P7-FQ)

5.6.3.2   Public versus private schooling

Within this category, the difference (sometimes at extreme ends) in terms of context between the two schooling systems in South Africa, are highlighted. One may question how teachers, in more demanding schools with high teacher-learner ratios and limited resources, as well as the overall quality of education in the country, are impacted. What can also be seen, is how learners' general demeanour and mindset may be influenced by their immediate surroundings such as the community that they grow up in. One participant commented on the difficulty of teaching extremely large classes, however, she acknowledged that the AFCP would suit such a context and benefit learners in more ways than one.

"It was very eye-opening working there because it was a very uhm, it was a school that came from various backgrounds the learners and also with both boys and girls and I was sitting with 42 in a class. Interviewer: Sjo (nods).
(P3): So that was quite tough. And then the kids uhm there were there was a class that like was basically made up of all the learners that just either like failed like three or four times or just didn't want to be at school, but they come to school and it was quite tough being a teacher to them because they would laugh at their class average." (P1-I)

"Yeah, I was there facilitating and... from an outsider's perspective. If someone walked into my class, it would have seemed like… the kids were playing around, not working, but they were. It just it looked different, uhm. Yo and I felt that…I think because it was it's so like hammered into me that you have to be at the front, you have to teach. They also tell us all the time that we are not allowed to sit at our desks. We have to be in front of the class." (P4-I)

"But I've also, as part of my PGCE course, we had an option to do a month at a rural school. So I taught at a school near [sic] at a secondary senior secondary school as part of my prac. Uhm, which mostly told me that I did... I did not want to go into... Government School, and I didn't want to…. didn't feel that I was cut out too… deal with the pressures of teaching at that kind of school, even though it was incredibly rewarding." (P3-I)

"I really struggled, um, to get used to… from a private school into this Government run school." (P2-I)

"Teachers aren't given enough resources. If you actually go to the WCDE portal and they're like 'There's so much things there', there's nothing. There's absolutely nothing, and it makes it hard. It makes it hard for teachers then to be ready for anything." (P1-I)

5.7 THEME 4 - SELF-DETERMINED BEHAVIOUR

The two sub-themes within this section are directly associated with the theoretical framework of the study. These are *Self-determination Theory* and *The PAH continuum*. What follows is a clear display of the strong connection between participants' experiences and the theoretical framework of the study.

FIGURE 5.5: THEMATIC MAP – THEME 4 WITH TWO SUB-THEMES

5.7.1 SUB-THEME 1: SELF-DETERMINATION THEORY

The importance of taking action lies central to initiating the intervention and driving its successful implementation. Central to this "action" is the motivated behaviour of both teachers and learners. Directly related to the sub-research question: *To what extent, from the teachers' view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency and relatedness?* This section sheds light on the potential strength of the AFCP to activate learners' self-determined behaviours. This enables them to move from extreme passivity across the Pedagogy-Andragogy-Heutagogy continuum to become learners who ultimately initiate, regulate and drive their own learning experiences and lessen their dependence on their teachers.

Central to Deci and Ryan's Self-determination Theory, are humans' psychological need for autonomy, competence and relatedness. From these three needs, autonomy surfaced as the most prominent in the data and was discussed earlier under the theme *Learner*. However, from the data it became evident that the AFCP intervention can also activate or meet learners' need for competence and relatedness.

Competence

"Yeah, so it builds… it builds confidence." (P3-I)

"…to feel confident when they make contributions because they have a platform to do so." (P8-FQ)

> *"For one lesson I asked them to find me 5 fun facts about the sun (to introduce Astronomy Natural Science) and one student came up with 2 pages because 'it was so interesting'. This from the child who usually spends all lesson yawning or disturbing the others."* (P9-SR)
>
> **Relatedness**
>
> *"And, and I think afterwards I think they've found it very rewarding because...The, uhm, the feedback from their peers was very good and they enjoyed the process. They enjoyed, you know, digging into the…the topic on their own without being told exactly what to do."* (P3-I)
>
> *"And adding to each other's discussions, because that is how I always tell them how an idea starts or how a conversation starts."* (P1-I)
>
> *"So there was also enough, uh, they were enough girls in a group that they didn't all have to present and they didn't all have to write notes and they didn't all have to make a presentation. So the idea was that two or three of them would present to the class orally. Uhm, and then the rest of them would help with creating the presentations. So you've got the the the kids who are uhm, who are strong vocally you confident to present. You've got the kids who are confident to do design work. Got the kids who who are confident to do research and then the kids who write well and but they all had to contribute and help each other so they had their strengths but they were working together as well, yea."* (P3-I)
>
> *"But it was literally…. almost like saying ok here is all of the resources here is everything now you figure it out, and as a group they were able to do it beautifully."* (P4-I)
>
> *"Reading through this flipped method made me realize that I am working with learners that like to do tasks in groups so I must start to implement groupwork again."* (P8-FQ)

5.7.2   SUB-THEME 2: PEDAGOGY-ANDRAGOGY-HEUTAGOGY CONTINUUM

Moving along the PAH continuum is a process. It essentially balances teachers' willingness to relinquish control whilst learners need to take action to become more autonomous. As will be seen below, teachers who made the decision to implement the AFCP, provided an opportunity for their learners to initiate autonomous behaviour. At the same time, learners' need of relatedness was activated as they could learn through social interaction with their peers. Consequently, they were presented with, in the words of one of the participants, the *platform* to develop different skills as to passively receiving information.

Teachers are considered key role players in this move. They have to initiate the required action to enable learners via the pre-class and in-class activities to move from being passive recipients of knowledge towards teacher-initiated learner-centred activities and finally, autonomous driven learner initiatives.

The focus then shifted further along the continuum by introducing the final key concept of the study, namely heutagogy. Within the PAH continuum, heutagogy is positioned

at the opposite end of pedagogy and naturally flows from andragogy where the learner takes a moderate amount of responsibility for their learning compared to heutagogy, where learners become autonomous and fully responsible for their learning paths. To move from one end to the other along the PAH continuum, learners have to undergo a transformation when it comes to their frame of reference. Learners must move from being passive to actively participating and the consumption of knowledge to an inquiry-based approach (Blaschke, 2014).

5.8 CONCLUSION

Within this chapter, the researcher unpacked the data pertaining to the main research question and the six secondary research questions relating to the potential of the AFCP to counter the passive learning phenomenon. Data from four datasets (online interviews, feedback questionnaires, research diaries and spontaneous responses) were subjected to in-depth analysis and interpretation and presented under four main themes and their unfolding sub-themes. Participants who implemented the AFCP gave an in-depth account of their experiences when implementing the AFCP intervention therewith shedding light on the applicability of the intervention in the South African context. What follows in the next chapter, is a discussion of the empirical findings and how it supports, refutes, or build on existing FCP literature within the frame of a self-determined approach. The six secondary research questions are discussed, based on the findings presented from this chapter.

CHAPTER 6

DISCUSSION OF FINDINGS

6.1 INTRODUCTION

The aim of this study was to explore the implementation of an Altered Flipped Classroom Pedagogy as an intervention strategy to address passive learning in a teacher-centred classroom. This was undertaken via an in-depth literature review, as well as empirical findings based on the qualitative data collected. In instances where the findings extended the literature consulted, the researcher reverted to the scientific literature to substantiate, refute or extend the findings. Based on that account, the researcher focused her attention in this chapter on the findings of the study.

A brief outline of the summary of the research is given, followed by a report of the findings. The discussion of the findings is guided by the primary research question and six secondary research questions as presented in Chapter 1. It draws on the literature reviewed in Chapters 2 and 3 as well as the empirical findings presented in Chapter 5. The researcher's inferences based on the findings are also included. Finally, a short overview is presented on noteworthy findings which have the potential to enhance or hinder the implementation of the AFCP.

Qualitative researchers' choices about what to include when they report on the findings, must fit the research purpose (Sandelowski, 1998). Qualitative research also often takes the stance that interpretivist understanding is gained once the meaning(s) of a phenomenon has/have been uncovered and deconstructed (Thorne, 2000). The ideal is foremost to build on the existing literature regarding the phenomenon under study. However, the researcher also aimed to discover novel interrelationships to generate new unexplored and unfamiliar knowledge structures as one moves past the familiar (Miles et al., 2020). Once a thorough report has been given of the findings, the researcher offers recommendations for further research and discuss the limitations of the study.

6.2 SUMMARY OF CHAPTERS

6.2.1 CHAPTER 1: BACKGROUND TO THE STUDY

The reader was presented with an overview of the study. This included the origin of the research initiative which serves as the rationale of the study. A brief overview of the main research concepts, that is, flipped classroom, neuroeducation and heutagogy, which are extended by means of the literature study in Chapters 2 and 3, were provided. The problem statement, purpose of the research and the research questions were communicated to provide the reader with a clear scope of the research. An outline was given of the research process including the research design, process of sampling and how data were to be collected, analysed and verified.

6.2.2 CHAPTER 2: LITERATURE REVIEW PART 1 - CONTEXTUAL FRAMEWORK

Within this chapter, an overview was presented of the rationale and contextual framework of the study. A breakdown was given of the history and culture of the schooling system with specific reference to the South African context. A call was made for an intervention that moves from rote learning and a teacher-centred pedagogy towards an active learner-centred approach (via the AFCP) that develops 21st century skills and activates learners' self-determined learning behaviours.

6.2.3 CHAPTER 3: LITERATURE REVIEW PART 2 - CONCEPTUAL AND THEORETICAL FRAMEWORK

The reader was provided with an in-depth discussion of the conceptual framework of the study. The key concepts, namely flipped classroom pedagogy, neuroeducation research and heutagogy, were examined as well as the interrelated and interconnectedness of these concepts. The researcher also discussed the theoretical framework underpinning the study, Deci and Ryan's Self-determination Theory, with specific reference to their Basic Psychological Needs Theory, which focuses on three specific needs, namely autonomy, competence and relatedness. The applicability of SDT to the field of educational research was also discussed.

6.2.4 CHAPTER 4: RESEARCH METHODOLOGY

Within the research methodology chapter, a full account was given of the research process that was followed. Due to the nature of the study, finding a practical solution, it was positioned a-paradigmatically from an interpretivist stance. The research design was discussed comprehensively including the sampling process, and the four qualitative data collection methods which included online interviews, research diaries, qualitative feedback questionnaires and spontaneous response. An inductive approach was used when analysing the data. More specifically, the researcher conducted a Thematic analysis in line with the guidelines proposed by Braun and Clarke (2006). Attention was given to data verification strategies as well as the care taken to adhere to the necessary ethical requirements.

6.2.5 CHAPTER 5: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

The biographical information of the research participants who participated in the study was presented followed by four thematic maps which presented the reader with a holistic view of the four emergent themes and sub-themes in the data: *Learners* (learner positive, learner negative, autonomy, skills, other factors), *Teachers* (teacher advantages, teacher challenges, teacher role, emotions, control, pedagogy, teacher growth and development, other factors), *Systemic and external factors*, (curriculum, education system, school context), and *Self-determined behaviours* (Self-determination Theory, Pedagogy-Andragogy-Heutagogy continuum). The themes, sub-themes and secondary research questions were tabulated to provide the reader with an outline of the data in relation to the SRQs. Finally, an in-depth analysis of each theme with its relevant sub-themes was presented.

6.2.6 CHAPTER 7: RECOMMENDATIONS, LIMITATION AND CONTRIBUTION

Within the last chapter, recommendations are proposed based on the findings in Chapter 6. This is followed by the limitations of the study and the areas for further research. Lastly, the reader is presented with the contribution to the research, that is, to propose a framework for an altered flipped class pedagogy as an effective intervention strategy for the teacher-centred classroom.

6.3 DISCUSSION OF FINDINGS GUIDED BY THE RESEARCH QUESTIONS

For the remainder of Chapter 6, the researcher aims to answer the six secondary research questions (SRQs). Each SRQ will be answered individually. It is also important to note that some SRQs extends beyond one theme and/or sub-theme depending on how these emerged in the process of analysis. A section *Other significant finings* have been included as it contributes to the richness of the data as it sheds light on factors that can potentially inhibit or enhance the implementation of the AFCP.

6.3.1 SRQ 1

How do teachers experience their role transitioning when implementing the AFCP?

The change in role that teachers undergo when implementing an AFCP is central, not only to the findings of the study, but also to whether the intervention is ultimately implemented successfully. Findings in the data predominantly revealed that the move in assuming the new role as facilitator was strongly linked to teachers' choices and actions to relinquish control in the learning process and allowing learners the freedom to initiate, experience, discover and explore. The data offered displayed glimpses of teachers' deep-rooted habits and mindsets etched within the traditional teacher-centred pedagogy, which confronted and challenged them whilst transitioning towards their role as facilitator.

6.3.1.1 Teachers' view of their new role

First and foremost, the role of the teacher becomes one of facilitator, co-constructor, learning facilitator, guide and helper, (Bates et al., 2017; Deakin Crick et al., 2015; Elliott, 2014; Horn, 2009; McWilliam, 2005; Taylor, 2008; Tzuo, 2007). This is crucial, as the effectiveness of active learning strategies depends mostly on how the change in the teacher role is understood and embraced (Peko & Varga, 2014). Embodying the new role is furthermore essential to promote optimal learning experiences (Van Wyk, 2018). Teachers have to yield their desire to be the primary source of knowledge in the classroom (Mascolo, 2009). They should also not underestimate the significant change

in roles brought about by the intervention which has a parallel effect on the learners in their classrooms (Onurkan Aliusta & Özer, 2016). The role transitioning is often met with high levels of challenge or resistance on the part of learners (Dole et al., 2015).

6.3.1.1.1   *Becoming a facilitator*

Teachers recognised their new role as facilitator in various ways. One referred to it metaphorically as '*driving in the passenger seat while guiding learners in the driving seat*' whereas another stated that she was there to help them when they went '*off track*'. A third teacher humorously acknowledged her guilt when she '*took a seat*' while the learners were '*teaching themselves*' and only provided help and input when needed. This is in line with Demski (2013) who stated that teachers should make a deliberate decision to 'step aside' to allow learners to learn from one another. Lombardi et al. (2021) similarly state that teachers should 'take a step back'. The findings also underline a noteworthy statement by Wehmeyer et al. (2000) who mentions that learners are not left to their own devices, they can still take advantage of the expertise knowledge of teachers when the learning situation warrants it. From the findings it becomes clear that teachers may experience some form of adaption phase when transitioning into their new roles which is considered a complex process (Dole et al., 2015).

6.3.1.1.2   *Overcoming resistance*

In their process of adaption, teachers may similarly be confronted with the following:

'*Yeah, I was there facilitating and... from an outsider's perspective. If someone walked into my class, it would have seemed like… the kids were playing around, not working, but they were. It just it looked different*'.

This excerpt highlights two key aspects, the resilience required by teachers when confronted with possible negative responses or resistance from peers, superiors or parents (Aricò & Lancaster, 2018; Edwards, 2017). These may stem from a negative attitude towards difference (Väyrynen, 2003) or a deep held belief that teachers are "…an expert in their fields, the main source of information, a good role model and an authority" (Onurkan Aliusta & Özer, 2016). Teachers may also have to adjust their general view of class management and require a new skillset to manage the activities when introducing the AFCP (Kazu & Kurtoğlu, 2022; Plaisir, 2020). What is less known,

however, is what the unique teacher attributes are of teachers who decide to overcome this resistance by experimenting with alternative and innovative educational interventions.

6.3.1.2 Uncertainty

Teachers may experience high levels of uncertainty when undergoing the process of role change from a teacher-centred to a learner-centred classroom (Blaschke, 2014). Firstly, teachers are compelled to relinquish their need for and to control (Blaschke & Hase, 2016), which is challenging for teachers to do (Dole et al., 2015). This process also holds a potential risk as the wrong interpretation of roles, which inaccurately translates to the newly envisioned learner-centred classroom, can cause learner autonomy to suffer (Farahani, 2014). Teachers commented on various challenges associated with role change including: (i) the difficulty of taking a step back and being quiet as they were used to doing most of the talking, (ii) relinquishing control of the content, (iii) 'feeling weird' about not being 'in charge' which demonstrates their sense of discomfort when relinquishing control, (iv) having the self-control not to automatically correct learners' mistakes (v) to generally provide less guidance in the learning activities and (vi) allowing learners to take more responsibility for their work.

From the above, two notable outcomes can be inferred regarding teachers' experience of role-transitioning. The first, is a definite decrease in teacher talk which implicitly increases the demand on teachers to listen more attentively so as to respond more constructively (Black, 2007). One of the teachers accurately captured this by stating:

'…*teachers who do ALL the talking, silence their learners' voices, which means the content remains abstract and the learners' main concern is to try and remember everything'*.

A second is the importance of having patience, a key attribute that Reeve and Cheon (2021) highlight in their research on establishing autonomy-supportive environments. This may be difficult at the onset, as teachers have to allow learners to adapt to their new role which includes higher levels of struggle, adjustment and finding their own pace (Reeve & Cheon, 2021).

The findings also highlighted the interconnectedness between teachers' role transitioning, teachers' pedagogical practice and learners' autonomous behaviours.

When teachers moved towards a more facilitative role and incorporated learner-centred activities, learners actions demonstrated that they: (i) asked more intelligent questions, (ii) embarked on activities to find individual resources, (iii) could learn collaboratively through building on one another's prior knowledge and (iv) exceeded the requirements outlined by the curriculum. One teacher also demonstrated her surprise when learners could manage difficult language structures 'on their own'. These learner actions may be due to a variety of reasons. Learners' self-determined psychological needs (autonomy, competency, relatedness) are being met or addressed (Reeve & Cheon, 2021), learners are more interested in the activities transitioning within the classroom (Reeve & Cheon, 2021), teachers were creating opportunities for increased levels of collaborative thinking and engagement (Hase, 2014b), or the environment were deemed less controlling. Consequently, learners felt less fear of failure, a decrease in contingent self-worth and/or higher levels of motivation (Bartholomew et al., 2018).

6.3.1.3   Teacher mindset

Coinciding with the move towards a more facilitative role, is teachers' mindset. This seemed to emanate from teachers' established identities which were influenced by factors such as their philosophical beliefs, assumptions, values and experience (their existing practice and how they have been taught) (Barty, 2004; Farrell, 2011). Teachers made various statements which reflected elements of a more passive traditional teacher-centred pedagogy. Relevant examples include: '*the whole move to go from a… conservative in a box kind of teacher*', '*the general EGD teacher prefer to follow instructions*', '*set in the traditional teacher-centred passive learning type of "vibe"*', '*my classroom is my stage*', and '*felt territorial about my space*'. Teacher identity is defined in terms of the way teachers view themselves and their classroom roles (Keiler, 2018) and is also closely linked with teacher growth and development (Reeves, 2018). Consequently, one may argue that role-transitioning may inevitably have a parallel effect on teachers' identities. The possibility exists that teachers may feel that their personal identities are being challenged when their sense of control is being alleviated (Beutel, 2006; Elliott, 2014). Teachers are required to make a paradigm shift (Roehl et al., 2013) when transitioning from a teacher-centred to a learner-centred approach. By implication, they need to realign their idea of how they position themselves within their classroom space and in relation to their learners, and alter their

overall view of authority in the classroom, which again is strongly influenced by their willingness to adjust their mindset (Hart, 1983; Révai & Guerriero, 2017).

6.3.1.4 Teacher habits

Closely linked to teachers' mindset and forthgoing identities are their habitual actions. Ironically enough, teacher habits are generally under researched (Hobbiss et al., 2021). They continue by stating that "…habitual behaviours may override more deliberative intentions" (Hobbiss et al. 2021, p.15) and that habits ultimately limit teachers' growth in terms of effectiveness. Teachers' reference to habits can be divided into two categories. The first relates to teachers' acknowledgement on the importance of breaking old habits:

'*I feel like, we can break that, we can break that habit*',

'*…ek dink dit is maar net 'n gewoonte. Jy is gewoond jy is in beheer van die klas*'

'*…we cannot do it the way we have always done it*',

'*…teachers are used to being like soos 'n haan op 'n mishoop*' (every cock will crow on his own dunghill)

'*…it's so like hammered into me that you have to be in the front, you have to teach*'

The second category reveals how teacher' underlying habits often caused them to revert to more familiar traditional pedagogical approaches and subsequently their old roles:

'*We're gonna do this now, whether you wanna watch the video or not*'… so I made them watch it in class'

'*Maar as jy instap en jou goed is voorberei en reg en jy weet jy gaan dit en dit en dit met die kinders doen dat het jy minimum dissipline probleme*'.

In light of the aforementioned examples, Claxton (2007) cautions that teachers should take special care not to revert to older and stronger teacherly habits. This highlights an important finding, in terms of the support and systems that need to be put in place when implementing an intervention that fundamentally challenges teachers' mindsets and habits, as these are deeply rooted in a traditional teacher-centred pedagogy.

6.3.1.5   Control vs Autonomy

To date, what runs as a golden thread throughout the findings is the unmistakeable interconnection between autonomy and control. It seemed as if lower levels of teacher control yielded higher levels of learner autonomy, and differently stated, it seems that teacher control can pose as a threat to learners' autonomy. Deci and Ryan (1994) offer a similar finding that self-determined behaviours signify opposing ends of a continuum. Le Roux (2016) states that teachers have to relinquish control for learning to become more spontaneous, that is, making allowance for increased levels of learner autonomy. Bartholomew et al. (2018) similarly found a decrease in autonomous motivation correlated with an increase in controlled motivation. As seen above this often contradicted with teachers' existing mindsets and habits based on their experiences with the traditional teacher-centred pedagogy. In contrast, when teachers were willing to introduce the AFCP activities and embrace their role as facilitator, they automatically created opportunities to initiate learner autonomous behaviours. Examples of these actions include: (i) allowing learners to take responsibility for their work, (ii) open-ended class discussions where learners were not 'forced' to accept only the teachers' opinion or views, (iii) allowing for greater ownership of basic organisational tasks and (iv) refraining from answering learners' questions immediately and rather responding with a question to stimulate critical thinking.

When teachers lowered their control, they witnessed various benefits to learning. Although this is discussed in more detail under SRQ 4, a few of the findings are noted. Three teachers commented on learners' ability to work independently, whereas another remarked on improved learner confidence. Reference was also made of the potential of the AFCP to improve learners' critical thinking and problem-solving skills. Learners demonstrated an increase in their ability to self-regulate, while the potential of learners to become more self-disciplined was also recognised. One may argue that the role change associated with the FC (with reduced levels of teacher control) to some extent, serves as a catalyst for learners to take responsibility for their learning. Consequently, learners are enabled to discover learning strategies which are best suited for them to individualise their learning processes (Cilliers & Pylman, 2022).

6.3.1.6   Teacher-learner relationship

One teacher commented on how 'scary' it was to trust learners to take responsibility and ownership when it comes to staying on task and completing their work. Encompassing the new role as facilitator are higher levels of trust between the teacher and their learners, which emerges from a strong teacher-learner relationship. This is asserted by Dole et al. (2015), who saw an improvement in rapport with learners when teachers transitioning to the role as facilitator and Pretorius (2014), who found that qualities such as trust and respect are regarded as essential to build healthy teacher-learner relationships. However, more importantly in this case, is the parallel connection between the teacher-learner relationship and how teachers maintain control in the classroom. A similar finding by Edwards (2017, p. 7) highlights how 'a relationship-driven approach to (classroom) management' assisted the teacher in the study with more successful implementation of active learning activities.

To conclude SRQ 1, it is first and foremost important to recognise the importance of teachers' effective role transitioning for successful implementation of the AFCP. Teachers realised the importance of 'taking a step back' when assuming their new role as facilitator, overall, a process they found quite challenging. The challenges teachers experienced primarily centred around the measure of control imbedded in traditional teacher-centred pedagogy and management strategies. Teachers specifically remarked on the self-discipline they required not to intervene and the discomfort they experienced with not being in charge. The findings revealed that the most prominent factor linked to teachers' disposition to undergo role transitioning, is their impetus to relinquish control. The transitioning was considered more exigent as this process is influenced by their existing mindsets and habits. The interconnectedness between control and autonomy is recognised as significant and was extended to teachers' pedagogic practice and the teacher-learner relationship. Consequently, when teachers action their new role as facilitator, they subsequently increase opportunities for active learning and higher levels of learner autonomy, thereby successfully countering the passive learning phenomenon.

6.3.2 SRQ 2

What are teachers' perceived challenges when implementing the AFCP?

Overlapping with SRQ 1 (teacher role) are the challenges teachers experience when the AFCP is implemented. Firstly, as discussed under SRQ 1, is the difficulty teachers experienced when transitioning to their new role as facilitator (discussed extensively under SRQ 1 (*cf.* 6.3.1.2)). To follow, are three additional challenges teachers experience when introducing the AFCP. The first two emanate from teachers' immediate experience (situated internally). The first category highlight teachers' uncertainty as to whether learning occurred and/or whether they were introducing the intervention successfully. The second, creativity, was featured in two ways, that is, as a prerequisite when implementing the intervention or a justification for *not* introducing the AFCP. The third category, resistance from learners, is a challenge teachers experienced in response to learners' reactions when implementing the AFCP and is therefore considered an external point of origin. Nevertheless, this category focuses on learners' non-participation and negative attitudes when introduced to the AFCP.

6.3.2.1 Uncertainty whether learning is taking place

One teacher specifically referred to her uncertainty as to knowing whether learning has taken place, a finding similar to Bernstein (2018). Although teachers who predominantly make use of teacher-centred pedagogies may experience a similar challenge, this raises a central question not only in the study, but also to education as a whole. It similarly invokes a discussion on a center-feature of successful pedagogy, namely teachers' assessment practices. Assessment literacy is seen as fundamental to teachers' practice as inadequate knowledge regarding this arena can have a detrimental effect on the quality of education (Popham, 2009).

A significant finding in the study, is teachers' over-emphasis on summative assessments and the shortcoming of formative assessment practices. Although a study by Burton (2020) displays a similar finding, this is alarming especially if one takes into consideration the value of formative assessment for the learning process. The definition on formative assessment specifically highlights the importance of providing feedback on learners' performance in order to 'improve and accelerate' learning

(Sadler, 1998) and is considered central to learner-centred pedagogic practice (Burton, 2020). It seemed as if teachers' assessment practices were strongly influenced by the demands of the content-laden curriculum. The mismatch between what is being propagated by the outcomes of the curriculum and how this translates at ground level were predominantly attributed to the lack of time. Teachers also highlighted the number of summative assessments as a potential barrier to experiment with learner-centred approaches. Covering a certain amount of content before administering a summative assessment also reinforces one's external motivation to learn. A few references by teachers include:

'*I think they're so filled with so many things. 'cause I remember in that week they were complaining about writing a Life science test a Maths test there was an English essay that they needed to hand in and an LO project. It was all in one week. And they say to me, 'Where must they find time for this 10 minute video?'* '

'*A problem that we do have, especially in the in the government schools, is there are way too many assessments. The teachers spend too much time on setting assessments. As die onderwysers soveel tyd spandeer het op lesvoorbereiding soos wat hulle op die opstel van assesserings spandeer dan gaan jy 'n heel ander ball game sien in hierdie land*'

'*Uhm, I personally think the Grade 8's & 9's, I don't have enough time with them ever. I see them three times in two weeks, which isn't a lot. So, with this term coming up now because exams are starting in a month, I only have 6 lessons with them. So, I summarize their work into 10 pages*'

Apart from the high emphasis on summative assessments, other possible reasons for a lack of formative assessments, may include (i) the shortness of the intervention which did not provide teachers with sufficient time to assess, (ii) constraints imposed by Departmental demands, leaving teachers with limited time to implement formative assessment effectively, (iii) a lack of assessment literacy, or (iv) not recognising the potential strength and/or value of formative assessment.

6.3.2.1.1 *Adjusting one's pedagogic practice*

One teacher voiced her uncertainty in terms of implementing the AFCP intervention '*ok, am I doing this right?*' Teachers may find it daunting when having to re-evaluate their teaching methods whilst adjusting to a new role. There is, however, no uncomplicated answer to the question voiced. The first question teachers can ask to help them with this process, relates to how their pedagogic practices can be amended

to reflect active learning (Li et al., 2021). Doffermyre Jackson (2016) proposed a different question, namely how teachers can align their formative assessment with the areas learners are noticeably struggling with. This guides teachers in terms of pedagogical choices on what to reteach, how and when to alternate approaches or when to provide additional opportunities for practice (Boston, 2002), whilst addressing specific learner needs and supporting learners in the learning process (Black & Wiliam, 1998; Sondergeld et al., 2010). Popham (2009) similarly states that teachers can make effective use of formative assessments by using the evidence obtained to refine their practice. In his words, formative assessment has a "…powerful improvement orientation because it is intended to stimulate ameliorative adjustments in teachers' still-malleable instructional programs or in students' current learning-tactics" (Popham, 2009, p.5). At this point, it is once again important to emphasise the reciprocal nature between teachers' instructional pedagogy and their ability to employ rigorous assessment practices. Having a deep understanding of this relationship, may consequently assist teachers to navigate the unfamiliar waters when introducing the AFCP.

6.3.2.1.2   *Monitoring learner progress*

Using formative assessment activities is key to monitor learners' progress and gain an awareness of whether they are learning or understanding the work. Teachers raised their uncertainty as to whether learning is taking place:

'*Is this beneficial or am I wasting time? Are they receiving and learning, or is this just a by the way thing?*'

'*…maar jy is nog steeds nie seker het dit nou gewerk of het dit nou nie gewerk nie*'

'*…en na die tyd… was ek onseker of hulle… of hulle die lydend en bedrywend verstaan*'.

From the literature, it becomes evident that teachers can utilise various strategies to address their uncertainty as to whether learners are achieving the learning outcomes.

When implementing an AFCP, the pre-class activities are used to activate learners' pre-knowledge before coming to class. This can be used alongside prior knowledge assessments to establish what learners already know (Shepard, 2005). Common in the formative assessment literature is the use of peer- and self-assessment, which can

benefit learners and assist teachers in various ways. In short, self-assessment is seen as "…the ability of a student to judge his/her performance, that is, to make decisions about one's self and one's abilities" (Noonan & Duncan, 2005, p.2) whereas peer-assessment is described as "…a strategy involving students' decisions about others' work that would typically occur when students work together on collaborative projects or learning activities" (Noonan & Duncan, 2005, p.2). Learners learn the valuable skill of reviewing their work to achieve learning targets (Black, 2007) and becoming more self-analytic (Noonan & Duncan, 2005). In addition, when discussed with their peers or teachers, learners improve their overall ability to reflect on their thinking with an unavoidable outcome of improved learning (Black & Wiliam, 1998). One cannot, however, assume that learners will automatically know how to peer- or self-assess, and they would require some form of training in this regard (Black & Wiliam, 1998). When learners however master the skill of self-assessment (defining, adapting, assessing learning outcomes), they develop their ability to be adaptable and flexible, which are considered essential 21st century skills (Tümen Akyildiz, 2019).

6.3.2.1.3   *Ensuring quality*

One teacher raised her uncertainty about whether learners are able to deliver the correct standard or quality of work:

'*Also, I think the…the uncertainty of… of… of what they're going to produce*'.

This is finding is in line with research by Newmann et al. (1996) and Niemi (2002) who heeds teachers to be aware of learners' lack of, or weak metacognitive skills, which may lead to the production of work that is considered as intellectually shallow. Black (2007) particularly emphasises the importance of the quality of learners' contributions. In order to address the notion of quality, teachers foremost have to shift their focus from product to the process of learning (Burton, 2020). This includes adapting their mindset by allowing for 'wrong' or 'partly right' answers as these inform the teacher of the learner's progress and can provide guidance of where support is needed (Black, 2007). As with teachers, learners also have to become accustomed to their new roles and subsequent responsibilities toward their learning. They have to grow their confidence as well as their ability to self-critique (Shepard, 2005). Teachers can provide supportive measures along this learning journey to provide learners with guidance and/or monitor the quality of their work, such as making rubrics available

(Shepard, 2005) or designing scaffolded assessments (Narendran et al., 2018). Another key strategy is to provide accurate, comprehensive and appropriate feedback (Black & Wiliam, 1998; Sadler, 1998).

Overall, an over reliance on summative assessment, which is often associated with teacher-centred pedagogies, may ultimately enhance the passive learning phenomenon. This is primarily ascribed to learners being driven by external rewards, which negatively impact their intrinsic or autonomous motivation. If teachers do not transition wholly and include learner-centred assessment practices, they revert again to where 'assessment drives learning' (Reeves, 2006). In contrast, formative assessment potentiates opportunities for teachers to monitor learner progress more closely, which provide opportunities for timely intervention. It can also enact a form of accountability for learners to participate in the learning journey leading up to summative assessments which are usually scheduled at the end of the term. Lastly, the relationship between feedback and assessment and learner motivation has been recognised (Euler, 2015), thereby strengthening the likelihood of assessment to counter learner passivity.

6.3.2.2 Creativity

The rapid increase in importance of modern-day concepts such as progression, innovation and change, has respectively heightened the increase and demand in creativity (Fidan & Oztürk, 2015), which is also considered as among the most important topics of educational systems (Ozkal, 2014). When teachers align their teaching practice accordingly, learners benefit greatly especially for life after school when they enter the workforce or embark on further education and/or training. The advantages of creative pedagogy are numerous. Horng et al. (2005) for example, holds that it encourages independent thinking and active participation and provide learners with the opportunity to express their opinions. Esquivel (1995) goes as far as to endorse it as an educational goal, due to the promise it holds for learner self-actualisation.

Creativity is considered a somewhat incongruous finding in the study. It featured in three distinctive ways. The first two are similar and relate to teachers' positive and negative perceptions regarding the perceived emotional and physical demand

generally associated with or required when experimenting with innovative pedagogic interventions. The third, relates to heightened levels of teacher creativity displayed via their in-class activities (*cf.* 6.3.5.3 creative pedagogy) when implementing the AFCP.

6.3.2.2.1 *Emotional demand*

Some of the critique that the FCP receive, specifically from teachers' point of view, is maintaining a high level of creativity when developing new resources for pre-class and in-class activities (Honeycutt, 2016). This was possibly more so the case when environmental factors (for example, the change and/or uncertainty during the pandemic when the study was conducted) placed higher emotional and physical demands on teachers. When completing the feedback questionnaire, one teacher stated the following when asked whether he will use the AFCP in his future classroom:

'*Yes, although time constraints over the past few weeks have dampened my creative sources*'.

This is in line with some of the critique that the FCP receives, which is the significant increase in the time spent on developing the required learning materials (Gündüz & Akkoyunlu, 2019; Reyna, 2015).

The same teacher listed '*strain on teacher to redevelop lessons to fit Flipped approach*' as a challenge when implementing the AFCP. According to Hennessey (2010), there is a direct correlation between affect, intrinsic motivation and creativity. Elsewhere, creativity as a process is featured in light of what it requires, such as accumulation, time, thought and examination (Ozkal, 2014). One may therefore conclude that creative input does require higher levels of emotional input. As a result, it seems as if teacher creativity may suffer, leaving room for more passive teaching approaches, consequently reinforcing the passive learning phenomenon. What is less known, is how teachers can be supported or which strategies they can use to preserve or sustain their creative resources.

6.3.2.2.2 *The influence of a predominantly teacher-centred system*

The second example does address a similar concern; however, it is situated slightly differently and therefore needs contextual clarification. It pertains to a first-year teacher who, having been exposed to the FC at tertiary level, was excited at the onset of her

career to implement the FC as part of her teaching practice. When transitioning into the formal education system, she reverted to the traditional teacher-centred pedagogy:

'*But going into all of that that chaotic mess, I just completely went back into this like this is how I know teaching to be and this is how I'm going to approach it. I'm not even going to try doing something different. I was so overwhelmed with everything else that I guess I... I didn't think that I could be creative with coming up with flipped lessons*'

The finding is in line with Ozkal (2014), who notes that factors such as competitive environments, time, limited choices, pressure and rote learning all have a negative impact on creativity within the school context. Fortunately, this teacher participated in the study at a later stage during the year when she made a deliberate choice to experiment with an alternative approach, hoping that her learners would be 'open to receive the Flip'.

This raises an important concern in terms of creative educational innovation at a larger scale. Universities are often at the forefront when it comes to research, to which pre-service teachers are inevitably exposed. When entering the schooling system, they however, revert to 'how they know teaching to be' which highlights an incompatibility between teacher training and the work environment. As a result, permanent change and modernisation which could largely be driven and sustained by upcoming teachers eludes the South African schooling system.

6.3.2.3 Positive attitude

Commenting on her experience when introducing the AFCP, the teacher from the second excerpt above mentioned implementation requires: '*a little bit more effort and a lot more creativity, which I don't mind (laughs)*'. She acknowledges the additional input required, however overcomes this potential challenge through deliberate choice and a positive attitude. This shows that there are properties that teachers can draw on to pursue creative pedagogy, despite the diminishing and/or inhibitory factors in their environments. Ozkal (2014) similarly views creativity as an attitude. Elsewhere, the research highlights endeavor (Lilly & Bramwell-Rejskind, 2004) as a significant factor when it comes to creative pursuits. From a more holistic vantage point, creativity is viewed as a mindset rather than a process or skill that forms an integrated part of teachers' thinking (Henriksen & Mishra, 2015).

The evidence suggests that teachers perceive creative endeavours challenging when confronted with high demands or time constraints in their work environment. If this persists over a prolonged period, it may eventually become an obstacle that prevents the implementation of high-quality creative pedagogy. The opposite, as demonstrated by the last excerpt, also holds true. The strong relationship between affect and creativity is thus recognised, as it is demonstrated both in a positive and negative way serving as a justification for not implementing the AFCP, and contrarily, as an incentive to do so. What is less known however, is what can be done to help teachers grow a creative mindset, to foster creativity throughout their career or to support first year teachers who annually enter the system. The question is also raised as to what the emotional effect is on teachers who have to continually take responsibility for crafting and adapting the curriculum creatively to meet the needs of their learners and whether they have the capacity to maintain this over a prolonged period of time.

6.3.2.4 Resistance from learners

Common in the FC literature, is the resistance often imposed by learners when introduced to the intervention (Gündüz & Akkoyunlu, 2019; Munir et al., 2018; Plaisir, 2020). According to Felder and Brent (1996), the move towards learner-centred education may "…impose steep learning curves on everyone involved" (p.43). One may alternatively argue that learners' resistance is potentially a disguise due to the challenges and discomfort they face when being exposed to a learner-centred approach where they have to assume greater responsibility for their learning (Reinders, 2010). Similar to teachers, learners are also in the habit of having teachers take the lead with regards to decision-making in most learning areas (Farahani, 2014). Learners may find it challenging to deal with the various changes brought about via this pedagogy in terms of roles, becoming more active, and greater exposure to cooperative learning activities (Qualters, 2012). Felder and Brent (1996) reassuringly state that a form of resistance is a natural part of the journey from dependence to intellectual autonomy. Even though the benefits for learning (*cf.* 6.3.4) far outweigh the challenges or negatives, these cannot be ignored as they provide a fuller picture of the implemented intervention. The also present teachers with the necessary information on where to provide learners with the correct support or scaffolding to achieve success.

6.3.2.4.1   *Learner Negative emotion*

One teacher highlighted an increase in learners' anxiety, which seemed to be derived from negative emotions such as fear and/or anxiety:

'*Two begin with, they were quite anxious. They tend to be quite anxious because they were afraid of getting it wrong. And so, I had to reassure them quite a lot that this is it's an exploration, also it's poetry, so it lends itself to that sort of thing. Uh, you know it's. It's an exploration. You don't… it's not about right or wrong, it's about what you're thinking, it's about what you find, what you interpret*'

Reeve and Cheon (2021) gave a similar account. Their findings revealed that learners tended to express negative feelings when having to engage in difficult tasks. Moreover, when these feelings (such as, anxiety, confusion, stress) arose, they overwhelmed learners' volitional motivation. In a similar fashion, Green and Schlairet (2017) found that learners were uniquely challenged when introduced to the FC as they used descriptors such as 'hard', 'overwhelming', 'pressure' and 'struggling' to describe their experience.

This account is based on an account of a teacher who implemented the AFCP in one of her academically strong Grade 11 classes. In this case, the fear of making mistakes can predominantly be situated in learners' need to achieve excellent academic results. One may therefore argue that, like teachers, learners may display habits rooted within their familiarity with a teacher-centred pedagogy and consequently, reject an unfamiliar approach (Bernstein, 2018). Another possibility is the high expectations they impose on themselves or experience as pressure from their parents or teachers. Many learners, specifically within the FET, are aware of the impact of their grades on future pursuits and may feel the pressure to perform based on a long-term goal. Teachers need to be aware of the potential conflict which a mismatch of learning outcomes between themselves and their learners can bring about (Reeve & Cheon, 2021). On a positive note, learners' negative emotions tend to decrease when they become accustomed to a learner-centred approach and steadily gain higher levels of self-confidence (Munir et al., 2018; Tawfik & Lilly, 2015). Teachers will have to be mindful of these factors and prepare a strategy in advance best suited to their students and their context to introduce the intervention to help learners prepare emotionally for the move to a more learner-centred approach.

6.3.2.4.2   *Non-participation*

Similar to the FCP literature where non-participation is a main concern (Abeysekera & Dawson, 2015; Akçayır & Akçayır, 2018; Al-Zahrani, 2015; Gündüz & Akkoyunlu, 2019; Le Roux, 2016; Plaisir, 2020) three teachers expressed their concern over learners' non-participation in the pre-class activities:

'*…because like I said, when learners come back and you're like 'OK who watched the video?' And then it's like six and then you're like 'Cool''*

'*The challenges? You need to (pause). I think just the self-discipline maybe of some children… uhm especially if you… if you expect them to do the flipping at home*'

'*Weaker ('lazier') learners will not invest in approach*'.

To this point, not a lot is known in terms of how teachers can minimise the impact on learners when introducing the FC, apart from communicating the objectives as well as the potential benefits and challenges of the FCP, prior to implementation (Al-Zahrani, 2015; Kenwright et al., 2017; Moffett, 2015). Le Roux (2016) has suggested a partial flip to help learners with the process of transitioning to their new role and adjusting to the learner-centred approach. The influence of contextual factors on learners' readiness, which are yet to be explored, are class size as well as whether the school is situated within a low- middle or high-income area. More attention could also be given to teachers' motivational attributes and how these potentially increase levels of positivity which may transfer to learners that affect their readiness and/or preparedness when the intervention is implemented.

6.3.2.4.3   *Learner passivity*

The FC imposes a higher cognitive demand on learners as they have to actively engage in the self-management of their cognitive processes, develop inquiring skills; challenge their own assumptions whilst weighing others' assumptions, ideas and perspectives and learn to reflect on their own learning (Carneiro, 2007; Chen, 2016; Drew & Mackie, 2011; Kane, 2004; Nelson & Harper, 2006; Niemi, 2002). If learners are accustomed to the opposite, they might want to revert to their 'comfort zone' (Blaschke & Hase, 2016; Canning & Callan; 2010). Alternative reasons for passive behaviours include the struggle of learning on their own as well as the higher demand

on self-discipline and motivation (Fisher et al., 2020), and an over reliance on the teacher (Farahani, 2014). Teachers' experiences relating to learners' passivity as well the potential factors affecting learners' decision-making are included below:

'*…but they weren't very keen on knowing that they have to go and do the work themselves. Come back, work in groups and present. Like in your training how you did the poem. I try to model that. Uhm, but they… They say they don't like it, but I don't think they understand the effects and impact that it is having*'

'*I always tell them 'I'm not here to always write down every single note that I'm saying you're gonna have to learn to do it yourself and to make notes and make questions and make answers for yourself because no one is going to do it for you for the rest of your life. You are the person that needs to question things. You are the person that needs to answer the questions as well and do research about it*''

'*Little accountability from learners*'

'*Maar ek sal dit nie met enige ander klas kan doen nie. Ek sal dit nie eers met my graad 10 Huistaal klas kan doen nie, want hulle het nie genoeg self-dissipline om dit te doen nie.*'

'*Uhm, they tend to not like take responsibility of engaging in the work.*'

'*…because they want to… they just want to sit and write down and receive. But I feel like, we can break that, we can break that habit. Because that's a lazy habit. Just wanting to get, but not really engaging*'

'*That some, don't always ride on the on the backs of the others that they are also engaged and involved even in a group or individually, and making sure that you don't lose a child somewhere*'

Once again highlighted by the findings, is learners' passive habits which have been reinforced throughout their school career. They have become accustomed to receiving from their teachers and their actions or contributions are largely dependent on external motivation such as summative assessments or the outcomes of disciplinary actions by the teachers when they are misbehaving in class.

In contrast, one teacher who teaches at a private school offered a solution to address this problem. The excerpts to follow, are all from the same teacher:

'*They become used to being given the reins to their own learning and so you don't need to push them to do that*'

'*Uhm, but I… I've found, I mean in the in the classes that I've taught in the schools that I've taught, they are already independent learners. They get taught that from… from*

when they're young and so they don't respond well to having a teacher completely in control of the classroom'

'*Most all of them have some sort of device, most of them have iPads. They all have access to the Internet all the time. If they don't know something, they look it up. Uhm, and so if you ask them to go and research things, that's what they do anyway, so it's, it's almost second nature to them. And I think independent learning what I was really thinking of is that they… they are asked to do projects, they are asked to do research. They are asked to gather information for projects from when they're in primary school, and so when they get to high school, it's… they know what to do. They don't have to be taught*'

Farrington, et al. (2012, p.12) refers to learners' 'academic identity' that is influenced by a variety of factors such as prior knowledge, previous academic achievement (or a lack thereof), past educational experiences and a pre-existing academic mindset. One may consequently argue that when learners are introduced to learner-centred pedagogy from a younger age, the transitioning is met with less resistance and more confidence as they may have already developed a different 'academic mindset'. Another noteworthy finding is the natural skills and abilities of Gen Z learners. Gen Zs' are naturally prone to be innovative and self-reliant and are used to educating themselves (for example, YouTube or self-help videos) (Lear et al., 2019). When teachers adapt their FC activities in line with these learner strengths, they might lessen the impact and/or be met with less resistance. Lastly, the role of contextual factors cannot be denied such as the potential success of the intervention across differing school contexts (private vs public or high vs low quintile schools).

To conclude SRQ 2, the challenges teachers face when introducing the AFCP were raised alongside four emerging categories, role change, uncertainty, creativity and learner resistance. Formative assessment, at present the missing keystone, was identified as a central component to help teachers navigate through their uncertainty and discussed as an extension to teachers' pedagogy. It was also viewed in terms of the potential it holds to manage learners' progress through a variety of strategies such as feedback and peer- and self-assessment to ensure quality learning. This was followed by a discussion on creativity which was considered in terms of its relationship with both a positive and negative affect and how this relates to teachers' decision-making as to whether they implement the AFCP. Teachers furthermore perceive that the AFCP requires larger degrees of creative input. A creative mindset, positive attitude and endeavour were considered as imperative attributes to overcome the higher

perceived emotional demand imposed on teachers mainly due to systemic factors and/or time constraints. The researcher proposed that support is put in place to assist teachers with implementing interventions such as the AFCP to help them transition into their new role as facilitator and grow their assessment literacy. The last challenge discussed, was the negative responses teachers face when implementing the AFCP. Learners' often display behaviours such as negative emotions, non-participation and learner passivity. Suggestions were made as to how teachers could support learners to lessen the impact of transitioning to a learner-centred pedagogy such as the AFCP.

6.3.3 SRQ 3

To what extent, from the teachers' view, does the AFCP support learners to become motivated in their learning?

The findings suggested that the AFCP encouraged greater learner participation, interaction and engagement. Teachers observed behavioural changes in learners such as actioning or initiating learning activities, higher levels of pro-activity and demonstrating their ability to work independently. Learners were more inclined to participate in voluntary engagement with peers and the content. In some instances, learners also extended the curriculum outside of the classroom contexts. Another noteworthy finding was of learners who were generally shy, unwilling to participate or who were labelled as being exceedingly passive by their teachers. These learners were on task, completed their work and contributed to the learning process.

6.3.3.1   Teachers' pedagogic actions

What became evident is the direct relationship between learners' active involvement and teachers' pedagogical approach. Consequently, teachers' actions are key as to whether learners are passive or not in the learning process. When teachers initiate learner-centred teaching methods, learners become automatically engaged (Zepke et al., 2014). This sheds light on an important finding in the study that is, that passive learning is reinforced through passive teaching. Although teacher-centred education has been discussed, the passive teaching phenomenon has to date been somewhat overlooked, as the focus has mainly been on the passive learning phenomenon.

Zepke et al. (2014) lists teacher actions that can be taken when introducing active learning activities. These include feedback on learning, challenging learners to think, discussing learners' learning, ensuring the subject is interesting and being enthusiastic about their subject. From the data obtained, teachers used three of these actions, namely challenging learners to think, being enthusiastic about their subject and ensuring the subject is interesting. Furthermore, the specific pre-class and/or in-class subject related activities, compelled the activation of learner agency, which is commonly associated with active learning (Lombardi et al., 2021).

Within the study, teachers recognised the need for and importance of learner-centred pedagogies. When teachers experiment with this type of innovative pedagogies (for example, the AFCP), they have already realised the importance of learner agency (Hase, 2016). Within a traditional teacher-centred environment, learners can attempt to exercise agency to construct meaning, however, this will only occur on a superficial level (Lombardi et al., 2021). Consequently, one may infer that when learners' agency is activated via learner-centred activities, they can potentially access deeper levels of learning. According to Van Lier (2008), agency is directly related to intentionality, intrinsic motivation and autonomy. When learners are provided with choice and/or able to voice their opinion, their agentic traits become activated. Agency is also considered a resource that benefits learners across social classes (Burger & Walk, 2016). Once again, the onus rests on the teacher to act by providing learners with authentic choices. This is imperative, as learners become aware that their choices and opinions directly impact and potentially influence the world around them (Williams, 2017). This was witnessed in the data when learners shared the videos that they watched with members of their family, thereby extending the curriculum to the community.

6.3.3.2 Autonomy

Although the need for autonomy is discussed in more detail in SRQ 6, it is important to refer to it when answering SRQ 3. The findings demonstrated the potential of the AFCP to activate learners' autonomous actions or activities which eventually translate into intrinsically motivated behaviours. Autonomy is defined as "…the need for personal ownership over one's behaviour" (Reeve & Cheon, 2021, p.55). They continue by stating that once learners' have experienced autonomy, it positively translates into their overall engagement, learning and well-being. Having an improved

well-being highlights an important finding with regards to the passive learning phenomenon. Learners' affective domain may be affected positively. This may provide insight regarding the display in the data of learners who were overtly passive or who generally withdrew from the classroom interactions, which, when the AFCP intervention was implemented, displayed higher levels of participation and engagement. Alternatively, learners may have demonstrated higher levels of motivation as their need for autonomy was activated (Hase, 2014b).

One of the best examples from the data includes this feedback by a teacher, based on a pre-class activity:

'*For one lesson I asked them to find me 5 fun facts about the sun (to introduce Astronomy Natural Science) and one student came up with 2 pages because it "was so interesting". This from the child who usually spends all lesson yawning or disturbing the others*'

In another instance, a teacher communicated her surprise when learners were able to manage more difficult language constructs on their own:

'*Ek het spesifiek lydend en bedrywend as een van my onderwerpe gekies omdat dit "moeiliker" taalwerk is en ek was verbaas om te sien dat die leerders dit eintlik "op hulle eie" kon regkry*'

Teachers highlighted important aspects which may have a significant impact as to whether autonomous learner behaviours are activated, such as (i) allowing learners' more freedom to 'see what they can do' as well as (ii) including them in the learning process which may have a positive impact on their motivational drive to learn. According to Deci (1992, p.170), "…humans are growth oriented, proactive, and inherently desirous of autonomous, or self-determined, functioning"; however at the same time, they are also "…vulnerable to being controlled". As captured in the excerpts above, learners demonstrated higher levels of autonomy when teachers correspondingly lessened their control. This is similar to the findings where teachers and/or researchers who have implemented the FCP, analogously witnessed an increase in learners' ownership and responsibility toward learning (Gojak, 2012; Gündüz & Akkoyunlu, 2019; Mok, 2014). One does, however, have to account for the determinative influence of the pre-class activities which may serve as a catalytic agent when activating learners' autonomy (Lee et al., 2022).

6.3.3.2.1 *Cooperative & Collaborative learning*

The introduction to groupwork activities automatically compels learners to become actively involved and contributes to an increase in levels of engagement. This flows from the AFCP where in-class time is allocated to various cooperative and collaborative activities (Akçayır & Akçayır, 2018; Moffett, 2015). A few activities that teachers who participated in the study made use of included discussions, presentations, peer-to-peer instruction and educational games such as *Bingo* and *Escape the room* (Becker & Birdi, 2018; Hsieh, 2017; Moffett, 2015; O'Flaherty & Phillips, 2015; Reyna, 2015). Learners greatly benefit in terms of learning as they can construct meaning within their zone of proximal development with the assistance of their peers and the teacher as facilitator (Eppard & Rochdi, 2017). One teacher explicitly stated her observation of a whole class discussion led by learners who were discussing a topic (fracking) based on an article which they had to read as a pre-class activity. The same teacher had learners pleading with her to continue with the lesson while the school bell rang and they had to move to their next lesson as they were so engaged in the topic under discussion. Smith (2015), in his study on the efficacy of the FC, found that interactions almost trebled during lesson time.

When learners are engaged in peer-related activities, they are provided with the opportunity to communicate their ideas within a different social context that they normally would. Consequently, they may come to realise that their opinions and/or beliefs are different and therefore their existing frames of reference may be challenged and/or altered. This is essential as their adapted frameworks eventually become better suited to broader and/or more generalised contexts. Ultimately their altered frameworks can be transferred to novel contexts and they become more adaptable in general, which benefits them on similar future endeavours (MacCleod, 2004).

Apart from adapting existing frameworks, learners co-construct knowledge with their peers. Learners are provided with the opportunity to contribute to the learning process by sharing their personal experiences, which consist of their individual history, interests and views (Little & Dam, 1998). Learners may also add value in terms of asking relevant questions, reminding their peers of the learning goals, soliciting resources, providing suggestions to solve problems or request assistance from the teacher when warranted (Reeve & Tseng, 2011). Although learners were not the unit of analysis

within this study, Smith (2015) found that learners preferred the FC, because they learned more from their peers while working in groups and having the teacher as facilitator to explain the detail where required.

Concerns have been raised regarding whether learners will stay on task whilst participating in the in-class activities (Mok, 2014; Steen-Utheim & Foldnes, 2018). Learners may, for example, get distracted whilst engaged in small group activities due to an increase in noise levels (Petersen & Gorman, 2014). Another challenge is that the in-class activities run the risk of turning into socialising or learners going off task (Nykiel-Herbert, 2004). One may argue that the responsibility resides with the teacher to provide learners with opportunities to build and practise these skills. This can be done through carefully planned in-class activities (such as goal-setting), instruments (such as rubrics) or other support structures to monitor group or individual progress (Bergmann & Sams, 2014; Strayer, 2012). Contrary to the research, teachers did not comment on learners being off task when the in-class activities were introduced. Possible reasons may be the positive outcome due to the novel learning experience, or higher levels of creative pedagogy which had a positive influence on learners' motivation to learn and consequently, their levels of in-class engagement.

6.3.3.2.2 *Learner engagement*

Overall, learner engagement is characterised in terms of three interrelated constructs, that is, behaviour (attention, effort, persistence in learning activities, lack of misbehaviour), emotion (presence of interest and enthusiasm, absence of negative emotions including anger, anxiety, boredom) and cognition (the use of advanced learning strategies and self-regulation) (Reeve & Tseng, 2011, p.257). Based on teachers' experiences, learners demonstrated gains and/or improvements in areas related to all three areas. Teacher examples relating to the increased levels of engagement included: (i) exceeding teacher expectations regarding the pre-class activities, (ii) a decrease in passivity, (iii) input from low achievers, (iv) higher levels of work completion, (v) higher levels of enthusiasm, (vi) increased attention, and in the words of one of the teachers:

'*Learners interacted well and I saw such an amazing side to my learners*'.

Apart from the actions teachers witnessed, more significant was the increase in participation of learners who were known for their high levels of passivity:

'*Dit het daartoe gelei dat leerders wat dikwels passief is en te skaam is om antwoorde te gee wel deelneem aan die klas*'

'*…the ones that were normally quiet weren't quiet and that was nice*'

'*So al het sy net twee sinne gesê sy het ten minste twee sinne in Afrikaans gesê en dit is kinders wat gewoonlik nie 'n woord wil sê nie*'

'*En selfs met die Gr 9's met die woordeboek, daar is van dies wat uhm jy weet hulle lê mos al is dit meisies het jy ook nou maar daai lêendes. Selfs die lêendes het regop gesit en deelgeneem*'

Once again, the findings demonstrate that an increase in learners' level of engagement inevitably implies a decrease in passivity. The most recognisable aspect being the presence of cooperative learning experiences during in-class activities which compel learners to engage with their peers. One of the strengths of the FCP is the potential of the approach to encourage learner engagement, which is a common finding in the FC literature (e.g. Edwards, 2017; Lee et al., 2022; Patterson et al., 2018; Smith, 2015).

More importantly, was the increase in levels of engagement seen across the quiet, shy, or extremely passive learners whose interactions are usually limited in class. Although the reason for their disengagement is unknown, two possible suggestions are found in the FCP literature. The first refers to low performers (Bernstein, 2018; Lee et al., 2022; Sergis et al., 2018), whereas the second relates to the effect of different personality types on engagement when implementing the FCP (Fauzi & Hussain, 2016). The FCP are more adept to address specific learner needs and help learners access their zone of proximal development. One may argue that these factors help activate learners self-determined behaviours, positively affecting their will to engage thereby countering passive learning behaviour.

To conclude SRQ 3, the FCP can be seen as a goal of flipped learning and a prerequisite of success as it is fundamentally designed to effectively engage learners in meaningful activities (Lee et al., 2022). As seen in the overall discussion above, the AFCP serves as a helpful intervention to increase learner engagement, participation and motivation. Additionally, the findings shed light on the importance and somewhat responsibility of teachers to action active learning experiences. Furthermore, it was

found that the AFCP had a direct influence on learner autonomy ultimately contributing to increased levels of learner independence. Learners also benefit greatly from cooperative learning experiences as peer-to-peer interactions may lead to improved learner well-being and create opportunities for learners to adapt their frames of reference, which may eventually benefit them in a national or global society.

6.3.4 SRQ 4

What are the benefits for learners, as perceived by teachers, when implementing an AFCP?

Extending the findings of SRQ 3, SRQ 4 explores the educational and/or developmental benefits that learners experience when an AFCP is implemented. From a holistic point of view, teachers provide various accounts of how the AFCP potentiates an overall enriched learning experience through a variety of areas but more specifically, the growth of essential skills. Apart from witnessing an increase in learner engagement and autonomy, teachers commented on potential gains, such as improved thinking and the development of various of 21st century skills. The learning gains were also extended to the emotional domain more specifically the development of socio-emotional skills.

6.3.4.1 Learning experience

The FC is known for research that focuses on learners' improved academic performance (Akçayır & Akçayır, 2018; Cheng et al., 2022). However, due to the short implementation phase and the qualitative nature of the research question, this study pays attention to the positive impact on learning with reference to activating learner autonomy, reaching deeper levels of learning, skill development, increasing levels of learner engagement, autonomy and independence, and addressing or meeting individual learning needs. It became evident that when exposed to a learner-centred pedagogy, learners did not only meet but exceeded teachers' expectations with regards to these learning outcomes:

'*Some people came back and they were like 'Mam, I read this. And do you think this is similar?' And I was like 'What do you think? Why are you asking me? What do you think? Tell me*'

'*I find that they can now highlight key concepts without me telling them what those actually are, as they have a basic idea of what they are learning about, so they are reading their work with more understanding*'

'*They will become eager to learn because they are included in the learning process*'

'*They embraced the idea, have found lessons more stimulating and have learnt so much more than was in the textbooks*'

'*It takes them out of their comfort zone, especially if they used to the teacher talk uhm, mode of teaching*' and

'*The flipped altered approach is a huge improvement the inquisitive learner*'

The findings demonstrate that, when provided with the opportunity to do so, learners accepted greater responsibility for their learning, which transferred into a sense of ownership. This shift is seen as a key aspect in the FC and recognised by various scholars (see, Dennick, 2012; Howard-Jones, 2010; Kane, 2004; Yusuf & Taiye, 2021). It was displayed through learners' actions, such as greater initiative, extending their own learning experiences and higher levels of independence. One may argue that these gains activate learners' self-determined behaviours which are essential for becoming intrinsically motivated. This is considered a major advantage, as learners not only become active, but also start to drive their own learning. Words captured by teachers such as '*embrace*' and '*eager*' connotes positive emotional experiences. Studies on the FC have found that learners experienced higher levels of enjoyment and satisfaction when introduced to the FCP (see, Bernstein, 2018; Cilliers & Pylman, 2022; Edwards, 2017; Fisher et al., 2020; Munir et al., 2018; Yusuf & Taiye, 2021). One may contend that these positive experiences have a reciprocal influence on learners intrinsically motivated behaviours, thereby increasing participation and action and countering learner passivity.

The last excerpt, as observed by one teacher, conveys a novel finding:

'*But the ones that did watch it and did come up with the questions, they enjoyed it. They actually said how they watched it with their families and stuff like that which was actually pretty cool*'

To date, the researcher is not aware of studies which have investigated the impact of the FCP on learners' immediate microsystems. This is a noteworthy finding as it

communicates the potential of the FC to extend the perimeters of classroom life and influence communities on a larger scale.

6.3.4.2 Skills of learning

Another perceived benefit that was considered by teachers, is the growth and development of learners' skills. Teachers foresaw the cognitive and educational benefit of skills therewith recognising their potential long-term impact. One teacher equated the academic value of teacher- and learner-centred pedagogies; however, she recognised skill-development as the strength of the FC and consequently, the more important outcome of the FCP:

'*Uh, academic. Uhm, I think it's as, it's as rigourous as being taught by the teacher. Uhm… I don't think it's more rigourous. And perhaps it depends that depends on the group, and it depends on the… the situation. But I… I don't think that the academics is the most important thing in the flipped classroom*' [quotation followed by a discussion on learners' socio-emotional skill-development]

This finding is substantiated by Patterson et al. (2018) who stated that even though grades were unaffected by the FC, learners exhibited improvement in their own perception across areas such as understanding, skills, attitudes and behaviours in general as well as towards the subject being taught. To a larger degree, the significant long-standing influence of learning skills is recognised by Fisher et al. (2020), who mentions that the potential of the FC lies in its ability to equip learners for the uncertain and complex workforce of the future. It also enables learners to adopt a more authentic approach to their learning, which contributes to an enriched learning process and adequately addressing unique learner needs (Yusuf & Taiye, 2021). What follows is a discussion on the skills of learning which were divided into three categories, namely, thinking-, 21st century- and socio-emotional skills.

6.3.4.2.1 *Thinking skills*

The successful transitioning of teachers to their new role as facilitators is once again emphasised as it is directly associated with the development of necessary learner skills to function and thrive in the modern world (Mitsiou, 2019). By their pedagogic actions, teachers provide learners with the opportunity to become independent and capable thinkers, that enable them to become self-determined learners (Williams, 2017). The first category of learning skills to be discussed, thinking skills, refers to the various

types of thinking teachers witnessed as a result of implementing the AFCP or perceive to be developed when the AFCP is introduced:

'*Cognitively, I think it's very good because it's, uhm…. especially if they used to the teacher talk uhm, mode of teaching that's they they're challenged to think on their own*'

'*I'm thinking specifically in South Africa... I think there's a there's a deficit in… in… now I have to remember the word… Uhm, lateral thinking. And I think… altered flipped would give students more opportunity to develop that*'

'*So ja, ek dink dit gaan soos half om onafhanklike denke, uhm, dit gaan definitief dit bevorder*'

'*I must say what I picked up… They were being more creative…*'

'*…sometimes if we control the way learners learn or how they think, we might just take their creativity away of looking at something and thinking: Why is it like that?*'

'*…it allows the learners almost take the instructions and interpret it in their own ways and to think 'How will I think of a question? 'How do I understand this video?' in their own way*'

'*It's going to develop higher order thinking a lot more*'

'*And I must be I must be honest, I was actually very surprised on how intelligent their questions were*'

'*They really broadened their minds*'

Reference was also made to learners' ability to manage their cognitive load:

'*The other thing if you use flipped classroom that you won't easily overload… go into a cognitive overload*'

With reference to the cognitive domain, the FCP is highly effective to strengthen learners' learning processes and move them towards thinking processes which cannot be achieved through rote memorisation or lecturing (Kloppers & Jansen van Vuuren, 2016; Logan, 2015). Ideally, the learning process shifts to the active restructuring of pre-existing modes of thinking as opposed to the accumulation of knowledge via passive transfer (Li et al., 2021). Similar to the findings, the research shows improvements in areas such as creative thinking (Al-Zahrani, 2015), critical thinking (Wang, 2017), becoming more aware of individual learning processes (Roehl et al., 2013), logical and independent thinking (Yusuf & Taiye, 2021), decision making (Jeffrey, 2006) and being able to produce novel ideas that are relevant to real-world

problems (Al-Zahrani, 2015). The findings demonstrate a collective agreement that the AFCP actuates learners' higher order cognitive thinking. If learners actively practice this over a prolonged period, they may grow their intellectual capacity to solve more complex problems, improve their ability to reason and engage with more challenging curricular content. More importantly, learners may grow the qualities needed to become life-long learners.

6.3.4.2.2   21st Century skills

The activation of prior knowledge generates an onset for deeper learning and building or refining 21st century skills as neural pathways are shaped and/or adjusted once a link has been established with the learner's existing knowledge base (Pellegrino, 2017). These are built up from previous knowledge structures and personal experiences, which impact how the new mental representation of the received information is formed (Euler, 2015). One of the FCP's advantages, is its ability to facilitate and support learners to acquire 21st century skills, which are essential in a world that is rapidly changing (Mitsiou, 2019). Teachers identified a wide array of skills similar as well as different to the existing literature on the FCP. The skills teachers recognised are captured in the following excerpts:

'*I think with the altered flip it's more about teaching a skill then teaching… uhm knowledge and content and the CAPS. So, their advantage would be to have the skill to identify, to do research, to have the discipline to do the work themselves at home*'

'*I think the value that this would add is we are not only setting up these kids' generation to do well in tests, but we're setting them up for life skills, for things beyond just getting good marks and knowing what the teacher is going to ask in the test. But actually, understanding the work*'

'*To critically evaluate information*'

'*Learners will start to realize that they can make meaningful contributions in class, at home or in society in terms of their ability to become critical thinkers and problem solvers. They will become eager to learn because they are included in the learning process*'

'*Media literacy - learners may be exposed to various sources (not only textbook-based)*'

'*Ek dink dit kan probleemoplossingsvaardighede ook verbeter, want hulle moet nou self dink, hulle moet nou self iets doen in plaas daarvan dat iemand vir hulle die inligting voer en instruksies gee*'

'*…to do research on finding information*'

The 21st century skills which are commonly associated with the FCP, includes problem solving, analysing, categorising, reasoning and flexibility (Agonács & Matos; 2019; Bates et al., 2017; Bernard, 2015; Chen, 2016; Mitsiou, 2019; Wang, 2017). These are acquired when learners are provided with learning activities which move beyond knowledge retention and understanding and require the application of higher-order skills (Smith, 2015). Elsewhere, 21st century skills are referred to collectively as 'higher-order thinking skills, deeper learning outcomes, and complex thinking skills' (Saavedra & Opfer, 2012). As with the previous category, these skills similarly form part of the pedagogical outcomes of the CAPS curriculum. When teaching via a teacher-centred approach these skills are often limited and/or neglected as the primary focus is on absorbing information auditorily. An interesting finding from the above is that a few of the teachers' combined skills with autonomous learning when asked what their perceived advantages for learners learning was, when introducing an AFCP. Another noteworthy finding is that none of the teachers referred to *how* they specifically planned for skill development in their lessons, neither did they identify the skills to be covered. This raises an important question as to whether teachers are purposefully creating opportunities for 21st century skill development or whether it is viewed as a by-product of learning which learners are expected to learn along the way.

6.3.4.2.3   *Socio-emotional skills*

Underlined by socio-constructivist theories of learning, FCP research tends to encourage the development of socio-emotional and relational skills (Steen-Utheim & Foldnes, 2018) brought about via the in-class activities. Whilst interacting with their peers, learners may grow in terms of contextual and social awareness whilst exposed to the alternative opinions, views, thoughts and beliefs of others (Chen, 2016; Edwards, 2017; Pressick-Kilborn et al., 2005).

6.3.4.2.4   *In-class activities*

Cooperative learning experiences play a key role in the development of learners' socio-emotional skills. Peer learning, for example, cultivate skills such as collaboration (Olakanmi, 2017), communication (Mitsiou, 2019; Munir et al., 2018) and teamwork

(Yusuf & Taiye, 2021), thereby allowing learners to grow their social connectedness (Jdaitawi, 2019).

Teachers witnessed key aspects in learners' peer-to-peer interactions that demonstrated higher levels of emotional literacy in line with the socio-emotional skills above such as: (i) accepting one another's opinions, (ii) active listening, and (iii) learning to work with people that are different (not their friends). Apart there from, teachers also stated the importance of being able to work as part of an altruistic team, paying attention to and actively engaging with differing points of view as well as learning from one's peers. When cooperative learning strategies are introduced, it increases the possibility of deep-level learning (Munir et al., 2018). This may be due to the fact that cooperative learning is theoretically founded in social-constructivist theories of learning (Dennick, 2012).

6.3.4.3 Positive affect

Two topics that has been underdiscussed in the FCP literature is the impact of the FCP on the overall classroom environment as well as the impact on learners' emotional wellbeing. Within this study, two teachers witnessed a change in learners' physical demeanour:

'*It was just nice, their whole like eyes just lit up*'

'…*they just look more alive when they walk into the class*'.

At present, the researcher is unsure as to what could possibly account for these visible changes. One possible suggestion may be increased levels of satisfaction when interacting with peers (Fisher et al., 2020), another may be due to neurological factors such as the release of dopamine when learners experience success or receive positive feedback (Hohnen & Murphy, 2016). One teacher also commented on an improved morale in the class. A similar observation was made by Yusuf and Taiye (2021) who found that the participants in their study experienced higher levels of dynamism and collaboration, which positively impacted the learning atmosphere whereas Dole et al. (2015) witnessed a change in the classroom environment when learners took more ownership of their learning.

One last potential gain pertains to high-achievers' fear of failing:

'…*they don't like failing. They're deathly afraid of failing, but because they have to work on their own, they have to confront that fear, and so it teaches them to kind of overcome that too*'

Once again, this finding is unique to the research as it once again addresses a few factors that influence whether learners may be receptive towards innovative pedagogical approaches such as the AFCP. It highlights learners' comfort zone regarding the familiar teacher-centred pedagogy as well as their pressure to perform which may be imposed by parents/guardians or to meet the academic requirements of the Department of Higher Education and Training (DHET). This finding to some extent also highlights the power learners may wield to resist change when being introduced to innovative pedagogies. Teachers need to be cognisant of these factors and provide learners with the support needed to overcome their fears.

> *Create. Solve problems. Generate ideas. Demonstrate mental flexibility. Think imaginatively. Innovate. Such directives have become more and more common in public discussions on the current expectations of the global labour market.* (Grigorenko, 2019, p. 116)

One may argue that the changing needs of the global market are somewhat pressurising the education system to become more innovative in their approach to knowledge construction and skill-development. If learners do not acquire the skills needed, they are at a deficit when completing their FET. The skills required by the learner are continuously changing, which requires learners to become active analysts and synthesisers. These skills are situated on the higher levels of Bloom's Taxonomy and often not reached in formal education (Blaschke & Hase, 2016). The benefits for learners when introduced to an AFCP is a step in the right direction to address this short-coming in the education system.

To conclude SRQ 4, the findings demonstrated the numerous benefits for learners when introduced to the AFCP. Overall, it seemed as if learners experienced higher levels of enjoyment and consequently, a more satisfactory learning experience. Learners are also provided with the opportunity to develop thinking-, socio-emotional- and 21st century skills which are well suited to prepare them for life after school. Lastly, what emerged are a few novel findings regarding the potential value and benefit of the AFCP yet to be discovered. Pre-class activities were extended to learners' immediate

families. This may have increased the possibility to communicate and/or cooperate with other role-players within their communities. Learners also displayed visible changes in their physical demeanour implicating the benefit of the intervention in terms of learners physical and/or emotional well-being. Lastly, it became evident that learners' fear of failure may hinder change, which highlight the role learners play in whether the AFCP is resisted or welcomed.

6.3.5   SRQ 5

How are teachers' existing pedagogical approaches adapted when implementing an AFCP?

Teachers, as pedagogues, are skilled in making choices when it comes to balancing the various areas of expertise, as required by their practice. Planning, curriculum design, classroom management, assessment and learner needs are all elements that inevitably structure and influence teachers' pedagogic practices. Consequently, when the shift is made to introduce a learner-centred pedagogy, teachers ought to align all these elements accordingly. The Pillars of Flipped Learning (**F**lexible environment, **L**earning culture, **I**ntentional content, **P**rofessional Educator) serve as a guideline to teachers when introducing the FC and can assist teachers to transition wholly to the new approach of teaching and learning. Teachers, without being officially introduced to the FLIP model via the online training, unknowingly adjusted their practice in line with the FLIP model. Teachers' learning activities demonstrated higher levels of creativity. Two other areas which required adaption to their existing pedagogic practices were planning and finding the means to introduce the intervention.

6.3.5.1   Planning

When addressing the planning of lessons, teachers commented on two aspects, time and lesson preparation which where occasionally found to be interrelated. According to Kazu and Kurtoğlu (2022), effective implementation is highly reliant on teachers' readiness to do the preparatory work. Similar to the FC literature, participants found the overall preparation time increased, as planning demanded more effort and consideration. This may be due to planning both for the pre-class and in-class activities. The significant increase in the time spent on developing learning materials

has been critiqued by teachers in the FC literature (see Bernstein, 2018; Gündüz & Akkoyunlu, 2019; Onurkan Aliusta & Özer, 2016; Reyna, 2015). Apart from the time required to design the resources and activities for active learning, teachers have to take time to consider the logistics of the activities being used (Edwards, 2017).

'*I set up a digital Escape room. It took me 2-3 hours to do it, on ratios, for Gr 10 Math Literacy*'

'*Finding the time to put it all together. Because obviously it doesn't, it's not just time to create the…the resource and put the…the task together, you also have to think it through quite carefully. Because you're not... the whole point is that you're not in control, so you can't, you know, manage it as it goes along*'

'*Uhm, ek dink om so half 'n plan vooruit te maak. Terwyl as jy op 'n tradisionele manier skoolhou dan skryf jy nou maar net in jou beplanning neer dis nou wat ek doen en jou powerpoint is daar en daar gaan jy*'

'*Dit vereis 'n ander manier van dink en voorbereiding. Die opvoeder moet 'n bietjie meer vooruit dink om die pre-klas aktiwiteite saam te stel en leerders voor te berei op wat van hulle verwag word. Dit is net 'n ander manier van dink wat aangeleer moet word*'

'*Teachers (or handbook writers) has to redesign content lessons, to guide the learner with scaffoldings to overcome the uncertainty. The scaffolding should be presented like "hyperlinks" so that the learner can utilise scaffolding where needed*'

'*Ja jy moet net nie in so flipped classroom situasie instap en nou uit jou kop uit op jou voete probeer wing ons gaan nou dit of dat probeer doen nie*'

'*I think it would have allowed me to do so much more because it's just it feels like you sometimes have to either let something else go to make time for something. And that's where I started then realizing that I'm becoming like the students who are complaining about not having enough time. So I started actually working out a schedule for myself and actually deciding that sometimes I'll stay that extra hour or so after school and just do it and then go to gym a bit later and stuff like that. But I think it's a mindset and it was something that I had to learn to just be like, it's OK to just work that extra hour or to put that extra time in*'

'*But the moment you are prepared, your your work is more concise, it's more to the point. It's uh, it's goal oriented*'

As can be seen above, the move to a FCP prompts adaptions to teachers' planning. Teachers referred to the extra hours required, adapting their thinking, making sacrifices where needed and becoming more goal oriented. One may argue that the FCP requires greater input. This may be due to the nature of the pedagogic approach, that is, teaching and learning becomes more specialised due to the core outcomes of

learner-centred education, which is to individualise learning. This may create the demand of a new skillset of teachers on effective time management as they are required to be competent planners and organisers (Kazu & Kurtoğlu, 2022). Teachers, who generally appreciate ready-made materials, which are easy to implement and not too time consuming (Haug & Mork, 2021), may benefit from the AFCP, as it was created to (i) not be dependent on technology, but also (ii) to encourage teachers to use their existing resources by adjusting them where necessary.

6.3.5.2   Introducing the intervention

Preparing learners with their role transitioning in the FC is essential. They need support to adjust from the passive traditional classroom environment towards a more active learner-centred environment. Learners may experience heightened levels of anxiety or become hesitant (*cf.* 6.3.2.4) when introduced to the intervention due to the greater demand on learner input and activity that the FCP requires (Rotellar & Cain, 2016). Possible suggestions to help them prepare may include: introducing them to the purpose, objectives as well as the potential benefits and challenges of the FCP prior to implementation (Al-Zahrani, 2015; Findlay-Thompson & Mombourquette, 2014; Kenwright et al., 2017; Moffett, 2015). Teachers can also structure an activity to gain an awareness of learners' readiness for autonomous learning which may reduce the mismatch between teachers expectations and learners' levels of acceptance of the FCP (Farahani, 2014).

Teachers encountered a variety of reactions when introducing the AFCP. One teacher decided to tell the learners about the intervention after the online training session to help prepare them emotionally, which was met with a positive reaction. Another teacher indicated that implementation should be phased in moderately as learners missed the emotional contact with their teacher when the role change took place. The importance of context with specific reference to learners' demographical background was highlighted as a concern, as it may have a significant impact on learners' prior knowledge (varying degrees) and subsequently, their ability to make meaningful contributions. One teacher had to manage her learners' heightened anxiety through reassuring them that it is not about getting 'the right' answer.

'*So actually, making a decision to tell them about the research and about the process and what it would look like and what is the purpose. The purpose is for them, for it to be learner-centred for them to understand the work instead of just receiving information that they're going to forget in two weeks. Uhm…They… they were very excited to be honest with you and I told them I am doing this training and this is what it is and I wrote on the bord for them, they can go look it up. So, they were excited, and then the next day when I saw them, which is the day after I started with the… the flip lesson and they enjoyed they enjoyed the Google Classroom*'

'*I explained to the students that we would be trying a new way of learning and that all I asked of them was to give it a chance and have a good attitude for 2 weeks and then we would re-evaluate. I did say that I was not going to make the pre-class activities compulsory but that they would miss out on the fun part if they didn't do their part*'

'*Learners living in poor conditions may not have been exposed to real life activities (e.g., camping, visiting places)*'

'*They would like to do it again, but not every day. They… they also want contact with me*'

'*Two begin with, they were quite anxious. They tend to be quite anxious because they were afraid of getting it wrong. And so I had to reassure them quite a lot that this is it's an exploration, also it's poetry, so it lends itself to that sort of thing. Uh, you know it's. It's an exploration. You don't… it's not about right or wrong, it's about what you're thinking, it's about what you find, what you interpret*'

It is extremely important that learners are well-prepared when introducing the FCP. If learners are ill-prepared, it may ultimately lead to learners opposing the FCP altogether (Rotellar & Cain, 2016). Their readiness is also considered critical to their capacity to engage in the class (Fisher et al., 2020), therefore, special attention should be given to how it will be communicated to learners (Mitsiou, 2019). Teachers need to be cognisant of the fact that there may be factors that can cause a misalignment between their positive expectations and learners' responses and/or receptiveness upon implementation.

6.3.5.3   Creative pedagogy

Esquivel (1995) highlights the importance of creativity as an educational goal due to the promise it holds for learner self-actualisation. She continues by emphasising the significant impact teachers can have in unlocking learners' creative abilities via their attitudes, the learning environment they create, their interaction with learners and lastly, their pedagogical practices. The teachers who implemented the AFCP displayed high levels of creativity specifically when designing their in-class activities. These

included educational games such as Bingo or designing a digital Escape the room. One teacher also asked learners to identify poetry terms from modern songs.

According to Jeffrey (2006), creative learning necessitates three central features, innovation, being inventive and being willing to experiment, which are influenced by factors such as teachers' philosophical outlook and attitude. It is associated with intellectual risk-taking, which is seen as a willingness to explore new ideas in the classroom. This openness then serves as an enabling factor which supports teachers to come up with new and interesting pedagogic approaches (Henriksen & Mishra, 2015; Rinkevich, 2011). As seen below, one of the participating teachers made a similar comment:

'*Mm, mm, I think that's a big thing is that you…you have to see it as an experiment… and look and evaluate afterwards and figure you know, decide what worked, what didn't what… And then try again*'

Teachers' creativity furthermore plays an important role in fostering the development of learners' creative abilities (Esquivel, 1995), thereby making it an important part of their praxis. Once again, as discussed under SRQ 2 (*cf.* 6.3.2.2), planning and designing creative activities and resources may increase the emotional demand on teachers and negatively impact innovative resource development. This may ultimately have a detrimental effect especially within a rapidly changing and advancing society, as well as with Gen Z learners currently in the system.

6.3.5.4   Pillars of FLIP

The Flipped Learning Network identified 'four pillars' of the FC via the 'F-L-I-P' acronym, that is, *Flexible environments*, *Learning culture*, *Intentional content* and *Professional educators.* These are meant to assist educators and lectures with adapting and aligning their pedagogy to capture the essence of the FCP in terms of its theoretical foundation and emerging elements (Hamdan et al., 2013). The accounts of teachers relating to FLIP, are demonstrated below.

6.3.5.4.1   *Flexible environment*

In short, flexible classroom environments allow for a variety of learning modes. Teachers have to come to terms with the fact that the in-class time may seem

somewhat noisy or disorganised. Flexibility is key and teachers have to become adaptable especially with regards to work completion and formative assessment (FLN, 2014; Hamdan et al., 2013). Two examples of the findings are as follows:

'*If someone walked into my class, it would have seemed like… the kids were playing around, not working, but they were. It just it looked different*'

'*Flexibility: learners can work and rework certain aspects of the syllabus in their own time, depending on the layout of the subjects' learning structure*'

A flexible environment creates room for multiple assessments and allows more flexibility for the learning process in general (Cheng et al., 2022). It requires teachers to be adaptable, especially regarding curriculum delivery (McWilliam, 2005) and provide differentiated learning opportunities (Guerriero, 2017a) which are relevant to learners' social- and cultural realities (Howard, 2003). Teachers also have to come to terms with less control within the classroom (Dole et al., 2015) as well as grow their capacity to respond to the novelty, change and uncertainty due to the unpredictable nature of the in-class activities (Collie & Martin, 2016).

6.3.5.4.2 *Learning culture*

A Learning culture signifies the move of the teacher from being the lone source of knowledge and information to a more learner-centred approach. Learners are provided with a variety of in-class opportunities to explore topics in greater depth and are actively involved in the process of knowledge construction. Learner-centred pedagogies provide opportunities for learners to access their readiness level where they are continually challenged by moving out of their comfort zones (FLN, 2014; Hamdan et al., 2013). Teachers referred to Learning culture in a variety of ways:

'*…and have learnt so much more than was in the textbooks. In fact I overheard two students talking - the one had been away all week and she asked her friend what work she needed to catch up on, and her friend replied 'We didn't do any of the actual text book work, we did the new learning way and used our brains to think of stuff so now when we begin the work this week it makes sense*"

'*The whole discussion that eventually I'd be like 'OK, you guys need to pack up. We have two minutes, the bells ringing' and they're like 'No Mam we have to stay.' I'm like no, no you have to go, its two minutes the bells gonna ring now' and I had to break the conversation and I just I hated doing it. But it was just amazing that it was so fuelled, and I was just like for once. I just felt like I was sitting around learners that actually were not just being told what to think, and we were actually having conversations*'

'*So, there was also enough, uh, they were enough girls in a group that they didn't all have to present and they didn't all have to write notes and they didn't all have to make a presentation. So, the idea was that two or three of them would present to the class orally. Uhm, and then the rest of them would help with creating the presentations. So, you've got the the…the kids who are uhm, who are strong vocally you confident to present. You've got the kids who are confident to do design work. Got the kids who…who are confident to do research and then the kids who write well and but they all had to contribute and help each other so they had their strengths but they were working together as well, yea*'

The three excerpts above capture the potential of cooperative learning activities to move learners toward learner-centredness and an active learning approach. Not only are learners benefitting from higher levels of engagement, they become more productive, especially when it comes to activities that promote reflection and collaboration (Black et al., 2006). Within peer-to-peer interactions, learners are provided with opportunities to grow their tolerance for diversity and leadership and learn to coach one another (Turner, 2019). More significantly, learners also get to see and value the strengths of their peers (Herman, 2012), which may contribute to enriched learning experiences.

Teachers can use two guidelines to establish a learning culture, namely, (i) aim to maximise learners' potential and (ii) create an engaging learning environment (Yusuf & Taiye, 2021). As facilitators, teachers provide opportunities for self-reflection, group discussions, group activities and roleplay (Horng et al., 2005). Teachers also scaffold the process of knowledge construction (Deakin Crick et al., 2015) with a gradual increase in complexity to support learners to become more independent (Allee-Herndon & Killingsworth Roberts, 2018), thereby growing their confidence (Bates et al., 2017).

6.3.5.4.3   *Intentional content*

Intentional content provides teachers with guidelines to evaluate what they need to teach directly and what materials can be adapted for learners to explore on their own outside the group learning space. The content presented via the active in-class activities need to be differentiated to make it accessible and relevant to all learners (FLN, 2014; Hamdan et al., 2013). Within the study, only one teacher excerpt clearly relates to the guideline provided by the FLN:

'*It also takes a little bit more work because you have to prepare the resources you have to prepare the tasks so that they are… So that they are, uh, scaffolded and…suited to a flipped classroom. I mean, you can do it with almost any task*'

Teachers have a major responsibility when it comes to adapting and differentiating curricula and resources to accommodate and recognise learner uniqueness and diversity. This is mainly due to diversity in terms of learners' personalities, memory capacity, capacity to process, store and retrieve information, prior knowledge, learning preferences, interests, beliefs, readiness for learning, general ability, motivation to learn and also their culture, social class and background (Alexander et al., 2009; Algozzine & Anderson, 2007; Carrol, 1963 in Guerriero, 2017a; Dumont, 2018; Howard, 2003; Reinders, 2010; Väyrynen, 2003). One may argue that the quality of learning is highly dependent on the quality of teaching, which is, to a large extent, determined by the quality of teaching materials used (Kazu & Kurtoğlu, 2022; Mitsiou, 2019). This is once again linked with meticulous planning on the part of the teacher (Erbil, 2020).

6.3.5.4.4 *Professional educator*

Teachers are considered *Professional Educators*, as the FCP is seen as more demanding than traditional teaching. During class time, teachers are engaged in a different capacity as they continually observe their learners to provide them with relevant feedback. They also regularly subject their teaching practice to reflection as to continually improve their trade (FLN, 2014; Hamdan et al., 2013). A few excerpts mark teachers' experience of transitioning into the role as facilitator, which forms part of the guidelines of Professional educator:

'*Not stepping in, not telling them that they're wrong, letting them… letting them… figure out that they're on the right path or on the wrong path on their own*'

'*I was not there. Not teaching like… giving them information… I was observing facilitating in the background, sitting there, making comments, helping, but I wasn't. I wasn't at my desk, I wasn't at in front of the bord, I was just…I was just there (shrugs & laughs)*'

'*I think I already kind of do like I... I take the bits that I like. And then I use those then take the…the bits that suit me and I use those. So, I don't think I'll ever manage a classic kind of lesson plan uhm, based on it, but I'll definitely use things over and over again*'

'*Indien ander of moeiliker inhoud bespreek word, sal ek graag die aktiwiteite wat tydens die les plaasvind meer wil struktureer*'

'*Uhm, and being ready to... (chuckles) catch them if they're... going in the wrong... going in the wrong direction*'

'*And yes, the… the teacher would have to put in work beforehand, but then you know that it would maybe give them the opportunity to…to sit back and observe instead of being... uhm, completely involved all the time*'

'*Veral by die gr.8 Afrikaans Huistaal-klas kon ek vinniger optel watter leerders nog nie die werk onder die knie het nie omdat hulle hul stappe moes verduidelik*'

A more learner-centred way of teaching necessitates a change in the professional practice of teachers (Bäcklund & Hugo, 2018). As can be seen above, teachers must decentralised themselves in the process of learning. They have to take a step into the background from where they can observe learners and step in when necessary to provide feedback and support, whilst monitoring the quality of learning (Guerriero, 2017a; Munir et al., 2018). Teachers should also refrain from interrupting or immediately correcting learners' errors and rather provide guidance or ask open ended questions (Horng et al., 2005). Through careful observation, teachers can respond to learners' differing needs by, for example, adjusting the lesson pace or seek out better resources to better explain key points (Collie & Martin, 2016).

In the words of Reeve and Cheon (2021), teachers require a higher level of patience to allow learners to struggle, adjust and change their behaviour while working at their preferred pace. They continue by stating that patience is linked motivationally to learners' autonomy and that meaningful gains (cognitive engagement, conceptual learning, behaviour) change continually requiring various revisions. Teachers would also have to support the change associated with learners' perspective on mistakes, by rather viewing it as a necessary part of the learning process (Farahani, 2014). Teachers should consequently challenge themselves to reflect and critically evaluate their practice to move to a point where they deliberately 'unlearn' (McWilliam, 2008) their old habits. Teachers may therefore need support when embarking on this process of becoming a Professional Educator (Mitsiou, 2019).

6.3.5.4.5　*FLIP*

As can be seen above, teachers displayed limited examples of transitioning wholly to include all four facets of the FCP. Teachers seemed motivated to experiment with creative pedagogy when it came to the pre-class and in-class activities; however, one needs to ask the question whether this can be maintained over a prolonged period. Once again teachers' assessment literacy is highlighted as a main concern, as it may have a direct impact on establishing a Learning culture in the classroom. With reference to Intentional content, only one teacher commented on adapting the resources to assist with scaffolding the learning process. This may reveal another shortcoming in teachers' knowledge base, which is in line with their assessment literacy, that is, how to develop quality and effective resources for the FC. With reference to becoming a Professional educator, teachers may need support to develop their observation, evaluation and reflection skills to ensure they provide learners with accurate and high-quality feedback.

To conclude SRQ 5, attention was given to adaptions teachers ought to make to their existing pedagogic practice when introducing the AFCP. When moving from a teacher-centred approach to a learner-centred approach, it foremost requires teachers to plan more thoroughly and make the necessary adjustments to their resources. This may be time consuming and consequently, add to teachers' emotional demand. Teachers will have to give special attention to when they introduce the intervention to their learners, as their readiness may have an impact on their receptiveness and consequently, whether they accept or reject the intervention. The findings also revealed higher levels of teacher creativity thereby introducing the notion of creative pedagogy which may benefit learners in numerous ways. The FLN provides teachers with guidelines on how to effectively implement the FC. The findings showed various shortcomings in teachers' attempts when introducing the AFCP to meet these requirements. Suggestions to meet the aforementioned are further discussed in chapter 7.

6.3.6   SRQ 6

To what extent, from the teachers' view, does the AFCP support learners' self-determined behaviours with regards to the need for autonomy, competency and relatedness?

Active engagement can be considered central to initiate the AFCP intervention as it ultimately drives the successful implementation thereof. Central to this 'action' is the intrinsically motivated behaviours of both teachers and learners. The attempt to answer SRQ 6 sheds light on the potential strength of the AFCP to activate learners' self-determined behaviours. This enables them to transition from passively learning via the teacher-centred approach across the Pedagogy-Andragogy-Heutagogy continuum to become learners who initiate, regulate and drive their own learning experiences with limited dependence on their teachers. Central to self-determined learning, is humans' psychological need for autonomy, competence and relatedness. From these three needs, autonomy surfaced as the most prominent and has been discussed earlier (*cf.* 6.3.1.5 & 6.3.3.2) in a different capacity and will be included once again in this discussion.

6.3.6.1   Competence

In short, competence "…refers to feelings of effectance, the sense of growing mastery in activities that are optimally challenging and develop one's capacities" (Di Domenico & Ryan, 2017, p.3). Competency is essential when it comes to growing learners' capability and developing their competencies (Banerjee, 2019; Blaschke, 2012). When learners are capable, they can use their knowledge and skills in novel situations, unfamiliar contexts or contexts that are everchanging (Hase & Kenyon, 2007).

Fostering the psychological need for competence is crucial, as learners need to experience a sense of 'enabledness' to initiate and sustain personalised learning activities. Problematic, however is when learners' need for competency is continually thwarted, they may become amotivated (Ryan & Deci, 2020). This ultimately reinforces the passive learning phenomenon as learners do not experience the mastery required to build their confidence nor are they encouraged to take responsibility to drive their

own learning (Turner, 2019). Although teachers acknowledged the potential of the AFCP to build confidence, they were not specific as to how this can be achieved.

'*Yeah, so it builds… it builds confidence*'

'*…to feel confident when they make contributions because they have a platform to do so*'

According to the literature, certain strategies can be employed to support the development of learners' competence. A few examples include providing learners with choices (Herman, 2012) or opportunities to seek out challenges (Turner, 2019) and regular feedback that is constructive and non-comparative (Narendran et al., 2018; Stroet et al., 2015), allowing learners to learn via trial and error (Turner, 2019), communicating clear and consistent instructions and expectations (Stroet et al., 2015) and being willing and enthusiastic when answering learner questions (Stroet et al., 2015). As mentioned earlier, when teachers take on the role as Professional Educator, they have to decentralise themselves in the process of teaching and learning. This is necessary as it creates a healthy learning landscape for learners to develop their self-determined behaviours by addressing their individual psychological needs (Vinayan & Harikirishanan, 2021).

6.3.6.2 Relatedness

The value of the psychological need for *relatedness* is often underestimated and therefore neglected. According to Wang, Liu, Kee and Chian (2019), relatedness was found to be the strongest contributor to autonomous motivation (see teacher excerpt below). For this reason, it becomes imperative for teachers to introduce collaborative activities that encourage peer learning in the classroom. Stroet et al. (2015) identified three areas that can be considered in fostering relatedness. These are (i) affection (showing warmth, fostering a sense of connectedness, treating learners fairly), (ii) 'attunement' (displaying a sense of understanding of the things that are important to learners, being available to all learners in class), and (iii) dependability (being available to offer support, showing commitment to learners' learning). One once again has to consider the strong link between Learning Culture and learners' psychological need for relatedness.

'And, and I think afterwards I think they've found it very rewarding because...The, uhm, the feedback from their peers was very good and they enjoyed the process. They enjoyed, you know, digging into the…the topic on their own without being told exactly what to do'

'And adding to each other's discussions, because that is how I always tell them how an idea starts or how a conversation starts'

'But it was literally…. almost like saying ok here is all of the resources here is everything now you figure it out, and as a group they were able to do it beautifully'

'Reading through this flipped method made me realise that I am working with learners that like to do tasks in groups so I must start to implement groupwork again'

The findings are supported by the literature which found that relatedness is supported by providing opportunities to experience a sense of belonging (Adi Badiozaman et al., 2020), creating opportunities for small group learning (Narendran et al., 2018), introducing group assessments and peer learning (Narendran et al., 2018) and showing respect towards learners and valuing learner individuality (Niemiec & Ryan, 2009). When learners' psychological need for relatedness is satisfied, it positively relates to the interpersonal relationships that are built with their peers and teachers. However, the opposite also holds true, the need for relatedness is thwarted, it may lead to avoidance as learners are trying to protect their self-worth and prevent further need frustration (Bartholomew et al., 2018).

6.3.6.3 Autonomy

Although autonomy was discussed earlier under SRQ 1 and SRQ 3, it was done in a different capacity, consequently, it is important to address its value as one of the three psychological needs. When learner autonomy is supported, a scaffold is provided for learners to internalise autonomous motivation. This contributes to a stronger sense of agency and potentially greater ownership of learning on behalf of the learner (Sheldon et al., 2009). At present, autonomy is seemingly the psychological need that receives the most attention. Autonomy is considered "…a capacity detachment, critical reflection, decision-making, and independent action… [which] denotes a significant measure of independence from the control of others" (Little, 1999, p.11). Central to the notion of autonomy is individual choice which translates into one's ability to make decisions (Reeve & Cheon, 2021). Various references were made to learners' autonomous actions:

'*So, the minute I give them something to do on their own, they run with it and they're quite happy to do that. But yea, it worked nicely. It worked very nicely*'

'*…it's going to teach the children to be to be pro-actively involved in their own education*'

'*…but with my grade elevens they were just full steam ahead. They were just so ready for it*'

'*It's allowing them to also go into their own knowledge and to also think like, 'What do I want out of this?' or 'What value do I see in this?'*'

'*I found that the pre-class set the tone, got them thinking about the subject, and in almost every case they gave me more information than was contained in the textbook*'

'*…because I… I took a seat and they… were able to regulate themselves*'

'*Ek dink dit wys vir leerders dat hulle onafhanklik kan werk, of dat hulle eintlik genoeg kennis het om iets self te ontdek*'

The direct impact of autonomy-supportive teaching has been widely researched (Adi Badiozaman et al., 2020; Cheon & Reeve, 2015; Ryan & Deci, 2020; Stroet et al., 2015). Autonomy-supportive practices are roughly divided into two areas. The first focuses on autonomy support that is driven mainly by teachers' pedagogical practice. For example, teachers can provide an overview of the educational value of activities (Holte et al., 2020), design scaffolded assessments (Narendran et al., 2018), encourage learners to reflect on their learning (Kutluer & Mentiş Köksoy, 2020), and provide learners with opportunities to take ownership, adopt more flexible approaches to lesson planning (Turner, 2019) and initiative of their home- and schoolwork as well as their learning experiences (Ryan & Deci, 2020; Turner, 2019). The second area, however, focuses on providing autonomy support in line with learners' unique needs. For example, teachers can provide learners with opportunities to make choices and pursue individual interests (Adi Badiozaman et al., 2020; Jeno, 2015; Kutluer & Mentiş Köksoy, 2020), make a deliberate attempt to understand and acknowledge learners' perspectives (Ryan & Deci, 2020), incorporate learners' curiosity into the lesson (Stroet et al., 2015), take into account the learner's frame of reference (Deci et al., 1991) or train learners to develop their own learning strategies and provide opportunities to implement these (Hu & Zhang, 2017).

From the findings above, it becomes clear that when learners' psychological need for autonomy, relatedness and competence are met, they are not only more engaged,

they tend to show higher levels of self-determined behaviour. Contrarily, one may argue that within highly controlled environments where learners' psychological needs are neglected, it will have dire consequences on learners' emotional, physical and intellectual development and well-being. Deci and Ryan (2000) have mentioned that learners may display signs of inner conflict, alienation and anxiety and eventually make compensations regarding their learning goals. They also caution that, from a holistic point of view, one may run the risk of compromising the richness and depth of the learning experience (Ryan & Deci, 2019).

6.3.6.4   The Pedagogy-Andragogy-Heutagogy continuum

According to Reeves (2006), and very relevant to the discussion at hand, is the consideration of the conative domain (coined by Snow et al.,1996). The conative domain is associated with action and a drive to perform at the highest level. Although learners may be capable or proficient across their cognitive-, affective-, and physical domains, it does not denote that they have the will, desire, drive, mental energy and self-determination to act and thereby reach their desired learning outcomes. Reeves also raised the concern of the general neglect of this domain in the educational sphere. When learners move along the PAH continuum, their conative domain becomes activated. They grow and establish a desire to learn, which may enable the notion of lifelong learning (Chawla & Singh, 2019). The findings were divided into two categories. The first set of quotes demonstrates the move from pedagogy to andragogy, which is followed by the move from andragogy to heutagogy.

Pedagogy to Andragogy

'*Uhm, and I put them into groups, and I asked them to create a lesson. Uh, I gave them each a role. I asked them to create a lesson which had to include visual elements. It had to include some questions, some study questions. It had to include an introduction and an analysis and also some feedback*'

'*The flipped altered approach is a huge improvement the inquisitive learner. When the learner sits at home, he/she can take their time to construct their own concept of the content. And work that is usually homework can be done in class where the teacher can give the needed support*'

'*…the learners should develop the skills to learn on such a level that teachers don't have to teach but can facilitate learning from the passenger seat*'

'*…to feel confident when they make contributions because they have a platform to do so*'

'*I believe it is the learners' responsibility to learn and the teachers' responsibility to give direction (not instructing alone). It's like learning to drive a car: If the learner doesn't sit in front of the steering wheel, the teacher continues to enhance his/her driving skills while the learner remains a passive passenger. The flipped approach in contradiction, has the potential to flip the teacher out of the driving seat and forces the learner into the driving seat. Learning (according to my definition) is to make sense of uncertainty. Teaching, therefore, is rather about enhancing learners thinking about the content than remembering unquestionable facts. To help the learner making sense of uncertainty, it's important to put the learner behind the steering wheel and give the learner a voice to display their own interpretation. When listening to learners' conceptions, teachers has the opportunity to correct learners' misunderstandings about content. If learners took the wrong turn help them to know the map, so that they can get back on track again. But teachers who do ALL the talking, silence their learners' voices, which means the content remains abstract and the learners main concern is to try and remember everything. When they are writing end exam, they are supposed to know the map and adapt where they needed to*'

'*I started of teaching grade 11's. It was a very bright class that I first taught. They were like the intelligent of the intelligent so it was quite intimidating standing in front of them because they would always want to take a subject that bit further, and I'm like OK girls, can I just like…like this is what I need to teach you, I will do more research and come back to you, but just it was tough because it was the first time I was working with learners who actually wanted to engage in more and not just here's the work here we go so*'

Andragogy to Heutagogy

'*You need to be able to know, this is the instruction, and this is what I need to do without the teacher telling me this is what I need to do. So, being able to regulate themselves in going ok, this is this is what I must look for this is what I have to do and then do it, if that makes sense?*'

'*They enjoyed, you know, digging into the…the topic on their own without being told exactly what to do*'

'*Ek dink dit kan probleemoplossingsvaardighede ook verbeter, want hulle moet nou self dink, hulle moet nou self iets doen in plaas daarvan dat iemand vir hulle die inligting voer en instruksies gee*'

'*I found that the pre-class set the tone, got them thinking about the subject, and in almost every case they gave me more information than was contained in the textbook. I find that they can now highlight key concepts without me telling them what those actually are, as they have a basic idea of what they are learning about, so they are reading their work with more understanding*'

'*…too... be able to work through the content themselves without… without uhm, I think external help like from the teacher*'

'*Now they're teaching themselves (laughs with interviewer)*'

'*Ek dink dit wys vir leerders dat hulle onafhanklik kan werk, of dat hulle eintlik genoeg kennis het om iets self te ontdek*'

In line with the conative domain, the Pedagogy-Andragogy-Heutagogy continuum, coined by Luckin et al (2010), is considered a form of scaffolding, which is aimed at releasing the inherent agency of passive learners, rather than increasing conceptual complexity (Hase & Blaschke, 2021). At the one end, pedagogy requires high levels of control whereas on the other end, heutagogy requires learner maturity and the least teacher control (Ilieva Nikolovska et al., 2019).

Chawla and Singh (2019) capture the move across the continuum in terms of three key aspects, the locus of control (teacher – teacher/learner – learner), skill learning (schools – adult education – self-direction/research), and cognition level (cognitive – meta-cognitive – epistemic cognition). Andragogy and heutagogy, both learner-centred approaches, differ in the sense that andragogy focuses on the best ways for learners to learn. Heutagogy takes it a step further by including the ability of learners to improve their learning skills themselves, that is, learning how to learn and extend learning to informal contexts (Little & Knihova, 2014).

What the above elucidates, is the skills and metal capacity learners can develop at a young age and consequently, they will also not have to be moved back and forth along the PAH continuum (Blaschke, 2014). Learners will also be able to transition to the next phase of their lives with ease, whether it is HET or entering the workforce. The findings clearly demonstrate that learners can transition faster than anticipated across the continuum if they are provided with the opportunity to do so. This may be due to the fact that current brain research on learning has revealed the principles of heutagogy (Banerjee, 2019). In the words of Hase (2014a, p.22), humans "…are hard wired to learn," consequently, we are naturally inclined to analyse, inquire, forge new non-linear self-defined learning paths, ask critical questions and extend the boundaries whilst exploring content when given the opportunity to freely do so (Blaschke, 2016; Blaschke & Hase, 2016).

To conclude SRQ 6, an in-depth look is taken at the relevance and applicability of the theoretical framework which underlines the study. The findings indicate that teachers

referred to all three psychological needs central to SDT theory that is, competence, relatedness and autonomy. Although the need for competence was recognised, the findings suggested that teachers' pedagogic approaches are falling short when addressing this specific psychological need. In line with moving from the active learning phenomenon, the findings also revealed the move across the PAH continuum thereby activating learners' 'conative' domain where higher displays of drive and motivation were observed. The conclusion is made, that when learners are provided with learning experiences at a younger age which can meet their specific needs, it enables their self-determined behaviours. This may benefit them greatly in the future where the workforce is demanding and complex and where specific skills and competencies are required (Youcef, 2021).

6.3.7   OTHER SIGNIFICANT FINDINGS

Although not necessary novel to the FCP literature, the findings discussed below are considered significant to the study. They pose as influences that either enhance or hinder the successful implementation of the AFCP, making this short account noteworthy. These findings also concur with the recommendations made in Chapter 7 of the study. This section is divided into two categories, namely, factors that enhance or inhibit the implementation of the AFCP.

6.3.7.1   Enhancing factors

Briefly discussed below, are the factors found within the study, which may positively affect the implementation of the AFCP.

6.3.7.1.1   *Teacher traits*

Upon asking teachers why they embarked on the online training and decided to participate in the research, their responses carried some noteworthy findings specifically regarding certain attributes which might have contributed to their decision on experimenting with the AFCP. What became visible is key characteristics associated with growth and development, similar to the conative dimension discussed in the previous section. A few examples of these traits include personal drive, positive risk-taking, having a growth mindset, being able to solve problems creatively and having the right attitude.

6.3.7.1.2   *Educational neuroscience*

Although not demonstrating high levels of neuroscientific literacy, teachers recognised the importance and/or value of aligning their pedagogy with aspects of neuroeducation research. This can be seen as truly beneficial in the context of the study as this may serve as motivation for teachers to implement the intervention in future as they recognise the greater educational value or benefits for their learners.

6.3.7.1.3   *School context*

Seen as both an enhancing and inhibiting factor, the school culture as meso-system is considered a major influence in whether the AFCP is attempted. Although a schools' culture can be long withstanding, school leadership and management plays a significant role as to whether it is maintained (in the case of a negative culture) or transformed. Three teachers in the study made reference to the latter. The first credited her principal for being a lateral thinker who takes a proactive approach. This has had a significant effect on the continuous professional development of the staff, which may have a positive impact on whether they are willing to experiment with alternative pedagogies. The second credited her principal for allowing her to experiment with alternative pedagogies to find solution(s) for a class with severe disciplinary problems. The third acknowledged a colleague who used the web-based game, Kahoot, to introduce a new Mathematics concept instead of using it for revision. This challenged her to attempt the AFCP with a difficult Language lesson.

6.3.7.2   Inhibiting factors

Briefly discussed below, are the various factors found within the study which may negatively impact the implementation of the AFCP.

6.3.7.2.1   *The education system and curriculum*

Teachers recognised the incompatibility of the industrialised system with the information era in which we are currently living. Reference was also made to the slow transitioning from teacher-centred to learner-centred approaches in comparison with other countries. Also evident is the influence of high stakes testing that continue to permeate teachers' decision-making regarding their curriculum design and

subsequently, their pedagogic practices. The overemphasis on summative assessment is causing an imbalance between learners' extrinsic and intrinsic motivational properties.

6.3.7.2.2 *School context*

The influence of school culture cannot be ignored. Although teachers can become change agents, they are influenced on a larger scale by their immediate environment, such as the leadership and/or mid-level management that govern the school where they teach. In certain instances, reference was made to colleagues' comfort zones as well as a lack of support (in case of the first-year teacher), which has the potential to hinder the drive for change and innovation negatively. Teachers also voiced shared planning across the grade, which had an impact on their freedom to adapt their pedagogic approaches. Even though not asked to do so, teachers also referred to their experiences of teaching at different schools (public vs private and low quintile vs high quintile) often with limited resources. This provided insight as to the applicability of the intervention across a variety of South African contexts.

6.3.7.2.3 *Definition of the Altered Flipped Classroom Pedagogy*

Alarmingly, when asked during their interviews to give a definition of the AFCP, none of the teachers were able to do so. For some reason, teachers could not capture the notion of adapting existing resources to introduce the pre-class and in-class activities. The purpose for altering the FCP stems predominantly from two motivations, the first is to enable teachers with limited access to technology to employ a learner-centred pedagogy, whilst the second focus on adjusting existing teacher resources to save time. One may conclude that there has been a somewhat superficial adaptation of the AFCP.

6.4 CONCLUSION

Answering the main research questions and supplementary secondary research questions remains the main prerogative of the researcher. It is important to push the boundaries of our existing knowledge base by continually reflecting on what particulars the data are conveying (Casanave & Li, 2015). Within Chapter 6, the researcher attempted to report on the findings of Chapter 5. The findings are linked to the existing

literature to corroborate what has been found by other scholars. Consideration was given to emergent findings as these not only contribute to new scientific literature but also serve as recommendations for further research. Attention was also given to findings which extended the scope of the SRQs. These were recognised and communicated as they are considered imperative to the successful implementation of the AFCP and can, therefore, not be ignored.

In sum, the effective implementation of the AFCP hinges on whether complete role-transitioning by teachers is embraced. This critical component should not be underestimated. Teachers' actions revealed a resistance to relinquish their control, which seemed to be grounded in a deeply embedded mindset or existing habits. Additional factors which hindered this process includes a general uncertainty of how to embrace a learner-centered pedagogy, a greater demand on creative input by teachers as well as overcoming the resistance by their learners when introducing the AFCP.

Another key finding is the need to grow teachers' assessment literacy. Formative assessment emerged as a key component of actioning active learning and also monitoring the individual learning pace and experiences of learners. Regular feedback may well ensure learners are prepared for summative assessments thereby reducing the fear surrounding High-stakes testing. It also positively impacts learner independence, thereby activating learner autonomy.

The findings also yielded unexpected results. Two of these are highlighted. Learners shared their learning experiences with their immediate families. This may positively affect the adult-child relationship between these individuals. It also indefinitely extends the scope of the knowledge gained for the learning process, as input by external role-players, which now transfer to the classroom, can further enrich the learning process. Another is the visible change displayed in learners' physical demeanour which was witnessed by two different participants. This underscores the powerful potential of a learner-centred pedagogy to increase the emotional well-being of learners. Another possible explanation may be, that as learners move along the PAH continuum, their 'conative' domain becomes activated, resulting in this display of individual motivation and drive.

CHAPTER 7

RECOMMENDATIONS, LIMITATIONS AND CONTRIBUTION

7.1   INTRODUCION

Following the interpretation of findings in Chapter 6, Chapter 7 concludes the study by discussing the last key contributions. These include the recommendations based on the findings, the limitations of the study, areas for further research and lastly, the contribution of the study to the academic literature.

7.2   RECCOMENDATIONS BASED ON THE FINDINGS

Based on the research aim, the qualitative data obtained, as well as the findings emanating from the primary and the SRQs, the following recommendations are made:

7.2.1   RECOMMENDATIONS: SRQ 1

Recommendations regarding the process of role-transitioning when implementing the AFCP

- Teachers should recognise the importance of effective role-change as this can be seen as the first step in actioning learners' active contributions to their learning process.
- It is considered pertinent that teachers make a wilful decision to decentralise themselves when it comes to the interaction and engagement in class, thereby allowing for increased levels of participation and interaction.
- Teachers must be cognisant of the fact that there would be an adaption phase when it comes to role transitioning. In-service teachers should familiarise themselves with strategies to support them with this process. One approach whereby teachers can prepare themselves, is to reflect on and/or evaluate their strengths and weaknesses (Hsieh, 2017). Similarly, the training of pre-service teachers should include strategies which beginner teachers can employ to manage their role as facilitator in the classroom. When student teachers are doing their in-school training

(practicum), special attention should be given to practising their role as facilitators and reflecting on their experience.

- Higher levels of resilience and emotional regulative skills are required to navigate the potential opposition of some learners when introducing the AFCP. Being adaptable and flexible are therefore considered core skills required by teachers. Similarly, teachers need to grow their skills to effectively manage change.

- Patience is considered a key trait of autonomy-supportive classrooms (Reeve & Cheon, 2021). Teachers must understand the importance of patience as they allow learners to navigate through the difficulty which they are experiencing with their role change. Learners also have to get accustomed to their new pace.

- Teachers' habits revealed a strong foundational belief in the teacher-centred classroom. Role-transitioning may cause conflict in teachers existing identities. This, however, forms a necessary part of teacher growth and development (Reeves, 2018) and should be recognised as such by teachers. It is suggested that teachers have a support system in place such as a knowledgeable peer or mentor who can help and or assist them in this process.

- Teachers' habits were raised as a major concern due to their strong influence on teachers' actions. Teacher habits are generally under researched (Hobbiss et al., 2021) and as a consequence the potential influence of habits on successful implementation should not be underestimated. The researcher suggests the development of an instrument for teachers which can be used to self-measure their progress and monitor whether they are successfully building new habits.

- Teachers have to be mindful of the strong interplay between control and autonomy. The researcher suggests that teachers refer to the guidelines outlined by the FLN to ensure that they adhere to the Pillars of FLIP. Teachers can also scaffold the process of learning to establish a sense of autonomous learning.

- The parallel connection between the teacher-learner relationship and maintaining a positive sense of control was recognised. Edwards's (2017) relationship-driven approach is suggested to assist teachers with implementing the successful implementation of active learning activities.

7.2.2 RECOMMENDATIONS: SRQ 2

Recommendations on how to manage the challenges teachers experience when implementing the AFCP

- A greater emphasis should be placed on teachers' assessment literacy, specifically formative assessment. Establishing learner-centredness in schools largely rests on teachers' competence and expertise in effectively utilising formative assessments as the purpose of these are predominantly to evaluate learner progress. It is suggested that pre-service teachers receive intensive training in this area to empower them for the learner-centred classroom. In addition, in-service teachers may require training on practical and time efficient formative assessment strategies, which can ultimately become a natural part of the learning process and commonplace in schools.

- At the level of policy, a recommendation is made to amend the scope of content to be covered per subject and grade level to make room for teachers to actively implement formative assessments. It is suggested that the Department of Education creates a repository of formative assessment resources for teachers, which can be easily accessed and adapted for the use of their classrooms.

- Currently, reporting on learner progress in the FET phase (specifically within public school contexts) occurs via an end of term symbol or aggregate. No reference is made to individual areas with which learners struggle. For this reason, the researcher proposes an alternative form of reporting which is more reflective of learners' progress over time, and specifically addresses their individual learning needs. This should flow from the feedback teachers receive from their formative assessments. It is suggested that the Department of Education creates a resource for teachers such an assessment with specific reference to the development of learners' 21st century skills, as this may provide more comprehensive feedback on learner progress and identify specific areas in need of development. Similarly, a self-assessment tool can be created for learners to monitor their progress over the course of the term. Monitoring their own progress may increase their levels of accountability and increase an ownership of learning.

- Introducing peer- and self-assessment is highly beneficial to learn basic skills, such as becoming more self-analytic (Noonan & Duncan, 2005) and practising one's

ability to reflect on one's thinking and learning (Black & Wiliam, 1998). These differentiated assessment strategies are strongly recommended, as they enable the development of essential 21st century skills.

- Designing scaffolded assessments (Narendran et al., 2018) is considered a key strategy is to provide accurate, comprehensive and appropriate feedback (Black & Wiliam, 1998) that, once again, assist learners with producing quality work and provide teachers with information to provide timeous interventions where needed.

- Teachers' ought to critically evaluate their teaching practices and align these with the principles of creative pedagogy, which is widely beneficial to learners as it encourages independent thinking (Horng et al., 2005) and eventually potentiates self-actualisation (Esquivel, 1995).

- Teachers underlined an increase in emotional demand when having to introduce learner-centred approaches, which may ultimately become a barrier to introducing the AFCP. Shared practise with one's subject team or neighbouring schools is suggested as a probable solution. Continuous professional development such as training by the Department of Education to address this specific teacher need, is also recommended; however, the training should specifically aim to provide teachers with practical examples which relates to the curricula being taught.

- Learners may resist or oppose the implementation of the AFCP for various reasons. Apart from being mindful of the factors driving their resistance, teachers have to prepare strategies best suited to their context to support learners emotionally with the transitioning. A partial flip (Le Roux, 2016) has been suggested as well as communicating the challenges, benefits and outcomes in advance (Al-Zahrani, 2015; Kenwright et al., 2017; Moffett, 2015).

- If learners are continually exposed to teacher-centred approaches, it may encourage passive learning behaviours. Consequently, if learners are introduced to learner-centred approaches from a young age, innovative learner-centred interventions may be met with less resistance.

7.2.3 RECOMMENDATIONS: SRQ 3

Recommendations on the applicability of the AFCP to support learners' active engagement and/or their motivation to learn

- The argument was made that passive teaching reinforces passive learning. Certain actions can therefore be taken (Zepke et al., 2014) when introducing active learning activities such as challenging learners to think, giving feedback on learning, ensuring the subject is interesting and being enthusiastic about the subject.

- Careful consideration should be given to the pre-class activities as they serve as a catalyst for activating learners' autonomous behaviour (Lee et al., 2022), thereby setting the tone for in-class activities. Pre-class activities should aim to activate learners' prior knowledge on the topic(s) or content to be covered during the in-class activities.

- There is a parallel relationship between teachers' control and learners' autonomy. If teachers do not relinquish control of the learning situation, they disable learners from opportunities to take responsibility and/or ownership of their learning.

- In-class activities should be an extension of the pre-class activities and also enable learners to move to their 'zone of proximal development'.

- Learners should be provided with opportunities to share their individual experiences with peers as these provide them with opportunities to share ideas, beliefs and opinions. The variety in social context provides them with the opportunity to adapt their existing frameworks where necessary and aid them to become better adjusted to the wider society (MacCleod, 2004).

- Teachers should provide learners with opportunities to practise their self-discipline and self-regulation skills as this is considered a solution to socialising and going off-task during the in-class activities. A few examples of activities which can be utilised by teachers to achieve this outcome includes goal-setting, providing learners with rubrics or other support structures to monitor group or individual progress (for example, allocating a group leader) (Bergmann & Sams, 2014; Strayer, 2012).

7.2.4 RECOMMENDATIONS: SRQ 4

Recommendations to maximise the benefits for learning when implementing the AFCP

- It is recommended that teachers design creative pedagogic resources and activities that resonate with learners' need for autonomy, relatedness and competence. Once these needs are met, learners experience higher levels of enjoyment and satisfaction which activate their self-motivated behaviours. Consequently, their intrinsic motivation becomes activated as well as their drive to learn.

- Teachers have to recognise the importance and long-term potential of skill-development through the deliberate inclusion of skills in their day-to-day planning.

- The FCP is highly effective when it comes to actuating learners' thinking processes. The development of skills such as critical-, logical-, creative and independent thinking, as well as the ability to introduce novel ideas develop learners' intellectual capacity, that enable them to solve more complex problems. They also become empowered to engage with more challenging problems or content.

- Activating learners' prior knowledge is regarded essential, as it generates a foundation for deeper learning and building and/or refining essential 21st century skills.

- Developing 21st century skills is considered one of the developmental outcomes of the CAPS curriculum. As none of the teachers in the study explained how they addressed skill development in their lessons, the suggestion is made that the Department of Education consider workshops aimed at training in-service teachers to develop activities which foster the development of 21st century skills.

- Based on the aforesaid, it is recommended that subject specific resources which incorporate 21st century skills are made available by the Department of Education for teachers to incorporate into their daily lesson planning.

- Drawing on the benefits of social-constructivist theories of learning, teachers are advised to develop high-quality in-class activities. These are known to encourage higher levels of engagement which then promotes learners' socio-emotional and relational skills (Steen-Utheim & Foldnes, 2018). These then translate directly into learners' abilities to attain higher levels of contextual- and social awareness.

- Peer-assessment is considered key to rigorous formative assessment practices and should be included routinely. These assessments are considered beneficial as they enable growth in areas such as collaboration, communication and teamwork, which allow learners to cultivate their social connectedness (Jdaitawi, 2019) and emotional intelligence.

- When the AFCP is introduced, it may invoke negative emotions such as fear and anxiety as learners are more familiar with a teacher-centred pedagogy. Learners may require additional emotional support to overcome their negative emotions. Teacher calm and preparedness as well as a strong teacher-learner relationship can assist learners with working through these emotions and grow their emotional resilience.

- Overall teachers must recognise the changing needs of the global market in terms of skill- and knowledge development. Teachers can use Bloom's Taxonomy as a guide to scaffold the process of skill development in their classes.

7.2.5 RECOMMENDATIONS: SRQ 5

Recommendations on the adaptation of teachers' pedagogical approaches when implementing the AFCP

- The FCP is generally known (and critiqued) for the increase in lesson time. The researcher suggests that instead of designing resources and activities from the beginning, existing resources can be adapted and used as effectively.

- Cooperative activities generally require more thought and consideration in terms of execution. Teachers have to consider the logistics of the activities being used as oversights may compromise the overall learning experience.

- The increased time input directly correlates with teachers' ability to plan and organise. If teachers consider this as one of their weaknesses, they might require support in relation to their time-management skills.

- Teachers ought to determine learners' readiness before introducing the intervention. A self-evaluation tool can be administered to provide teachers with feedback as to possible concerns and perceived challenges. Addressing these in advance may increase learners' receptiveness of the intervention.

- Preparing learners for the changes brought about by the intervention is key to successful transitioning. Teachers can introduce them to the purpose, objectives and potential benefits and challenges of the FCP prior to implementation (Al-Zahrani, 2015; Findlay-Thompson & Mombourquette, 2014; Kenwright et al., 2017; Moffett, 2015) to lessen the emotional impact.

- Creative pedagogy is influenced by characteristics such as teachers' philosophical outlook and attitude which ultimately translate into intellectual risk-taking and a willingness to explore. Teachers will not be able to initiate creative pedagogy if they are not open to new ideas.

- Creative pedagogy is considered imperative to meet the needs of the generation of learners currently occupying our schools, Gen Z, and should become part of teachers' everyday praxis.

- Having a thorough understanding of the Pillars of FLIP provides teachers with a firm foundation to introduce and drive the FCP. In depth training (HET, in school or departmental) regarding *Flexible environments*, *Learning culture*, *Intentional content* and *Professional educators* is recommended. Reflecting on how existing teacher practices can be adapted and aligned with the outcomes of FLIP is also suggested, to help teachers with the process of transforming their pedagogy in the move to learner-centredness.

- Flexible environments necessitate a deep found knowledge in terms of various learning modes. It also requires high levels of flexibility and adaptability due to the unpredictable nature of the in-class activities. Teachers must continually build and refine their repertoire of teaching modalities as this will assist them with adapting their approaches to accommodate their learners where necessary. This could be achieved through actively participating via continuous professional development initiatives or alternatively collaborating with peers or curriculum experts.

- Creating a *Learning Culture* encompasses more than introducing cooperative and collaborative learning activities. Teachers can use two guidelines to assist them with building such a culture in their classrooms, that is, (i) maximising learners' potential should be viewed as an educational aim, and (ii) ensuring the classroom environment fosters engagement (Yusuf & Taiye, 2021).

- Creating *Intentional content* resides on teachers' ability to create activities, resources and assessments that are accessible, relevant and scaffolded to meet

individual learner needs. This once again emphasises the importance of developing high quality content. It is suggested that teacher training institutions ensure that their programmes enable pre-service teachers to develop suitable resources. Similarly, the Department of Education can create guidelines on developing high quality resources to direct in-service teachers to ensure that they deliver resources of a high standard.

- Becoming a *Professional educator*, requires high-level proficiency in skills such as observation, evaluation and reflection. These serve as a prerequisite to provide learners with accurate and high-quality feedback and place a higher demand on teachers when it comes to ensuring quality learning experiences. With the FCP, teacher feedback on learning extends beyond the cognitive sphere to include behavioural and emotional factors which influences learning. Consequently, teachers ought to have a thorough understanding of how these dimensions interact and ultimately affect learners' learning to provide more effective support and feedback.

- In line with Mitsiou (2019), the suggestion is made to design a monitoring and quality assurance plan which can be aligned with the *FLIP* guidelines to assist teachers when familiarising themselves with the AFCP.

- To be true agents of change, teachers have to be reflective. This encompasses deep thought about the quality of one's teaching and being willing to critique and re-evaluate one's practice (van der Heijden et al., 2015). Critical reflection should be seen as essential to teachers' practice, especially when transitioning towards a more learner-centred approach to teaching.

7.2.6   RECOMMENDATIONS: SRQ 6

Recommendations on supporting the development of learners' self-determined behaviours

- Activating learners' need for competence is imperative as it enables them to confidently use their knowledge and skills in novel situations (Hase & Kenyon, 2007). Strategies to build learner competence include providing learners with choices and opportunities to seek out challenges as well as providing them with feedback that is constructive and non-comparative (Herman, 2012; Turner, 2019;

Narendran et al., 2018). When learners' need for competence is neglected, the outcome may be amotivation (Ryan & Deci, 2020). The data revealed a shortcoming in the teachers' knowledge domain on how to grow and develop competence. This knowledge gap should be addressed with the purpose of enabling teachers to include strategies in their teaching repertoire that foster learners' psychological need for competence.

- Learners' psychological need for relatedness are met when engaging in social interactions with their peers. This has a fundamental impact on learners' ability to build healthy relationships, manage conflict and communicate effectively which are considered indispensable life skills. The following strategies can therefore be utilised to foster learners' need for relatedness, introducing small group learning activities, group assessments and peer learning as well as cultivating mutual respect and encouraging learner individuality (Narendran et al., 2018; Niemiec & Ryan, 2009). One may argue that there exists an interdependent connection between the need for relatedness and creating a *Learning culture* within the classroom. Showing warmth, fostering a sense of connectedness, treating learners fairly, recognising things that are important to learners and showing commitment to learners' learning are all examples of actions that teachers can take to foster relatedness in the FC (Stroet et al. 2015).

- Autonomy-supportive teaching is encouraged as it serves as a scaffold to autonomous motivation and enables learners to take ownership of their learning (Sheldon et al., 2009). Autonomy-supportive teaching is reinforced via teachers' pedagogic practices which consider learners' unique learning needs.

- Recognising the importance of the conative domain is central to the discussion at hand, as it is associated with an individual's action and drive to perform and connotes traits such as mental energy, will and self-determination (Reeves, 2006). It is also regarded as a pre-requisite to activate a desire for lifelong learning (Chawla & Singh, 2019). Moving learners across the PAH continuum from a teacher-centred approach to becoming independent learners who can confidently take responsibility for learning, is suggested as a critical outcome for education which should affect the creation of future educational policies. Learners stand to gain more from their educational experience if they are introduced to andragogy and 'moved' to heutagogy from a younger age.

7.2.7 RECOMMENDATIONS: OTHER SIGNIFICANT FINDINGS

- Certain qualities were identified from the participating teachers which can be considered indicative as to whether teachers would embark on similar studies in future. These include personal drive, positive risk-taking, having a growth mindset, being able to solve problems creatively and having the right attitude, all which strongly correlate with the conative domain, as discussed above. A recommendation is made specifically to school principals and mid-level management to create a culture that promotes similar traits. These may eventually have a direct impact on whether teachers choose to participate or experiment with advancing and/or teacher practices, as to constantly refine their pedagogic practice.

- Having basic knowledge regarding neuroeducational research may provide teachers with a better understanding of the learning process. It could also guide teachers' decision making when developing resources, as these can be designed according to how learners learn optimally. The suggestion is made to train both in-service and pre-service teachers in this area which is currently a fast-growing field in education. The training should, however, include practical examples for teachers which can be implemented with ease.

- The current incompatibility between the industrialised system and the knowledge era was highlighted as a major concern. Part of this problem is flawed assessment practices currently permeating the education sphere with an overemphasis on summative assessment at the cost of formative assessment. Although the Department of Education (in Väyrynen, 2003) has a clear framework stipulating the rationale of formative assessment, teachers are not required to hold a record of these. Intensive training on formative assessment practices, with specific reference to how it can be used to support a *Learning culture* and accommodate individual learner needs, is required and should receive more emphasis in teacher training.

- Teachers who implemented the AFCP and participated in the online interviews could not correctly define what is meant by the AFCP. As it was specifically designed for the South African context, the recommendation is made to arrange training for subject advisors or teachers themselves to empower them with

knowledge on an innovative pedagogic approach that can have a meaningful impact on their class and the education system.

7.3   LIMITATIONS OF THE STUDY

Due to the qualitative nature of the study, this study only captures the experiences of a handful of teachers who decided to participate and introduce the AFCP into their classrooms. Although the researcher took care to contact all the public- and private high- and combined schools in the Western Cape, this sample is by no means representative of the target population. This is more so the case as predominantly teachers who teach at high quintile schools experiences' have been captured. The findings can therefore not be generalised.

The data collection phase of the study occurred during the COVID-19 pandemic (mid-August 2021 - early October 2021). The research design had to be adjusted at a late stage in the research as access to schools was denied or limited. Online teacher training was scheduled, which made it more impersonal. The researcher could also not access schools for observation, which impacted data triangulation.

Relating to the previous limitation is the low response rate as well as the delay from the WCED to obtain permission to conduct research. Invitations could only be sent to schools after the official WCED ethical clearance was received. The schools were contacted to extend the invitation to participate in the research after the 11th of August 2021, which was at the end of week 3 of Term 3 (the term consisted out of 10 calendar weeks). As a result, the first session was hosted on the 25th of August to give teachers enough time to register for the online training. Once again, teachers availability and/or choice to participate may have been affected by factors brought about by the pandemic such as platooning, online teaching, the general uncertainty at the time, as well as absenteeism due to sickness or self-isolation, thereby impacting the response rate. As previously indicated, permission is not granted to commit research in Term 4 at South African schools due to final examinations.

The mailing list, which can be found on the official WCED website, was used to obtain the contact details of the schools. The researcher contacted the schools personally which was a timeous process. A total of 474 schools across the Western Cape province

of South Africa received an invitation to participate in the research. This number excludes the schools where the principals declined the invitation or where the researcher could not initiate contact with the school. The researcher has no guarantee that the invitation reached the intended target audience, that is, in-service teachers at the schools which were contacted.

Due to the short implementation timespan of the intervention, the long-term impact or effect is unknown.

The demographic variables of the participants were not considered, which may ultimately impact the findings of the study as well as the overall success of the intervention on a larger scale. As mentioned earlier, the representation of teachers who teach at low quintile schools is very low (one participant). It is also important to mention that this participant only completed the feedback questionnaire and did not introduce the intervention in her class.

Lastly, the 'pillars of FLIP' were not included in the training manual created for the online training. This may have impacted the level and depth of assimilation by the teachers who implemented the AFCP.

7.4   RECCOMENDATIONS FOR FURTHER RESEARCH

The study addresses how the AFCP can be utilised as an effective intervention to address passive learning in a teacher-centred classroom. This is achieved through the activation of learners' prior knowledge via pre-class activities and designing in-class activities that promote cooperative and collaborative learning. The following recommendations are made for further research:

- Introducing the AFCP within a primary school context
- A longitudinal study where the AFCP is introduced over a prolonged period of time
- Introducing the AFCP in low quintile schools to establish the applicability of the AFCP within these specific contexts
- A qualitative study which investigates teachers' reflective practices as they transition from a teacher-centred to learner-centred pedagogy

- Developing and administering a PAH self-evaluation instrument to capture learners' readiness to move across the PAH-continuum towards becoming self-determined learners

- Investigating the effect on the growth and development of teachers' skills and abilities as well as their level of job satisfaction when transitioning to a learner-centred pedagogy

- A study to identify the supporting measures that can be put in place to assist teachers with managing the emotional demand of creative pedagogy

- Investigating the factors that enhance or inhibit teachers' drive for change with special reference to the conative domain

- A study on how the shift on the PAH-continuum impact and/or affect learners' identities

- The influence of the agency-structure dynamism on the effective implementation of modern classroom pedagogy

- Exploring the potential impact of the AFCP on learners' microsystems and how these can transfer to wider communities

- The impact of prolonged exposure to a learner-centred pedagogy on the emotional well-being of learners

- The impact of prolonged exposure to a learner-centred pedagogy on the emotional well-being of teachers

7.5   CONTRIBUTION TO ACADEMIC RESEARCH

Proposing a framework for an altered flipped class pedagogy as an effective intervention strategy for the teacher-centred classroom

The overall aim of this study was to introduce and intervention (the AFCP) to address passive learning in a teacher-centred classroom. The framework was constructed by drawing on the reviewed literature (Chapters 2 and 3), the empirical findings based on the qualitative data collected (Chapter 5 and 6) as well as my own knowledge as a full-time teacher. The framework was created by drawing on various constructs within the field of education, that is, pedagogy (FCP), theories of learning (active learning) and heutagogy as well as cross disciplinary fields such as, psychology (SDT theory) and finally, the neurosciences (neuroeducation research). The overall contribution of this

study is discussed according to three areas: the empirical-, theoretical-, and novel contribution to the existing academic literature.

7.5.1 EMPIRICAL CONTRIBUTION

Empirically, the study contributes significantly to the body of FC research. Research on the implementation of the FCP within high school contexts is limited as it is generally introduced at HET or college level (Akçayır & Akçayır, 2018; Bäcklund & Hugo, 2018). Although only the experiences of teachers were captured, the study yielded findings on the applicability of the FCP both within public and private high schools within the Senior phase as well as the Further Education and Training phase.

This study was conducted in South Africa, a developing country. Teachers in developing countries have not been eager to embrace this alternative pedagogy (Kissi et al., 2017). One of the primary reasons being the limited technological resources and a lack of infrastructure to implement e-pedagogies. The FCP was adapted to specifically address this challenge to accommodate learners, irrespective of their socio-economic status. Furthermore, the South African schooling system could benefit from the educational advantages of a learner-centred approach when introducing the altered FCP, whilst progress is made towards implementing e-pedagogies, as stipulated in the National Development Plan 2030.

Studies on the FC generally employ a mixed-method or quantitative design (Zainuddin & Halili, 2016). The shortcoming of qualitative studies has been recognised by other scholars, which has evoked a call for research on the FCP in this regard (Akçayır & Akçayır, 2018; Steen-Utheim & Foldnes, 2018). This study therefore addresses this gap as it provides a rich account of the experiences of teachers with special reference to their role change, the challenges they face, the adaptions made to their current pedagogic practices as well as the perceived advantages for learners when introducing an AFCP in their classrooms.

The current body of literature on heutagogy has yielded limited empirical evidence on the results of the application of heutagogy or self-determined learning (Agonács & Matos, 2019). The findings of this study demonstrated how high school learners can

comfortably move across the PAH-continuum when their self-determined behaviours are activated via the introduction of a learner-centred pedagogy such as the FC.

A study by Olakanmi (2017) proposed that teachers will have to be trained or retrained on how to implement the FCP into their existing practice. The online training conducted by the researcher directly speak to this suggestion. The training incorporates real-life examples from the researcher's high school classroom to provide teachers in similar working conditions with practical examples on how to implement the AFCP with ease into the mainstream classroom. It has both a theoretical and practical approach, thereby making it more applicable for the everyday South African classroom context.

FCP research generally tend to focus more on learners' overall learning experience and achievements when the FCP is introduced (Cheng et al., 2022). Within this study special attention was given to teachers' experiences when implementing the FCP within their classes. The intervention was implemented across four subject areas including, Afrikaans (First Additional Language), English (Home Language), Mathematics (Literacy) and Geography. The opinions of teachers were gathered on its applicability across subjects such as French (Second Additional Language), Engineering, Graphics & Design and Natural Science.

Based on the aforementioned, FCP research seems to be common in the STEM disciplines (Science, Technology, Engineering and Mathematics) (Eppard & Rochdi, 2017). This study contributes empirically to implementation in the field of language education which has received little attention (Hung, 2015) and to the knowledge of the researcher, no attention in the South African context.

7.5.2 THEORETICAL CONTRIBUTION

Deci and Ryan's Self-Determination Theory is usually addressed from a psychological point of view, and the pedagogical impact of its implementation is barely discussed within research (Glassner & Back, 2019). This study speaks directly to this shortcoming by demonstrating the applicability of the theory within the educational domain, and more specifically, teachers' praxis and the learning sciences. In line with the a-paradigmatic approach, it validates the properties of the existing theory via its practical application in real-life contexts.

The study also theoretically extends research on the PAH-continuum. The FCP, as an active learning strategy, was introduced to move learners from pedagogy to andragogy where they are more actively involved in their own learning with moderate guidance from the teacher. When learners operate within this domain, it serves as a catalyst to activate their need for autonomy, relatedness and competence (SDT behaviours) which enable them to move further along the continuum towards heutagogy. Here, learners function independently and autonomously and drive their own learning. By implication, the theoretical contribution resides within the co-existing relationship between the theory of active learning, SDT and heutagogy to move high school learners along the PAH-continuum.

7.5.3 ORIGINALITY

The current study is considered original as the FCP, a modern pedagogy which is known for its blended approach and reliance on technology, was altered to meet the needs of the South African context. South Africa is a developing country which at present lacks the infrastructure to utilise technology effectively in the public school system. A training manual (Addendum S) which was developed to guide teachers with the design and implementation of the AFCP, was presented to participants during an on-line training session. A request for teacher support, in the form of a practical guide to design their flipped classroom, has been raised in the scientific literature (Fuchs, 2021). The training and manual were purposely developed to assist teachers with (i) adapting their existing resources, making it more time-efficient than the traditional FCP model and (ii) to provide teachers with an overview of cooperative learning strategies to assist with ideas for the in-class activities, and (iii) empower teachers to implement an innovative learner-centred pedagogical approach. To present this is the first form of training which specifically focuses on the instruction of in-service teachers on the FCP without depending on technology for its implementation.

7.6   FINAL CONCLUSION

Moving back to the introduction of this study, I could not have anticipated the scale at which this phenomenon would be unpacked. Not only have I questioned and critically reviewed my own teaching practice time and time again, I have also come to a deeper realisation and understanding of the teaching profession and its dynamic yet complex

interplay of some of its core elements. The multifaceted nature is reiterated through all the components that are constantly at play. This is but one more piece of the puzzle on how a step can be taken in the direction towards cultivating learner-centredness. When this becomes the norm and learners' mature into self-determined individuals, they may become agents of change in their own right.

REFERENCES

Abeysekera, L., & Dawson, P. (2015). Motivation and cognitive load in the flipped classroom: Definition, rationale and a call for research. *Higher Education Research & Development, 34*(1), 1-14. https://doi.org/10.1080/07294360. 2014.934336

Abiola, O.O., & Dhindsa, H.S. (2012). Improving classroom practices using our knowledge of how the brain works. *International Journal of Environmental and Science Education, 7*(1), 71-81.

Abraham, R.R., & Komattil, R. (2017). Heutagogic approach to developing capable learners. *Medical Teacher, 39*(3), 295-299. https://doi.org/10.1080/0142159X. 2017.1270433

Adams, P. (2014). Self-determined learning: Heutagogy in action. *British Journal of Educational Studies, 62*(4), 476-478. https://doi.org/10.1080/00071005. 2014. 970798

Adi Badiozaman, I.F., Leong, H., & Jikus, O. (2020). Investigating student engagement in Malaysian higher education: A self-determination theory approach. *Journal of Further and Higher Education, 44*(10), 1364-1378. https://doi.org/10.1080/ 0309877X.2019.1688266

Adom, D., Hussein, E.K., & Agyem, J.A. (2018). Theoretical and conceptual framework: Mandatory ingredients of a quality research. *International Journal of Scientific Research, 7*(1), 438-441.

Agonács, N., & Matos, J.F. (2019). Heutagogy and self-determined learning: A review of the published literature on the application and implementation of the theory. *Open Learning: The Journal of Open, Distance and e-Learning, 34*(3), 223-240. https://doi.org/10.1080/02680513.2018.1562329

Agran, M., Wehmeyer, M.L., Cavin, M., & Palmer, S. (2008). Promoting student active classroom participation skills through instruction to promote self-regulated learning and self-determination. *Career Development for Exceptional Individuals*, *31*(2), 106-114. https://doi.org/10.1177/0885728808317656

Ahonen, A.K., & Kinnunen, P. (2015). How do students value the importance of twenty-first century skills? *Scandinavian Journal of Educational Research*, *59*(4), 395-412. https://doi.org/10.1080/00313831.2014.904423

Ajani, O. A. (2021). Curriculum and Assessment Policy Statement (Caps) Document: The challenges and limitations to its effectiveness in South African schools. *African Journal of Educational Studies*, *11*(3), 77-100.

Akçayır, G., & Akçayır, M. (2018). The flipped classroom: A review of its advantages and challenges. *Computers & Education*, *126*, 334-345. https://doi.org/10.10 16/j.compedu.2018.07.021

Akintoye, A. (2015). Developing theoretical and conceptual frameworks. In *EDMIC research workshop*. Ile-Ife: Faculty of Environmental Design and Management, Obafemi Awolowo University, Ile-Ife, Nigeria. https://jedm.oauife.edu. ng/wp-content/uploads/2017/03/Akintola-Akintoye_Developing-Theoretical-and-Conceptual-Frameworks.pdf

Alamri, W.A. (2019). Effectiveness of Qualitative Research Methods: Interviews and Diaries. *International Journal of English and Cultural Studies*, *2*(1), 65-70. https://doi.org/10.11114/ijecs.v2i1.4302

Aldridge, J.M., Fraser, B.J., & Sebela, M.P. (2004). Using teacher action research to promote constructivist learning environments in South Africa. *South African Journal of Education*, *24*(4), 245-253.

Alexander, P.A., Schallert, D.L., & Reynolds, R.E. (2009). What is learning anyway? A topographical perspective considered. *Educational Psychologist, 44*(3), 176-192. https://doi.org/10.1080/00461520903029006

Alexander, R.J. (2001). Border crossings: Towards a comparative pedagogy. *Comparative Education*, *37*(4), 507-523.

Alghafri, A.S.R., & Ismail, H.N.B. (2011). The effects of neuroscience- and non-neuroscience-based thinking strategies on primary school students' thinking. *Procedia - Social and Behavioural Sciences*, *15*(1), 3291-3298. https://doi.org/10.1016/j.sbspro.2011.04.288

Algozzine, B., & Anderson, K.M. (2007). Tips for teaching: Differentiating instruction to include all students. *Preventing School Failure: Alternative Education for Children and Youth*, *51*(3), 49-54. https://doi.org/10.3200/PSFL.51.3.49-54

Allee-Herndon, K., & Killingsworth Roberts, S. (2018). Neuroeducation and early elementary teaching: Retrospective innovation for promoting growth with students living in poverty. *International Journal of the Whole Child*, *3*(2), 4-18.

Allmark, P. (2002). The ethics of research with children. *Nurse Researcher, 10*(2), 7-19.

Alvi, M.H. (2016). *A manual for selecting sampling techniques in research*. University of Karachi, Iqra University.

Al-Zahrani, A.M. (2015). From passive to active: The impact of the flipped classroom through social learning platforms on higher education students' creative thinking. *British Journal of Educational Technology*, *46*(6), 1133-1148. https://doi.org/10.1111/bjet.12353

Anagün, Ş.S. (2018). Teachers' perceptions about the relationship between 21st century skills and managing constructivist learning environments. *International Journal of Instruction*, *11*(4), 825-840. https://doi.org/10.12973/iji.2018.11452a

Anfara, V.A. (2008). Theoretical Frameworks. In L.M. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods* (pp. 1-9). SAGE Publications, Inc. https://doi.org/10.4135/9781412963909

Ansari, D., Coch, D., & De Smedt, B. (2011). Connecting education and cognitive neuroscience: Where will the journey take us? *Educational Philosophy and Theory, 43*, 37-42. https://doi.org/10.1111/j.1469-5812.2010.00705.x

Archibald, M.M., Ambagtsheer, R.C., Casey, M.G., & Lawless, M. (2019). Using Zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18, 1-8. https://doi.org/10.1177/1609406919874596

Aricò, F.R., & Lancaster, S.J. (2018). Facilitating active learning and enhancing student self-assessment skills. *International Review of Economics Education*, *29*, 6-13. https://doi.org/10.1016/j.iree.2018.06.002

Arnett, T. (2019). What creates the motivation to change? 2 key factors influence teachers' willingness to modify their practice. *Learning Professional, 40*(1), 55-58.

Ash, K. (2012). Educators evaluate "flipped classrooms": Benefits and drawbacks seen in replacing lectures with on-demand video. *Education Week, 32*(2), 6-8.

ATLAS.ti Scientific Software Development GmbH [ATLAS.ti 22 Windows]. (2022). Retrieved from https://atlasti.com

Aubrey, K., & Riley, A. (2015). *Understanding and using educational theories*. SAGE.

Auta, A., Strickland-Hodge, B., & Maz, J. (2017). There is still a case for a generic qualitative approach in some pharmacy practice research. *Research in Social and Administrative Pharmacy*, *13*(1), 266-268. https://doi.org/10.1016/j.sapharm.2016.06.005

Awidi, I.T., & Paynter, M. (2019). The impact of a flipped classroom approach on student learning experience. *Computers & Education*, *128*, 269-283. https://doi.org/ 10.1016/j.compedu.2018.09.013

Ayre, J., & McCaffery, K.J. (2022). Research Note: Thematic analysis in qualitative research. *Journal of Physiotherapy*, *68*(1), 76-79. https://doi.org/10.1016/j.jphys.2021.11.002

Bäcklund, J., & Hugo, M. (2018). The paradox of the flipped classroom: One method, many intentions. *Problems of education in the 21st century*, *76*(4), 451-464.

Baker, J.W. (2000). The classroom flip: Becoming the guide by the side. *Communication Faculty Presentations*, 12.

Ball, H.L. (2019). Conducting Online Surveys. *Journal of Human Lactation, 35*(3), 413-417. https://doi.org/10.1177/0890334419848734

Banerjee, P. (2019). Heutagogy: A self-determined approach enhances constructivism. *International Journal of Scientific Research and Review, 7*(6), 223-230.

Barabanova, I., & Kazlauskiene, A. (2020). Neuropedagogy: Preconditions for application of Neuroscience results in the education process while providing feedback. *Technium, 2*(5), 112-122.

Barrenechea, I., Beech, J., & Rivas, A. (2022). How can education systems improve? A systematic literature review. *Journal of Educational Change.* https://doi.org/10.1007/s10833-022-09453-7

Barrett, D., & Twycross, A. (2018). Data collection in qualitative research. *Evidence Based Nursing, 21*(3), 63-64. https://doi.org/10.1136/eb-2018-102939

Bartholomew, K. J., Ntoumanis, N., Mouratidis, A., Katartzi, E., Thøgersen-Ntoumani, C., & Vlachopoulos, S. (2018). Beware of your teaching style: A school-year long investigation of controlling teaching and student motivational experiences. *Learning and Instruction, 53,* 50-63. https://doi.org/10.1016/j.learninstruc. 2017.07.006

Barty, L. (2004). Embracing ambiguity in the artefacts of the past: Teacher identity and pedagogy. *Canadian Social Studies, 38*(3), 1-11.

Başaran, M. (2021). Meta-thematic analysis of flipped classroom applications. *European Journal of Education Studies, 8*(10), 61-88. https://doi.org/10. 46827/ejes.v8i10.3929

Bates, J.E., Almekdash, H., & Gilchrest-Dunnam, M.J. (2017). The flipped classroom: A brief history. In L, Santos Green, J.R. Banas & R.A. Perkins (Eds.), *The Flipped College Classroom* (pp. 3-10). Springer International Publishing.

Becker, R., & Birdi, A. (2018). Flipping the classroom: Old ideas, new technologies. *International Review of Economics Education, 29,* 1-5. https://doi.org/10. 1016/j.iree.2018.06.001

Bell, M.R. (2015). *An investigation of the impact of a flipped classroom instructional approach on high school students' content knowledge and attitudes toward the learning environment* [Master's thesis, Brigham Young University]. BYU ScholarsArchive. https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=5443&context=etd

Bennett, B. (2013). Mastery. In J. Bretzman (Ed.), *Flipping 2.0. Practical strategies for flipping your class* (pp. 7-22). The Bretzmann Group.

Bergmann, J., & Sams, A. (2012a). Before you flip, consider this. *Phi Delta Kappan International*, *94*(2), 25.

Bergmann, J., & Sams, A. (2012b). *Flip your classroom: reach every student in every class every day*. International Society for Technology in Education.

Bergmann, J., & Sams, A. (2013). Flipping for mastery. *Educational Leadership*, *71*, 24-29.

Bergmann, J., & Sams, A. (2014). *Flipped learning: gateway to student engagement.* International Society for Technology in Education.

Bernard, J.S. (2015). The flipped classroom: Fertile ground for nursing education research. *International Journal of Nursing Education Scholarship*, *12*(1), 1-11. https://doi.org/10.1515/ijnes-2015-0005

Bernstein, B. (2000). *Pedagogy, symbolic control and identity*. Rowman and Littlefield.

Bernstein, D.A. (2018). Does active learning work? A good question, but not the right one. *Scholarship of Teaching and Learning in Psychology*, *4*(4), 290-307. https://doi.org/10.1037/stl0000124

Bertram, C. A., Mthiyane, C. C. N., & Naidoo, J. (2021). The tension between curriculum coverage and quality learning: The experiences of South African teachers. *International Journal of Educational Development*, *81*, 1-8. https://doi.org/10.1016/j.ijedudev.2021.102353

Beutel, D. A. (2006). *Teachers' understandings of pedagogic connectedness* [Doctoral dissertation, Queensland University of Technology]. https://eprints.qut.edu.au/17082/1/Denise%20Beutel%20Thesis.pdf

Bhoyrub, J., Hurley, J., Neilson, G.R., Ramsay, M., & Smith, M. (2010). Heutagogy: An alternative practice based learning approach. *Nurse Education in Practice*, *10*(6), 322-326. https://doi.org/10.1016/j.nepr.2010.05.001

Bibby, T. (2009). How do children understand themselves as learners? Towards a learner-centred understanding of pedagogy. *Pedagogy, Culture & Society*, *17*(1), 41-55. https://doi.org/10.1080/14681360902742852

Biesta, G.J.J., & Miedema, S. (2002). Instruction or pedagogy? The need for a transformative conception of education. *Teaching and Teacher Education*, *18*(2), 173-181. https://doi.org/10.1016/S0742-051X(01)00062-2

Bishop, J., & Verleger, M. A. (2013, June). The flipped classroom: A survey of the research. *In 2013 ASEE Annual Conference & Exposition*.

Black, P.J. (2007). Full marks for feedback. *Make the Grade: Journal of the Institute of Educational Assessors, 2*(1), 18-21.

Black, P., McCormick, R., James, M., & Pedder, D. (2006). Learning how to learn and assessment for learning: A theoretical inquiry. *Research Papers in Education*, *21*(2), 119-132. https://doi.org/10.1080/02671520600615612

Black, P., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, *80*(2), 139-148. https://doi.org/10.1177/003172171009200119

Blaschke, L.M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The international review of research in open and distance learning*, *13*(1), 56-71.

Blaschke, L.M. (2014). Moving students forward in the PAH continuum: Maximizing the power of the social web. In L. M. Blaschke, C. Kenyon & S. Hase (Eds.), *Experiences in self-determined learning* (pp. 56-67). https://uol.de/fileadmin/user_upload/coer/Experiences-in-self-determined-learning.pdf

Blaschke, L.M. (2016). *Strategies for Implementing Self-Determined Learning (Heutagogy) within Education: A Comparison of Three Institutions (Australia, South Africa, and Israel)* [Unpublished master's thesis]. Carl von Ossietzky Universität.

Blaschke, L.M. (2019). Self-determined learning: Designing for heutagogic learning environments. In M. J. Spector, B. B. Lockee, & M. D. Childress (Eds.), *Learning, design, and technology: An international compendium of theory, research, practice, and policy.* Springer International Publishing. doi:10.1007/978-3-319-17727-4_62-1

Blaschke, L.M., & Hase, S. (2016). Heutagogy: A holistic framework for creating twenty-first-century self-determined learners. In B. Gros Kinshuk & M. Maina (Eds.), *The Future of Ubiquitous Learning: Learning designs for emerging pedagogies* (pp. 25-40). Springer.

Boaler, J. (2019, December 4). *Why Struggle Is Essential for the Brain - and our lives.* EdSurge.https://www.edsurge.com/news/2019-10-28-why-struggle-is-essential-for-the-brain-and-our-lives

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*(1), 579-616. https://doi.org/10.1146/annurev.psych.54.101601.145030

Bonawitz, E., Shafto, P., Gweon, H., Goodman, N.D., Spelke, E., & Schulz, L. (2011). The double-edged sword of pedagogy: Instruction limits spontaneous exploration and discovery. *Cognition, 120*(3), 322-330.

Boston, C. (2002). The concept of formative assessment. *Practical Assessment, Research, and Evaluation*, *8*, 1-4. https://doi.org/10.7275/KMCQ-DJ31

Bowen, G.A. (2009). Document analysis as a Qualitative Research method. *Qualitative Research Journal*, *9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Brandt, B.A. (2013). The learner's perspective. In S. Hase & C. Kenyon (Eds.), *Self-determined learning: Heutagogy in action* (pp. 99-113). Bloomsbury Academic.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478 088706qp063oa

Bristol, T. (2014). Flipping the classroom. *Teaching and Learning in Nursing*, *9*(1), 43-46. https://doi.org/10.1016/j.teln.2013.11.002

Broido, E.M., & Manning, K. (2002). Philosophical foundations and current theoretical perspectives in qualitative research. *Journal of College Student Development*, *43*(4), 434-445.

Brüssow, S., & Wilkinson, A. (2011). Engaged learning: A pathway to better teaching. *South African Journal of Higher Education*, *24*(3), 374-391. https://doi.org/ 10.4314/ sajhe.v24i3.63444

Bull, B. (2014). Embracing opportunities for self-directed learning in formal learning environments. In L. M. Blaschke, C. Kenyon & S. Hase (Eds.), *Experiences in self-determined learning* (pp. 42-55). https://uol.de/fileadmin/ user_upload/coer/ Experiences-in-self-determined-learning.pdf

Burger, K., & Walk, M. (2016). Can children break the cycle of disadvantage? Structure and agency in the transmission of education across generations. *Social Psychology of Education*, *19*(4), 695-713. https://doi.org/10.1007/ s11218-016-9361-y

Burke, K. M., Shogren, K.A., Raley, S.K., Wehmeyer, M.L., Antosh, A. A., & LaPlante, T. (2019). Implementing evidence-based practices to promote self-determination: Lessons learned from a state-wide implementation of the self-determined learning model of instruction. *Education and Training in Autism and Developmental Disabilities*, *54*(1), 18-29.

Burton, A. (2020). How do I know my students are learning? *The Learning Professional*, *41*(2), 28-35.

Bush, T., Joubert, R., Kiggundu, E., & Van Rooyen, J. (2010). Managing teaching and learning in South African schools. *International Journal of Educational Development*, *30*(2), 162-168. https://doi.org/10.1016/j.ijedudev.2009.04.008.

Byrom, N. (2020). The challenges of lockdown for early-career researchers. *eLife, 9*, 1-3. https://doi.org/10.7554/eLife.59634

Caelli, K., Ray, L., & Mill, J. (2003). 'Clear as Mud': Toward greater clarity in generic Qualitative Research. *International Journal of Qualitative Methods*, *2*(2), 1-13. https://doi.org/10.1177/160940690300200201

Cai, J., Morris, A., Hohensee, C., Hwang, S., Robison, V., Cirillo, M., Kramer, S.L., & Hiebert, J. (2019). Theoretical framing as justifying. *Journal for Research in Mathematics Education, 50*(3), 218-224. https://doi.org/10.5951/ jresematheduc .50.3.0218

Caine, R.N., & Caine, G. (2011). Commentary: How new research on learning is re-writing how schools work and teachers teach. *Learning Landscapes*, *5*(1), 19-26.

Canning, N., & Callan, S. (2010). Heutagogy: Spirals of reflection to empower learners in higher education. *Reflective Practice*, *11*(1), 71-82. https://doi.org/10.1080/ 14623940903500069

Carneiro, R. (2007). The big picture: Understanding learning and meta-learning challenges. *European Journal of Education*, *42*(2), 151-172. https://doi.org/10. 1111/j.1465-3435.2007.00303.x

Carter, S.M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in Qualitative Research. *Qualitative Health Research*, *17*(10), 1316-1328. https://doi.org/10.1177/ 1049732307306927

Casanave, C., & Li, Y. (2015). Novices' struggles with conceptual and theoretical framing in writing dissertations and papers for publication. *Publications*, *3*(2), 104-119. https://doi.org/10.3390/publications3020104

Case, J.M. (2008). Alienation and engagement: Development of an alternative theoretical framework for understanding student learning. *Higher Education*, 55, 321-332.

Chakroun, B. (2017). Qualifications frameworks in a sustainable development context: Reflections and perspectives. In J. Bjørnåvol, S. Pevec Grm & E. Villalba (Eds.), *Global inventory of regional and national qualifications frameworks 2017. Volume I: Thematic chapters* (pp. 11-20). European Centre for the Development of Vocational Training.

Chawla, Y., & Singh, R. (2019). Pedagogy to Andragogy to Heutagogy - a compulsive journey. *no. February*, 1-11.

Chen, M. (2016). Theoretical framework for integrating higher-order thinking into L2 speaking. *Theory and Practice in Language Studies*, *6*(2), 217-226.

Chenail, R. (1995). Presenting Qualitative Data. *The Qualitative Report*, *2*(3), 1-11. https://doi.org/10.46743/2160-3715/1995.2061

Cheng, S., Hwang, G., & Lai, C. (2022). Critical research advancements of flipped learning: A review of the top 100 highly cited papers. *Interactive Learning Environments*, *30*(9), 1751-1767. https://doi.org/10.1080/10494820.2020.1765395

Cheon, S.H., & Reeve, J. (2015). A classroom-based intervention to help teachers decrease students' amotivation. *Contemporary Educational Psychology*, *40*, 99-111. https://doi.org/10.1016/j.cedpsych.2014.06.004

Chisholm, L. (2003, September 9-11). *The Politics of Curriculum Review and Revision in South Africa.* [Paper presentation]. Oxford International Conference on Education and Development. http://www.hsrc.ac.za/resreach/output/output Documents/2285

Chisholm, L. (2005a). The politics of curriculum review and revision in South Africa in regional context. *Compare: A Journal of Comparative and International Education*, *35*(1), 79-100. https://doi.org/10.1080/03057920500033563

Chisholm, L. (2005b). The making of South Africa's "National Curriculum Statement." *Journal of Curriculum Studies*, *37*(2), 193-208. https://doi.org/10.1080/0022027042000236163

Chisholm, L. (2011). Review: The challenge of South African schooling: Dimensions, targets and initiatives. *Transformation audit*, 50-57.

Chisholm, L., Volmink, J., Ndhlovu, T., Potenza, E., Mahomed, H., Muller, J., Lubisi, C., Vinjevold, P., Ngozi, L., Malan, B., & Mphahlele, L. (2005). *A South African curriculum for the twenty first century*. Pretoria.

Chojak, M. (2018). Neuropedagogy as a scientific discipline: Interdisciplinary description of the theoretical basis for the development of a research field. *World Academy of Science, Engineering and Technology International Journal of Educational and Pedagogical Sciences*, *12*(8), 1084-1087. https://doi.org/10.5281/ZENODO.1474341

Chowdhury, R. (2019). Embarking on research in the social sciences: Understanding the foundational concepts. *VNU Journal of Foreign Studies*, *35*(1), 99-113. https://doi.org/10.25073/2525-2445/vnufs.4340

Christie, P. (1998). Schools as (dis) organisations: The 'breakdown of the culture of learning and teaching' in South African schools. *Cambridge Journal of education*, *28*(3), 283-300.

Cilliers, L., & Pylman, J. (2019). Students' perceptions of the flipped classroom a traditional university in the Eastern Cape. In M.Z. Ramorola & U.I. Ogbonnaya (Eds.), *Rethinking Teaching and Learning in the 21st Century: Paper from the South Africa International Conference on Education 2019* (pp. 89-96). African Academic Research Forum.

Cilliers, L., & Pylman, J. (2022). South African students' perceptions of the flipped classroom: A case study of higher education. *Innovations in Education and Teaching International*, *59*(3): 296-305. https://doi.org/10.1080/14703297.2020.1853588

Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, *12*(3), 297-298. https://doi.org/10.1080/17439760.2016.1262613

Claxton, G. (2007). Expanding young people's capacity to learn. *British Journal of Educational Studies*, *55*(2), 115-134. https://doi.org/10.1111/j.1467527.2007.00369.x

Claxton, G. (2018). Deep rivers of learning. *Phi Delta Kappan*, *99*(6), 45-48. https://doi.org/10.1177/0031721718762422

Claxton, G., & Lucas, B. (2009). School as a foundation for lifelong learning: The implications of a lifelong learning perspective for the re-imagining of school-age education. *Inquiry into the Future of Lifelong Learning, Leicester: NIACE.*

Clement, N.D., & Lovat, T. (2012). Neuroscience and education: Issues and challenges for curriculum. *Curriculum Inquiry*, *42*(4), 534-557. https://doi.org/10.1111/j.1467-873X.2012.00602.x

Coch, D. (2018). Reflections on neuroscience in teacher education. *Peabody Journal of Education*, *93*(3), 309-319. https://doi.org/10.1080/0161956X.2018.1449925

Collie, R. J., & Martin, A. J. (2016). Adaptability: An Important Capacity for Effective Teachers. *Educational Practice and Theory*, *38*(1), 27-39. https://doi.org/10.7459/ept/38.1.03

Collins, K., & Millard, M. (2013). Transforming education in South Africa: Comparative perceptions of a South African social work learning experience. *Educational Review*, *65*(1), 70-84. https://doi.org/10.1080/00131911. 2011. 648168

Colorafi Jiggins, K., & Evans, B. (2016). Qualitative Descriptive Methods in Health Science Research. *Health Environments Research and Design Journal*, *9*(4), 16-25. https://doi.org/10.1177/1937586715614171

Conn, K. (2014). *Identifying effective education interventions in Sub-Saharan Africa* [Unpublished doctoral thesis]. Columbia University.

Connelly, L.M. (2014). Use of theoretical frameworks in research. *MEDSURG Nursing*, *23*(3), 187-188.

Cooper, S., & Endacott, R. (2007). Generic qualitative research: A design for qualitative research in emergency care? *Emergency Medicine Journal*, *24*(12), 816-819. https://doi.org/10.1136/emj.2007.050641

Corti, L. (1993). Using diaries in social research. *Social research update*, *2*,1-4.

Creswell, J.D. (2009). *Research design: Qualitative, quantitative and mixed method approaches* (3rd ed.). SAGE Publications Inc.

Creswell, J.W., & Plano Clark, V.L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Sage.

Cross, M., Mungadi, R., & Rouhani, S. (2002). From policy to practice: Curriculum reform in South African education. *Comparative Education*, *38*(2), 171-187. https://doi.org/10.1080/03050060220140566

Cuban, L. (1983). How did teachers teach, 1890-1980. *Theory into Practice*, *22*(3), 160-165.

Dagnew, A. (2017). Effectiveness of neuro-scientific research-based pedagogy in science. *International Journal of Neuroscience and Behavioral Science*, *5*(4), 66-70.

Day, L.J. (2018). A gross anatomy flipped classroom effects performance, retention, and higher-level thinking in lower performing students. *American Association of Anatomists*, *11*(6), 565-574. https://doi.org/10.1002/ase.1772

Deakin Crick, R., Huang, S., Ahmed Shafi, A., & Goldspink, C. (2015). Developing Resilient Agency in Learning: The Internal Structure of Learning Power. *British Journal of Educational Studies*, *63*(2), 121-160. https://doi.org/10.1080/00071005.2015.1006574

Deakin, H., & Wakefield, K. (2014). Skype interviewing: Reflections of two PhD researchers. *Qualitative Research*, *14*(5), 603-616. https://doi.org/10.1177/1468794113488126

Deci, E.L. (1992). On the nature and functions of motivation theories. *Psychological science*, *3*(3), 167-171.

Deci, E.L., Eghrari, H., Patrick, B.C., & Leone, D.R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, *62*(1), 119-142.

Deci, E.L., & Ryan, R.M. (1994). Promoting self-determined education. *Scandinavian Journal of Educational Research*, *38*(1), 3-14. https://doi.org/10.1080/0031383940380101

Deci, E.L., & Ryan, R.M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, *11*(4), 227-268.

Deci, E.L., & Ryan, R.M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 182-185. https://doi.org/10.1037/a0012801

Deci, E.L., & Ryan, R.M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In R.M. Ryan (Ed.), *The Oxford Handbook of Human Motivation* (pp. 85-107). Oxford University Press.

Deci, E.L., Vallerand, R.J., Pelletier, L.G., & Ryan, R.M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, *26*(3-4), 325-346.

DeCuir-Gunby, J.T. Marshall, P.L., & McCulloch, A.W. (2011). Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field Methods*, *23*(2), 136-155. https://doi.org/10.1177/1525822X10388468

Degen, R.J. (2014). Brain-Based Learning: The neurological findings about the human brain that every teacher should know to be effective. *Amity Global Business Review*, 15-23.

De Jager, T. (2013). Guidelines to assist the implementation of differentiated learning activities in South African secondary schools. *International Journal of Inclusive Education*, *17*(1), 80-94. https://doi.org/10.1080/13603116.2011.580465

Delors, J., Mufti, I.A., Amagi, I., Carneiro, R., Chung, F., Geremek, B., Gorham, W., Kornhauser, A., Manley, M., & Padr, M. (1996). *Learning: The treasure within.*

DeLozier, S.J., & Rhodes, M.G. (2017). Flipped Classrooms: A review of key ideas and recommendations for practice. *Educational Psychology Review, 29*, 141-151. https://doi.org/10.1007/s10648-015-9356-9

Demski, J. (2013). 6 Expert Tips for Flipping the Classroom. *Campus Technology, 26*(5), 1-5.

Denfeld, Q., Erickson, E., Valent, A., Villasana, L., Zhang, Z., Myatt, L., & Guise, J. (2020). COVID-19: Challenges and Lessons Learned from Early Career Investigators. *Journal of Women's Health, 29*(6), 752-754. https://doi.org/10.1089/jwh. 2020.8552

Dennick, R. (2012). Twelve tips for incorporating educational theory into teaching practices. *Medical Teacher, 34*(8), 618-624. https://doi.org/10.3109/0142159X. 2012.668244

Denzin, N.K., & Lincoln, Y.S. (2000). *Handbook of qualitative research*. Sage.

Department of Basic Education. (2009). *Report of the task team for the review of the implementation of the National Curriculum Statement*. Department of Basic Education.

Department of Basic Education. (2013). *Macro Indicator Report*. Department of Basic Education.

Department of Basic Education. (2015). *Action Plan to 2019: Towards the realisation of schooling 2030*. Department of Basic Education.

Department of Basic Education. (2018). *Annual Performance Plan 2018/2019*. Department of Basic Education.

Department of Basic Education. (2021). *National education infrastructure management system*. Department of Basic Education.

Department of Education. (1997). *Curriculum 2005 Lifelong learning for the 21st century*. Department of Education.

Department of Education. (2002). *Draft Guidelines for the Implementation of Inclusive Education*. Department of Education: Directorate Inclusive Education: Unpublished manuscript

Department of Education. (2011). *Curriculum and Assessment Policy Statement Grades 10-12*. Department of Education.

De Smedt, B. (2014). Advances in the use of neuroscience methods in research on learning and instruction. *Frontline Learning Research*, *6*, 7-14.

de Villiers, C., Farooq, M. B., & Molinari, M. (2022). Qualitative research interviews using online video technology - challenges and opportunities. *Meditari Accountancy Research*, *30*(6), 1764-1782.

Dewey, J. (1916). *Democracy and education*. Macmillan

Dhambu, N., & Kriek, J. (2018). Using the flipped classroom model to facilitate student interaction and technology integration. In J. Kriek, A. Ferreira, K. Padayachee, S. van Putten & B. Seo (Eds.), *Towards Effective teaching and Meaningful Learning in Mathematics, Science and Technology Education*: Paper from the *9th Annual UNISA ISTE Conference On Mathematics, Science And Technology Education 2018* (pp. 172-178).

Dick, B. (2013). Crafting learner-centred processes using action research and action learning. In S. Hase & C. Kenyon (Eds.), *Self-determined learning: Heutagogy in action* (pp. 39-53). Bloomsbury Academic.

Di Domenico, S.I., & Ryan, R.M. (2017). The emerging neuroscience of intrinsic motivation: A new frontier in self-determination research. *Frontiers in Human Neuroscience*, *11*(145), 1-14. https://doi.org/10.3389/fnhum.2017.00145

Doffermyre Jackson, J. (2016). Formative assessment in the classroom: Getting it right.

Dole, S., Bloom, L., & Kowalske, K. (2015). Transforming Pedagogy: Changing Perspectives from Teacher-Centred to Learner-Centred. *Interdisciplinary Journal of Problem-Based Learning*, *10*(1), https://doi.org/10.7771/1541-5015.1538

Dormehl, J. (2019). The state of our education system and principles for improvement. *Auwal Socio-Economic Research Institute*, 1-15.

Drew, V., & Mackie, L. (2011). Extending the constructs of active learning: Implications for teachers pedagogy and practice. *The Curriculum Journal*, *22*(4), 451-467.

Dubinsky, J.M., Guzey, S.S., Schwartz, M.S., Roehrig, G., MacNabb, C., Schmied, A., Hinesley, V., Hoelscher, M., Michlin, M., Schmitt, L., Ellingson, C., Chang, Z., & Cooper, J.L. (2019). Contributions of Neuroscience knowledge to teachers and their practice. *Neuroscientist*, *25*(5), 394-407. https://doi.org/10.1177/10738 58419835447

Duke, J. (2012). Joining the dots: Piloting the work diary as a data collection tool. *Issues in Educational Research*, *22*(2), 111-126.

Dumont, H. (2018). Adaptive teaching: Students' differences and productive learning. In A. Peterson, H. Dumont, M. Lafuente & N. Law (Eds.), *Understanding innovative pedagogies: Key themes to analyse new approaches to teaching and learning, OECD Education Working Papers No. 172*. (pp. 13-32). OECD Publishing. 13-32 https://doi.org/10.1787/9f843a6e-en

Dumont, H., Istance, D., & Benavides, F. (Eds.). (2010). *The nature of learning: Using research to inspire practice*. OECD.

Edwards, S. (2017). Like a Chameleon: A Beginning Teacher's Journey to Implement Active Learning. *Research in Middle Level Education Online*, *40*(4), 1-11. https://doi.org/10.1080/19404476.2017.1293599

Egbert, J., & Sanden, S. (2014). *Foundations of education research: Understanding theoretical components*. Routledge.

Eisenhart, M.A. (1991). Conceptual frameworks for research circa 1991: Ideas from a cultural anthropologist; implications for Mathematics education researchers. In R.G. Underhill (Ed.), *Thirteenth Annual Meeting of Psychology of Mathematics Education 1991*. (pp. 202-220). Christiansburg Printing Company Inc.

Elliott, H. (1997). The use of diaries in Sociological Research on health experience. *Sociological Research Online*, *2*(2), 38-48. https://doi.org/10.5153/sro.38

Elliott, J.G. (2014). Lessons from abroad: Whatever happened to pedagogy? *Comparative Education*, *50*(1), 27-44. https://doi.org/10.1080/03050068. 2013.871835

Elliott, V. (2018). Thinking about the coding process in Qualitative Data Analysis. *The Qualitative Report*, *23*(11), 2850-2861. https://doi.org/10.46743/2160-3715/ 2018.3560

Eppard, J., & Rochdi, A. (2017). A framework for flipped learning. *International Association for the Development of the Information Society*.

Erbil, D. G. (2020). A review of flipped classroom and cooperative learning method within the context of Vygotsky theory. *Frontiers in Psychology*, *11*: 1-9. https://doi.org/10.3389/fpsyg.2020.01157

Ertmer, P.A., & Newby, T.J. (2013). Behaviorism, Cognitivism, Constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, *26*(2), 43-71.

Esquivel, G.B. (1995). Teacher behaviors that foster creativity. *Educational Psychology Review*, *7*(2), 185-202. https://doi.org/10.1007/BF02212493

Euler, S. (2015). The age of neuroeducation. *English Teaching Professional*, *98*, 4-6.

Evans, B.C., Coon, D.W., & Ume, E. (2011). Use of theoretical frameworks as a pragmatic guide for mixed methods studies: A methodological necessity? *Journal of Mixed Methods Research*, *5*(4), 276-292. https://doi.org/ 10.1177/1558689811412972

Farahani, M. (2014). From spoon feeding to self-feeding: Are Iranian EFL learners ready to take charge of their own learning? *Electronic Journal of Foreign Language Teaching*, *11*(1), 98-115.

Farrell, T.S.C. (2011). Exploring the professional role identities of experienced ESL teachers through reflective practice. *System*, *39*(1), 54-62. https://doi.org/10.1016 /j.system.2011.01.012

Farrington, C.A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T.S., Johnson, D.W., & Beechum, N.O. (2012). *Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review.* University of Chicago Consortium on Chicago School Research.

Fauzi, S.S.M., & Hussain, R.M.R. (2016). Designing instruction for active and reflective learners in the flipped classroom. *Malaysian Journal of Learning and Instruction*, *13*(2), 147-173.

Feiler, J.B., & Stabio, M.E. (2018). Three pillars of educational neuroscience from three decades of literature. *Trends in Neuroscience and Education*, *13*, 17-25. https://doi.org/10.1016/j.tine.2018.11.001

Felder, R. M., & Brent, R. (1996). Navigating the bumpy road to student-centred instruction. *College Teaching*, *44*(2), 43-47. https://doi.org/10.1080/87567555.1996.9933425

Ferrari, M. (2011). What can neuroscience bring to education? *Educational Philosophy and Theory*, *43*(1), 31-36. https://doi.org/10.1111/j.1469-5812.2010.00704.x

Fidan, T., & Oztürk, I. (2015). The relationship of the creativity of public and private school teachers to their intrinsic motivation and the school climate for innovation. *Procedia - Social and Behavioral Sciences*, *195*, 905-914. https://doi.org/10.1016/j.sbspro.2015.06.370

Field, S., Hoffman, A., & Posch, M. (1997). Self-determination during adolescence: A developmental perspective. *Remedial and Special Education*, *18*(5), 285-293. https://doi.org/10.1177/074193259701800504

Filep, C.V., Turner, S., Eidse, N., Thompson-Fawcett, M., & Fitzsimons, S. (2017). Advancing rigour in solicited diary research. *Qualitative Research*, *18*(4), 1-20. https://doi.org/10.1177/1468794117728411

Findlay-Thompson, S., & Mombourquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. *Business Education & Accreditation*, *6*(1), 63-72.

Fisher, D. (2009). The use of instructional time in the typical high school classroom. *The Educational Forum*, *73*, 168-176. https://doi.org/10.1080/00131720902 739650

Fisher, R.L., LaFerriere, R., & Rixon, A. (2020). Flipped learning: An effective pedagogy with an Achilles' heel. *Innovations in Education and Teaching International*, *57*(5), 543-554. https://doi.org/10.1080/14703297.2019.1635904

Flick, U. (2018). *An introduction to qualitative research* (6th ed.). SAGE Publications Ltd.

Flipped Learning Network. 2014. *The four pillars of F-L-I-P*. https://flippedlearning.org/

Foley, M.J. (2021, July 27). *Microsoft Teams hits 250 million monthly active user milestone*. ZDNet. https://www.zdnet.com/article/microsoft-teams-hits-250-million-monthly-active-user-milestone/

Freshwater, D. (2020). Commentary: An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, *25*(5), 456-457. https://doi.org/10.1177/1744987119881060

Friedman, I.A., Grobgeld, E., & Teichman-Weinberg, A. (2019). Imbuing education with brain research can improve teaching and enhance productive learning. *Psychology*, *10*(2), 122-311. https://doi.org/10.4236/psych.2019.102010

Friese, S. (2019). *Qualitative data analysis with ATLAS.TI* (3rd ed.). SAGE Publications Ltd.

Friese, S. (2022). *ATLAS.ti 22 User Manual*. ATLAS.ti Scientific Software Development GmbH.

Froiland, J.M., & Worrell, F.C. (2016). Intrinsic motivation, learning goals, engagement, and achievement in a diverse high school. *Psychology in the Schools*, *53*(3), 321-336. https://doi.org/10.1002/pits.21901

Frost, S.H. (1991). *Academic advising for student success: A system of shared responsibility, ASHE-ERIC Higher Education Report No. 3*. School of Education, George Washington University.

Frydenberg, M. (2012, December 14). *The flipped classroom: It's got to be done right*. Huffpost. https://www.huffpost.com/entry/the-flipped-classroom-its_b_2300988

Fuchs, K. (2021). Innovative Teaching: A Qualitative Review of Flipped Classrooms. *International Journal of Learning, Teaching and Educational Research*, *20*(3), 18-32. https://doi.org/10.26803/ijlter.20.3.2

Fullan, M., & Langworthy, M. (2013). *Towards a new end: New pedagogies for deep learning*. Collaborative Impact.

Fulton, K. (2012). Upside down and inside out: Flip your classroom to improve student learning. *Learning & Leading with Technology*, *39*(8), 12-17.

Garner, R. (1998). Epilogue: Choosing to learn or not-learn in school. *Educational Psychology Review*, *10*(2), 227-237.

Geary, D.C. (2009). The *Why* of Learning. *Educational Psychologist*, *44*(3), 198-201. https://doi.org/10.1080/00461520903029014

Geduld, D., & Sathorar, H. (2016). Leading curriculum change: Reflections on how Abakhwezeli stoked the fire. *South African Journal of Education*, *36*(4), 1-13 https://doi.org/10.15700/saje.v36n4a1319

Gejdoš, M. (2019). Modern trends in education. *International Journal of New Economics and Social Sciences*, *2*(10), 223-233.

Gehlbach, H., Artino, A., & Durning, S. (2010). AM last page: Survey development guidance for medical education researchers. *Academic Medicine*, *85*(5), 925.

Geisinger, K.F. (2016). 21st Century skills: What are they and how do we assess them? *Applied Measurement in Education*, *29*(4), 245-249. https://doi.org/10.1080/08957347.2016.1209207

Gilboy, M.B., Heinerichs, S., & Pazzaglia, G. (2015). Enhancing student engagement using the flipped classroom. *Journal of Nutrition Education and Behavior 47*(1), 109-114.

Glassner, A., & Back, S. (2019). Heutagogy (self-determined learning): New approach to student learning in teacher education. *Journal Plus Education*, *XXIV*, 39-44.

Gojak, L.M. (2012, October 3). *To flip or not to flip: That is NOT the question!* National Council of Teachers of Mathematics. https://www.nctm.org/News-and-Calendar/Messages-from-the-President/Archive/Linda-M_-Gojak/To-Flip-or-Not-to-Flip_-That-Is-NOT-the-Question!/

Gola, G., Angioletti, L., Cassioli, F., & Balconi, M. (2022). The Teaching Brain: Beyond the Science of Teaching and Educational Neuroscience. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, *13*, 1-5. https://doi.org/10.3389/fpsyg.2022.823832

González-Cutre, D., Sicilia, Á., Sierra, A.C., Ferriz, R., & Hagger, M.S. (2016). Understanding the need for novelty from the perspective of self-determination theory. *Personality and Individual Differences*, *102*, 159-169. https://doi.org/10.1016/j.paid.2016.06.036

Goodwin, B., & Miller, K. (2013). Evidence on flipped classrooms is still coming in. *Educational Leadership*, *70*(6), 78-80.

Goswami, U. (2008). Principles of learning, implications for teaching: A cognitive neuroscience perspective. *Journal of Philosophy of Education*, *42*(3-4), 381-399.

Govender, S. (2018). South African teachers' perspectives on support received in implementing curriculum changes. *South African Journal of Education*, *38*, 1-12. https://doi.org/10.15700/saje.v38ns2a1484

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house." *Administrative Issues Journal: Education, Practice and Research*, *4*(2), 12-26. https://doi.org/10.5929/2014.4.2.9

Graven, M.H. (2014). Poverty, inequality and mathematics performance: The case of South Africa's post-apartheid context. *ZDM Mathematics Education*, *46*(7), 1039-1049. https://doi.org/10.1007/s11858-013-0566-7

Green, R.D., & Schlairet, M.C. (2017). Moving toward heutagogical learning: Illuminating undergraduate nursing students' experiences in a flipped

classroom. *Nurse Education Today*, *49*, 122-128. https://doi.org/10.1016/j.nedt. 2016.11.016

Grigorenko, E.L. (2019). Creativity: A challenge for contemporary education. *Comparative Education*, *55*(1), 116-132. https://doi.org/10.1080/03050068. 2018.1541665

Guay, F., Ratelle, C.F., & Chanal, J. (2008). Optimal learning in optimal contexts: The role of self-determination in education. *Canadian Psychology/Psychologie canadienne*, *49*(3), 233-240. https://doi.org/10.1037/a0012758

Guba, E.G. (1987). What have we learned about naturalistic evaluation? *American Journal of Evaluation*, *8*(1), 23-43.

Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. In E.G. Guba & Y.S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 105-117). SAGE.

Guerriero, S. (2017a). Developmental cognitive neuroscience: Implications for teachers' pedagogical knowledge. In S. Guerriero (Ed.), *Pedagogical knowledge and the changing nature of the teaching profession* (pp. 195-222) OECD Publishing. https://doi.org/10.1787/9789264270695-11-en

Guerriero, S. (Ed.). (2017b). *Pedagogical knowledge and the changing nature of the teaching profession*. OECD Publishing. https://doi.org/10.1787/97892 64270695-11-en

Gündüz, A.Y. & Akkoyunlu, B. (2019). Student views on the use of flipped learning in higher education: A pilot study. *Education and Information Technologies*, *24*(4), 2391-2401. https://doi.org/10.1007/s10639-019-09881-8

Hamdan, N., McKnight, P., McKnight, K., & Arfstrom, K. M. (2013). *The flipped learning model: A white paper based on the literature review titled a review of flipped learning.* Flipped Learning Network/Pearson/George Mason University.

Hanna, P. (2012). Using internet technologies (such as Skype) as a research medium: A research note. *Qualitative Research*, *12*(2), 239-242. https://doi.org/10. 1177/1468794111426607

Hanson, J.L., Balmer, D.F., & Giardino, A.P. (2011). Qualitative research methods for medical educators. *Academic Pediatrics*, *11*(5), 375-386. https://doi.org/10.10 16/j.acap.2011.05.001

Hardiman, M., Rinne, L., Gregory, E., & Yarmolinskaya, J. (2012). Neuroethics, Neuroeducation, and classroom teaching: Where the brain sciences meet pedagogy. *Neuroethics*, *5*(2), 135-143. https://doi.org/10.1007/s12152-011-9116-6

Hart, L.A. (1983). *Human brain and human learning*. Longman Inc.

Hase, S. (2014a). An introduction to self-determined learning (Heutagogy). In L.M. Blaschke, C. Kenyon & S. Hase (Eds.), *Experiences in self-determined learning*. (pp. 15-30). https://uol.de/fileadmin/user_upload/coer/Experiences-in-self-determined-learning.pdf

Hase, S. (2014b). Skills for the learner and learning leader in the 21st century. In L.M. Blaschke, C. Kenyon, & S. Hase (Eds.), *Experiences in self-determined learning* (pp. 99-107). https://uol.de/fileadmin/user_upload/coer/Experiences-in-self-determined-learning.pdf

Hase, S. (2016). Self-determined Learning (heutagogy): Where have we come since 2000? *Southern Institute of Technology Journal of Applied Research*, 2-21.

Hase, S., & Blaschke, L. (2021). So, you want to do Heutagogy: Principles and practice. In S. Hase & L.M. Blaschke (Eds.), *Unleashing the power of learner agency* (pp. 13-33). Edtechbooks.org. https://edtechbooks.org/up/pp

Hase, S., & Kenyon, C. (2000). From andragogy to heutagogy. *UltiBASE In-Site*.

Hase, S., & Kenyon, C. (2003, September 25-27). *Heutagogy and developing capable people and capable workplaces: Strategies for dealing with complexity*. [Paper presentation]. The Changing Face of Work and Learning Conference, Alberta, Canada.

Hase, S., & Kenyon, C. (2007). Heutagogy: A child of complexity theory. *Complicity: An International Journal of Complexity and Education*, *4*(1), 111-118.

Hase, S., & Kenyon, C. (2013). The nature of learning. In S, Hase & C, Kenyon (Eds.), *Self-determined learning: Heutagogy in action*. (pp. 18-35). Bloomsbury Academic.

Haug, B.S., & Mork, S.M. (2021). Taking 21st century skills from vision to classroom: What teachers highlight as supportive professional development in the light of new demands from educational reforms. *Teaching and Teacher Education*, *100*, 1-12. https://doi.org/10.1016/j.tate.2021.103286

Hayes, D. (2015). Against critical thinking pedagogy. *Arts and Humanities in Higher Education*, *14*(4), 318-328. https://doi.org/10.1177/1474022215592248

Heffernan, M. (2019, July 24). *The human skills we need in an unpredictable world* [Video].YouTube. https://www.youtube.com/watch?v=w4OPtFCs_fw

Hennessey, B.A. (2010). The creativity-motivation connection. In J.C. Kaufman & R.J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 342-365). Cambridge University Press.

Henriksen, D., & Mishra, P. (2015). We teach who we are: Creativity in the lives and practices of accomplished teachers. *Teachers College Record: The Voice of Scholarship in Education*, *117*(7), 1-46. https://doi.org/10.1177/0161468 11511700708

Herman, G.L. (2012). Designing contributing student pedagogies to promote students' intrinsic motivation to learn. *Computer Science Education*, *22*(4), 369-388. https://doi.org/10.1080/08993408.2012.727711

Herreid, C.F., & Schiller, N.A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, *42*(5), 62-66.

Hoadley, U. (2012). What do we know about teaching and learning in South African primary schools? *Education as Change*, *16*(2), 187-202. https://doi.org/10. 1080/16823206. 2012.745725

Hoadley, U. (2015). Michael Young and the curriculum field in South Africa. *Journal of Curriculum Studies*, *47*(6), 733-749. https://doi.org/10.1080/00220272.2015. 1065912

Hobbiss, M., Sims, S., & Allen, R. (2021). Habit formation limits growth in teacher effectiveness: A review of converging evidence from neuroscience and social science. *Review of Education*, *9*(1), 3-23. https://doi.org/10.1002/rev3.3226

Hodges, T.S., & Weber, N.D. (2015). Making heads or tails of classroom flipping. *Kappa Delta Pi Record*, *51*(2), 57-63. https://doi.org/10.1080/00228958. 2015.1023135

Hohnen, B., & Murphy, T. (2016). The optimum context for learning: Drawing on neuroscience to inform best practice in the classroom. *Educational & Child Psychology*, *33*(1), 75-90.

Holte, J., Endres, R., Besser, D., & Dunston, D. (2020, June 22-26). *The influence of active, passive, and mixed classroom activities on student motivation.* [Paper presentation]. ASEE Virtual Annual Conference, Virtual/Online. https://doi.org/ 10.18260/1-2--35342

Honeycutt, B. (2016, September 26). *The flipped classroom unplugged: Three tech-free strategies for engaging students*. Faculty Focus. https://www.facultyfocus. com/articles/blended-flipped-learning/flipped-classroom-unplugged-three-tech-free-strategies-engaging-students/

Honeycutt, B. (2017, August 21). *Three reasons to ditch technology in your flipped classroom*. Faculty Focus. https://www.facultyfocus.com/articles/blended-flipped-learning/three-reasons-ditch-technology-flipped-classroom/

Hood Cattaneo, K. (2017). Telling active learning pedagogies apart: From theory to practice. *Journal of New Approaches in Educational Research*, *6*(2), 144-152. https://doi.org/10.7821/naer.2017.7.237

Horn, I. (2009). Learner-centredness: An analytical critique. *South African Journal of Education*, *29*, 511-525.

Horn, M.B. (2013). The transformational potential of flipped classrooms. *Education Next*, *13*(3), 78-79.

Horng, J., Hong, J., ChanLin, L., Chang, S., & Chu, H. (2005). Creative teachers and creative teaching strategies. *International Journal of Consumer Studies*, *29*(4), 352-358. https://doi.org/10.1111/j.1470-6431.2005.00445.x

Howard, T.C. (2003). Culturally relevant pedagogy: Ingredients for critical teacher reflection. *Theory into Practice*, *42*(3), 195-202.

Howard-Jones, P. (2010). *Introducing neuroeducational research*. Routledge.

Howard-Jones, P., Jay, T., & Galeano, L. (2020). Professional development on the science of learning and teachers' performative thinking - A pilot study. *Mind, Brain, and Education*, *14*(3), 267-278. https://doi.org/10.1111/mbe.12254

Hsieh, B. (2017). Step by step, slowly I flip. In L. Santos Green, J.R. Banas & R.A. Perkins (Eds.), *The Flipped College Classroom* (pp. 11-35). Springer International Publishing.

Hu, P., & Zhang, J. (2017). A pathway to learner autonomy: A self-determination theory perspective. *Asia Pacific Education Review*, *18*(1), 147-157. https://doi.org/10.1007/s12564-016-9468-z

Huang, X., Chi-Kin Lee, J., & Yang, X. (2019). What really counts? Investigating the effects of creative role identity and self-efficacy on teachers' attitudes towards the implementation of teaching for creativity. *Teaching and Teacher Education*, *84*, 57-65. https://doi.org/10.1016/j.tate.2019.04.017

Hughes, S., Davis, T.E., & Imenda, S.E. (2019). Demystifying theoretical and conceptual frameworks: A guide for students and advisors of educational research. *Journal of Social Sciences*, *58*(1-3), 24-35. https://doi.org/10.31901/2 4566756.2019 /58.1-3.2188

Hung, H. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning*, *28*(1), 81-96. https://doi.org/10.1080/09588221.2014.967701

Hung, W. (2014). Intrinsic and extrinsic intentional learning: The difference made by self-determination. *Australian Journal of Education*, *58*(1), 50-58. https://doi.org/10.1177/0004944113517832

Hunter, D.J., McCallum, J., & Howes, D. (2019). Defining Exploratory-Descriptive Qualitative (EDQ) research and considering its application to healthcare. *Journal of Nursing and Health Care*, *4*(1), 1-7.

Ilieva Nikolovska, A., Grizev, A., & Iliev, A. (2019, November 12). History of Heutagogy as a self-determinated learning. In *Proceedings of the 2nd International Scientific Conference.* (pp. 147-153).

Illeris, K. (2002). *The three dimensions of learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social.* University Press.

Imenda, S. (2014). Is there a conceptual difference between theoretical and conceptual frameworks? *Journal of Social Sciences*, *38*(2), 185-195. https://doi.org/10. 1080 /09718923.2014.11893249

Ivala, E., Thiart, A., & Gachago, D. (2013, June). A lecturer's perception of the adoption of the inverted classroom or flipped method of curriculum delivery in a hydrology course, in a resource poor university of technology. In *Proceedings of the 8th International Conference on e-Learning* (pp. 207-214).

Ivankova, N.V., Creswell, J.W., & Plano Clark, V.L. (2015). Foundations and approaches to mixed method research. In K. Maree (Ed.), *First steps in research* (4th ed., pp. 261-290). Van Schaik Publishers.

Jacelon, C.S., & Imperio, K. (2005). Participant diaries as a source of data in research with older adults. *Qualitative Health Research*, *15*(7), 991-997. https://doi.org/10.1177/1049732305278603

Jacot, M.T., Noren, J., & Berge, Z.L. (2014). The flipped classroom in training and development: Fad or the future? *Performance Improvement*, *53*(9), 23-28. https://doi.org/10.1002/pfi.21438

Jamaludin, A., Henik, A., & Hale, J. B. (2019). Educational neuroscience: Bridging theory and practice. *Learning: Research and Practice*, *5*(2), 93-98. https://doi.org/10.1080/23735082.2019.1685027

Jamaludin, R., & Osman, S.Z.M. (2014). The use of a flipped classroom to enhance engagement and promote active learning. *Journal of Education and Practice 5*(2), 124-131.

Jang, H., Reeve, J., Ryan, R.M., & Kim, A. (2009). Can self-determination theory explain what underlies the productive, satisfying learning experiences of collectivistically oriented Korean students? *Journal of Educational Psychology*, *101*(3), 644-661. https://doi.org/10.1037/a0014241

Jansen, J. 2015. Our education ecosystems. In L. Albertyn, C. Swart & F. Bonnici (Eds.), *South African Education Innovators Review* (pp. 8-9). Centre for Education Innovations.

Jdaitawi, M. (2019). The effect of flipped classroom strategy on students learning outcomes. *International Journal of Instruction*, *12*(3), 665-680. https://doi.org/10.29333/iji.2019.12340a

Jeffrey, B. (2006). Creative teaching and learning: Towards a common discourse and practice. *Cambridge Journal of Education*, *36*(3), 399-414. https://doi.org/10.1080/03057640600866015

Jenkins, P.C. (2010). Exploring the learning process. *Teaching and Learning in Nursing*, *5*(4), 157-159. https://doi.org/10.1016/j.teln.2010.03.003

Jeno, L.M. (2015). Encouraging active learning in higher education a self-determination theory perspective. *International Journal of Technology and Inclusive Education*, *2*(1), 694-699. https://doi.org/10.20533/ijtie.2047.0533.2015.0091

Johnson, B., & Christensen, L.B. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Sage.

Jolles, J., & Jolles, D. D. (2021). On Neuroeducation: Why and How to Improve Neuroscientific Literacy in Educational Professionals. *Frontiers in Psychology*, *12*, 1-18. https://doi.org/10.3389/fpsyg.2021.752151

Kahn, P., Qualter, A., & Young, R. (2012). Structure and agency in learning: A critical realist theory of the development of capacity to reflect on academic practice. *Higher Education Research & Development*, *31*(6), 859-871. https://doi.org/10.1080/07294360.2012.656078

Kalbfleisch, L. (2015). Educational neuroscience, constructivism, and the mediation of learning and creativity in the 21st century. In L. Kalbfleisch (Ed.), *Educational Neuroscience, Constructivist Learning, and the Mediation of Learning and Creativity in the 21st Century* (pp. 4-5). Frontiers Media SA. https://doi.org/10.3389 /978-2-88919-519-0

Kamanga, C. (2013). JET's approach to teacher development. In G. Khoza (Ed.), *Systemic school improvement interventions in South Africa: Some practical lessons from development practitioners* (pp. 21-29)*.* African Minds. https://www.jet.org.za/resources/jet-systemic-school-improvement-lessons

Kane, L. (2004). Educators, learners and active learning methodologies. *International Journal of Lifelong Education*, *23*(3), 275-286. https://doi.org/10.1080/0260/ 37042000229237

Karboul, A. (2017, November 3). *The global learning crisis and what to do about it* [Video]. YouTube. https://www.ted.com/talks/amel_karboul_the_global_ learning_crisis_and_what_to_do_about_it?language=en

Kazu, İ.Y., & Kurtoğlu, C. (2022). An investigation of secondary school teachers' flipped classroom readiness. *South African Journal of Education*, *42*(1), 1-11. https://doi.org/10.15700/saje.v42n1a2020

Keiler, L.S. (2018). Teachers' roles and identities in student-centred classrooms. *International Journal of STEM Education*, *5*(34), 1-20. https://doi.org/10.1186/ s40594-018-0131-6

Kenwright, D., Dai, W., Osborne, E., Gladman, T., Gallagher, P., & Grainger, R. (2017). "Just tell me what I need to know to pass the exam!" Can active flipped learning overcome passivity? *The Asia Pacific Scholar*, *2*(1), 1-6. https://doi.org/10. 29060/TAPS.2017-2-1/OA1007

Kenyon, C., & Hase, S. (2013). Heutagogy fundamentals. In S. Hase & C. Kenyon (Eds.), *Self-determined learning: Heutagogy in action* (pp. 7-17). Bloomsbury Academic.

Khoza, G. (2013). *Systemic school improvement interventions in South Africa: Some practical lessons from development practitioners.* African Minds. https://www.jet.org.za/resources/jet-systemic-school-improvement-lessons

Kim, S., Raza, M., & Seidman, E. (2019). Improving 21st-century teaching skills: The key to effective 21st-century learners. *Research in Comparative and International Education*, *14*(1): 99-117. https://doi.org/10.1177/17454999 19829214

King, A. (1993). From sage on the stage to guide on the side. *College Teaching*, *41*(1), 30-35.

Kirschner, P.A., Sweller, J., & Clark, R.E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, *41*(2), 75-86. https://doi.org/10.1207/s15326985ep 4102_1

Kissi, P.S., Nat, M., & Idowu, A. (2017). Proposed flipped classroom model for high schools in developing countries. *New Trends and Issues Proceedings on Humanities and Social Sciences*, *4*(4), 150-158.

Kivunja, C. (2014). Do you want your students to be job-ready with 21st century skills? Change pedagogies: A pedagogical paradigm shift from Vygotskyian social constructivism to critical thinking, problem solving and Siemens' digital connectivism. *International Journal of Higher Education*, *3*(3), 81-91. https://doi.org/10.5430/ijhe.v3n3p81

Kloppers, M., & Jansen van Vuuren, M. (2016). Enhancing critical thinking dispositions in the mathematics classroom through a flipped learning approach. *Journal of Communication*, *7*(1), 151-160. https://doi.org/10.1080/0976691X.2016. 11884894

Kostere, S., & Kostere, K. (2021). *The Generic Qualitative Approach to a Dissertation in the Social Sciences: A Step by Step Guide*. Routledge. https://doi.org/10.432 4/9781003195689

Kuchah, K., & Smith, R. (2011). Pedagogy of autonomy for difficult circumstances: From practice to principles. *Innovation in Language Learning and Teaching*, *5*(2), 119-140. https://doi.org/10.1080/17501229.2011.577529

Kutluer, M.U., & Mentiş Köksoy, A. (2020). Positive education and self-determination theory: A review of implementations and influences. In H. Şahin (Ed.), *Educational Sciences: Theory, Current Researches and New Trends* (pp.195-208). IVPE.

Lage, M.J., Platt, G.J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *Journal of Economic Education*, *31*(1), 30-43.

Lambert, V.A., & Lambert, C.E. (2012). Editorial: Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research*, *16*(4), 255-256.

Lear, J. L., Bridges, D., Horn, B. V., & Hodge, K. A. (2019). Teaching strategies that promote learning for the 21st Century student. *NACTA Journal*, *63*, 127-132.

Lee, J., Park, T., & Davis, R. O. (2022). What affects learner engagement in flipped learning and what predicts its outcomes? *British Journal of Educational Technology*, *53*(2), 211-228. https://doi.org/10.1111/bjet.12717

Legault, L. (2017). Self-Determination theory. In V. Zeigler-Hill & T.K. Shackelford (Eds.), *Encyclopaedia of Personality and Individual Differences* (pp. 1-9). Springer International Publishing. https://doi.org/10.1007/978-3-319-28099-8_1162-1

Lester, F.K. (2005). On the theoretical, conceptual, and philosophical foundations for research in mathematics education. *Zentralblatt für Didaktik der Mathematik*, *37*(6), 457-467. https://doi.org/10.1007/BF02655854

Letseka, M. (2014). The illusion of education in South Africa. *Procedia - Social and Behavioural Sciences*, *116*, 4864-4869. https://doi.org/10.1016/j.sbspro.2014. 01.1039

Le Roux, A. (2016). Exploring a partially flipped ecology classroom on a rural campus in South Africa. *Journal for New Generation Sciences*, *14*(1), 51-62.

Levy-Feldman, I. (2018). The good teacher for the twenty-first century: A "mentoring teacher" with heutagogical skills. *International Journal of Mentoring and Coaching in Education*, *7*(2), 177-190. https://doi.org/10.1108/IJMCE-10-2017-0067

Li, R., Lund, A., & Nordsteien, A. (2021). The link between flipped and active learning: A scoping review. *Teaching in Higher Education*, 1-35. https://doi.org/10.1080/ 13562517.2021.1943655

Lilly, F.R., & Bramwell-Rejskind, G. (2004). The dynamics of creative teaching. *The Journal of Creative Behavior*, *38*(2), 102-124. https://doi.org/10.1002/j.2162-6057.2004.tb01235.x

Lin, A.M.Y. (2015). Researchers positionality. In F.M. Hult & D.C. Johnson (Eds.), *Research Methods in Language Policy and Planning: A Practice Guide* (pp. 21-32). Wiley Blackwell.

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistiq inquiry*. SAGE Publications, Inc.

Lingard, B., Hayes, D., & Mills, M. (2003). Teachers and productive pedagogies: contextualising, conceptualising, utilising. *Pedagogy, Culture & Society*, *11*(3), 399-424. https://doi.org/10.1080/14681360300200181

Little, B., & Knihova, L. (2014). Modern trends in learning architecture. *Industrial and Commercial Training*, *46*(1), 34-38. https://doi.org/10.1108/ICT-07-2013-0046

Little, C. (2015). The flipped classroom in further education: Literature review and case study. *Research in Post-Compulsory Education*, *20*(3), 265-279. https://doi.org /10.1080/13596748.2015.1063260

Little, D. (1999). *Definitions, issues and problems*. Authentik Language Learning Resources.

Little, D., & Dam, D. (1998). Learner Autonomy. *The Language Teacher Online*, *22*(10). http://www.jalt-publications.org/tlt/files/98/nov/littledam.html.

Liu, L. (2016). Using Generic Inductive Approach in Qualitative Educational Research: A case study analysis. *Journal of Education and Learning*, *5*(2), 129-135. https://doi.org/10.5539/jel.v5n2p129

Lobe, B., Morgan, D., & Hoffman, K.A. (2020). Qualitative data collection in an era of social distancing. *International Journal of Qualitative Methods* 19, 1-8. https://doi.org/10.1177/1609406920937875

Logan, B. (2015). Deep exploration of the flipped classroom before implementing. *Journal of Instructional Pedagogies*, *16*, 1-12.

Lombardi, D., Shipley, T. F., & Astronomy Team, Biology Team, Chemistry Team, Engineering Team, Geography Team, Geoscience Team, and Physics Team. (2021). The curious construct of active learning. *Psychological Science in the Public Interest*, *22*(1), 8-43.

Lopes, F. M., Coelho, D. M. V., Andrade, A. L. M., da Silva, A. M. B., de Carvalho, C. F., & De Micheli, D. (2022). Differences in Attitudes and Perceptions Between Educators With or Without Knowledge in Neuroscience. *Trends in Psychology*. https://doi.org/10.1007/s43076-022-00169-4

Lubbe, E. (2016). Innovative teaching in accounting subjects: Analysis of the flipped classroom. *International Journal of Social Sciences and Humanity Studies, 8*(2), 63-74.

Luckin, R., Clark, W., Garnett, F., Whitworth, A., Akass, J., Cook, J., Day, P., Ecclesfield, N., Hamilton, T., & Robertson, J. (2010). Learner-generated contexts: A framework to support the effective use of technology to support learning. In M.J.W. Lee & C. McLoughlin (Eds.), *Web 2.0-Based E-Learning: Applying Social Informatics for Tertiary Teaching* (pp. 70-84). IGIGlobal. https://doi.org/10.4018/978-1-60566-294-7

Luo, H., Yang, T., Xue, J., & Zuo, M. (2019). Impact of student agency on learning performance and learning experience in a flipped classroom. *British Journal of Educational Technology*, *50*(2), 819-831. https://doi.org/10.1111/bjet.12604

Maguire, M., & Delahunt, B. (2017). Doing a Thematic Analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Teaching and Learning in Higher Education, 8*(3), 3351-3364.

Maliski, S.L., & Litwin, M.S. (2007). Unsolicited written comments: An untapped data source. *Oncology Nursing Forum, 34*(1), 142-147. https://doi.org/10.1188/07.ONF.142-147

Maodzwa-Taruvinga, M., & Cross, M. (2012). Jonathan Jansen and the curriculum debate in South Africa: An essay review of Jansen's writings between 1999 and 2009. *Curriculum Inquiry, 42*(1), 126-152. https://doi.org/10.1111/j.1467-873X.2011.00573.x

Maree, K., & Pietersen, J. (2015). The quantitative research process. In K. Maree (Ed.), *First steps in research* (4th ed., pp. 144-153). Van Schaik Publishers.

Margarit, V. (2021). Transformative teaching and heutagogy. In S. Hase & L.M Blaschke (Eds.), *Unleashing the Power of Learner Agency.* EdTech Books. https://edtechbooks.org/up/transform

Mascolo, M.F. (2009). Beyond student-centred and teacher-centred pedagogy: Teaching and learning as guided participation. *Pedagogy and the Human Sciences, 1*(1), 3-27.

Mayer, R.E. (2002). Rote versus meaningful learning. *Theory Into Practice, 41*(4), 226-232. https://doi.org/10.1207/s15430421tip4104_4

MacCleod, F. (2004). Literacy identity and agency: Linking classrooms to communities. *Early Child Development and Care, 174*(3), 243-252. https://doi.org/10.1080/0300443032000153561

McEown, M.S., & Oga-Baldwin, W.L.Q. (2019). Self-determination for all language learners: New applications for formal language education. *System, 86*, 1-11. https://doi.org/10.1016/j.system.2019.102124

McWilliam, E. (2008). Unlearning how to teach. *Innovations in Education & Teaching International, 45*(3), 263-269. https://doi.org/10.1080/14703290802176147

McWilliam, E.L. (2005). Unlearning pedagogy. *Journal of Learning Design, 1*(1), 1-11.

Mehta, J. (2013). *The Allure of Order: High Hopes, Dashed Expectations, and the Troubled Quest to Remake American Schooling*. Oxford University Press.

Menon, K., & Castrillón, G. (2019). Reimagining curricula for the Fourth Industrial Revolution. *The independent journal of teaching and learning*, *14*(2), 6-19.

Merriam, S.B. (1998). *Qualitative research and case study applications in education*. Jossey-Bass Publishers.

Merriam, S.B. (2002). *Qualitative Research in practice: Examples for discussion and analysis.* Jossey-Bass.

Merriam, S.B. (2009). *Qualitative research: A guide to design and implementation* (3rd ed.). Jossey-Bass.

Merriam, S.B., & Grenier, R.S. (Eds.). (2019). *Qualitative research in practice: Examples for discussion and analysis* (2nd ed.). Jossey-Bass.

Mestry, R., & Ndhlovu, R. (2014). The implications of the National Norms and Standards for school funding policy on equity in South African public schools. *South African Journal of Education*, *34*(3), 1-11. https://doi.org/10.15700/ 201409161042

Meth, P. (2003). Entries and omissions: Using solicited diaries in geographical research. *Area*, *35*(2), 195-205. https://doi.org/10.1111/1475-4762.00263

Michel, N., Cater, J.J., & Varela, O. (2009). Active versus passive teaching styles: An empirical study of student learning outcomes. *Human Resource Development Quarterly*, *20*(4), 397-418. https://doi.org/10.1002/hrdq.20025

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications, Inc.

Mitsiou, D. (2019). The flipped classroom learning model as a means for acquiring the 21st century skills. *Journal of Contemporary Education, Theory & Research*, *3*(2), 16-23. https://doi.org/10.25656/01:19003

Modisaotsile, B.M. (2012). The failing standard of basic education in South Africa. *Policy brief*, *72*(1), 1-8.

Moffett, J. (2015). Twelve tips for "flipping" the classroom. *Medical Teacher*, *37*(4), 331-336. https://doi.org/10.3109/0142159X.2014.943710

Mok, H.N. (2014). Teaching tip: The flipped classroom. *Journal of Information Systems Education*, *25*(1), 7-11.

Moloi, K.C. (2010). How can schools build learning organisations in difficult education contexts? *South African Journal of Education*, *30*(4), 621-633.

Moodley, G. (2013). *Implementation of the curriculum and assessment policy statements: Challenges and implications for teaching and learning.* [Master's thesis, University of South Africa].

Morris, J., & Sah, P. (2016). Neuroscience and education: Mind the gap. *Australian Journal of Education*, *60*(2), 146-156. https://doi.org/10.1177/000494 4116652913

Morrison, C. (2012). Solicited diaries and the everyday geographies of heterosexual love and home: Reflections on methodological process and practice. *Area*, *44*(1), 68-75. https://doi.org/10.1111/j.1475-4762.2011.01044.x

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, *1*(2), 13-22. https://doi.org/10.1177 /160940690200100202

Msibi, T., & Mchunu, S. (2013). The knot of curriculum and teacher professionalism in post-apartheid South Africa. *Education as Change*, *17*(1), 19-35. https://doi.org/ 10.1080 /16823206.2013.773924

Muir, T. (2021). Self-determination theory and the flipped classroom: A case study of a senior secondary Mathematics class. *Mathematics Education Research Journal*, 33, 569-587.

Mukherji, P., & Albon, D. (2018). *Research methods in early childhood education: An introductory guide* (3rd ed.). Sage Publications Ltd.

Munir, M.T., Baroutian, S., Young, B.R., & Carter, S. (2018). Flipped classroom with cooperative learning as a cornerstone. *Education for Chemical Engineers*, *23*, 25-33. https://doi.org/10.1016/j.ece.2018.05.001

Nakabugo, M.G., & Siebörger, R. (2001). Curriculum reform and teaching in South Africa: Making a paradigm shift? *International Journal of Educational Development*, *21*(1), 53-60.

Narendran, R., Almeida, S., Coombes, R., Hardie, G., Quintana-Smark, E., Zaher, N., Wang, H., Chowdhury, A., & Stevenson, B. (2018). The role of self-determination theory in developing curriculum for flipped classroom learning: A case study of first-year Business undergraduate course. *Journal of University Teaching and Learning Practice*, *15*(5), 1-20.

Nawi, N., Jawawi, R., Matzin, R., Jaidin, J.H., Shahrill, M., & Mundia, L. (2015). To flip or not to flip: The challenges and benefits of using flipped classroom in geography lessons in Brunei Darussalam. *Review of European Studies*, *7*(12), 133-145. https://doi.org/10.5539/res.v7n12p133

Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description - the poor cousin of health research? *BMC medical research methodology*, *9*(1), 1-5.

Nelson, C., & Harper, V. (2006). A Pedagogy of difficulty: Preparing teachers to understand and integrate complexity in teaching and learning. *Teacher Education Quarterly*, *33*(2), 7-21.

Newby, P. (2014). *Research methods for education* (2nd ed.). Routledge.

Newmann, F.M., Marks, H.M., & Gamoran, A. (1996). Authentic pedagogy and student performance. *American Journal of Education*, *104*(4), 280-312. https://doi.org/10.1086/444136

Ng, B. (2018). The neuroscience of growth mindset and intrinsic motivation. *Brain Sciences*, *8*(2), 1-10. https://doi.org/10.3390/brainsci8020020

Ngulube, P., Mathipa, E.R., & Gumbo, M.T. (2015). Theoretical and conceptual frameworks in the social and management sciences. In E.R. Mathipa & M.T. Gumbo (Eds.), *Addressing Research Challenges: Making Headway in Developing Researchers* (pp. 43-66). Mosala-MASEDI Publishers & Booksellers

Nguyen, B., Yu, X., Japutra, A., & Chen, C.S. (2016). Reverse teaching: Exploring student perceptions of "flip teaching." *Active Learning in Higher Education*, *17*(1), 51-61. https://doi.org/10.1177/1469787415616727

Niemi, H. (2002). Active learning - a cultural change needed in teacher education and schools. *Teaching and Teacher Education*, *18*(7), 763-780. https://doi.org/10.1016/S0742-051X(02)00042-2

Niemiec, C.P., & Ryan, R.M. (2009). Autonomy, competence and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and research in education*, *7*(2), 133-144.

Noonan, B., & Duncan, C.R. (2005). Peer and self-assessment in high schools. *Practical Assessment, Research, and Evaluation*, *10*, 1-8. https://doi.org/10.7275/A166-VM41

Northway, R. (2002). Commentary. *Nurse Researcher*, *10*(2), 4-6.

Nowell, L.S. Norris, J.M., White, D.E., & Moules, N.J. (2017). Thematic Analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 1-13. https://doi.org/10.1177/1609406917733847

Nykiel-Herbert, B. (2004). Mis-constructing knowledge: The case of learner-centred pedagogy in South Africa. *Prospects*, *34*(3), 249-265.

O'Beirne, R. (2014). New pathways to knowledge and learning. In L.M. Blaschke, C. Kenyon & S. Hase (Eds.), *Experiences in self-determined learning* (pp. 77-83). https://uol.de/fileadmin/user_upload/coer/Experiences-in-self-determined-learning.pdf

O'Connor, H., Madge, C., Shaw, R., & Wellens, J. (2008). *Internet-based interviewing*. SAGE Publications, Ltd. https://dx.doi.org/10.4135/9780857020055

O'Connor, W.T. (2010, September 2). *What can neuroscience teach us about teaching?* [Paper presentation]. The International Conference on Engaging Pedagogy, Maynooth, Ireland. https://core.ac.uk/download/pdf/59355394.pdf

OECD. (2007). *Understanding the Brain: The Birth of a Learning Science*.

OECD. (2016). *PISA 2015 Results: Excellence and Equity in Education*. Vol. 1. OECD.

O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, *25*, 85-95. https://doi.org/10.1016/j.iheduc.2015.02.002

Ogbonnaya, U., & Awuah, F.K. (2019). Quintile ranking of schools in South Africa and learners' achievement in probability. *Statistics Education Research Journal*, *18*(1), 106-119.

Ojo, T., & Mathabathe, R. (2021). An Investigation into the Effectiveness of the Curriculum and Assessment Policy Statement (CAPS) in South African Schools. *International Journal on Integrating Technology in Education*, *10*(2), 23-38. https://doi.org/10.5121/ijite.2021.10203

Olakanmi, E.E. (2017). The effects of a flipped classroom model of instruction on students' performance and attitudes towards chemistry. *Journal of Science Education and Technology*, *26*, 127-137. https://doi.org/10.1007/s10956-016-9657-x

Olivant, K.F. (2015). "I am not a format": Teachers' experiences with fostering creativity in the era of accountability. *Journal of Research in Childhood Education*, *29*(1), 115-129. https://doi.org/10.1080/02568543.2014.978920

Ongesa, C.M. (2020). Critical thinking skill gap in the Kenyan educational curriculum: The 21st-century skills for the global citizen. *Journal of Interdisciplinary Studies in Education*, *9*(S1), 178-191.

Onurkan Aliusta, G., & Özer, B. (2016). Student-centred learning (SCL): Roles changed? *Teachers and Teaching*, *23*(4), 422-435. https://doi.org/10.1080/13540602.2016.1205014

Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *The Qualitative Report*, *13*(4), 695-705.

O'Sullivan, M. (2004). The reconceptualisation of learner-centred approaches: A Namibian case study. *International Journal of Educational Development*, *24*(6), 585-602. https://doi.org/10.1016/S0738-0593(03)00018-X

Owens, M.T., & Tanner, K.D. (2017). Teaching as Brain Changing: Exploring Connections between Neuroscience and Innovative Teaching. *CBE—Life Sciences Education*, *16*(2), 1-9. https://doi.org/10.1187/cbe.17-01-0005

Ozkal, N. (2014). Relationships between teachers creativity fostering behaviors and their self-efficacy beliefs. *Educational Research and Reviews*, *9*(18), 724-733. https://doi.org/10.5897/ERR2014.1816

Palmer, S.B., Wehmeyer, M.L., & Shogren, K.A. (2017). The development of self-determination during childhood. In M.L. Wehmeyer, K.A. Shogren, T.D. Little & S.J. Lopez (Eds.), *Development of Self-Determination Through the Life-Course* (pp. 71-88). Springer. https://doi.org/10.1007/978-94-024-1042-6_6

Patterson, B., McBride, C.R., & Gieger, J.L. (2018). Flipped active learning in your mathematics classroom without videos. *PRIMUS*, *28*(8), 742-753. https://doi.org/10.1080/10511970.2017.1423141

Paul Hamlyn Foundation & Innovation Unit. (2012). *Learning futures: A vision for engaging schools.* Paul Hamlyn Foundation

Paulus, T., Woods, M., Atkins, D.P., & Macklin, R. (2017). The discourse of QDAS: Reporting practices of ATLAS.ti and NVivo users with implications for best practices. *International Journal of Social Research Methodology*, *20*(1), 35-47. https://doi.org/10.1080/13645579.2015.1102454

Paniagua, A., & Istance, D. (2018). *Teachers as designers of learning environments.* OECD iLibrary. https://dx.doi.org/10.1787/9789264085374-en

Peko, A., & Varga, R. (2014). Active learning in classrooms. *Život i škola*, *31*(1), 59-75.

Pellegrino, J.W. (2017). Developmental cognitive neuroscience: Implications for teachers' pedagogical knowledge. In S. Guerriero (Ed.), *Pedagogical Knowledge and the Changing Nature of the Teaching Profession* (pp. 223-251). OECD Publishing. https://doi.org/10.1787/9789264270695-11-en

Petersen, C.I., & Gorman, K.S. (2014). Strategies to address common challenges when teaching in an active learning classroom. *New Directions for Teaching and Learning*, 63-70. https://doi.org/10.1002/tl.20086

Peterson, A. (2018a). The purpose of pedagogy. In A. Peterson, H. Dumont, M. Lafuente & N. Law (Eds.), *Understanding innovative pedagogies: Key themes to analyse new approaches to teaching and learning, OECD Education Working Papers No. 172*. (pp. 8-12). OECD Publishing. https://doi.org/10.1787/ 9f843a6e-en

Peterson, A. (2018b). Combinations of pedagogies, innovative and established. In A. Peterson, H. Dumont, M. Lafuente & N. Law (Eds.), *Understanding innovative pedagogies: Key themes to analyse new approaches to teaching and learning, OECD Education Working Papers No. 172*. (pp. 33-60) OECD Publishing. https://doi.org/10. 1787/ 9f843a6e-en

Plaisir, L.J. (2020). *Perceptions of middle school teachers' experiences with student-centred learning strategies* [Doctoral thesis, Walden University]. ScholarWorks. https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=10898&context= dissertations

Poduthase, H. (2015). Rigor in Qualitative research: Promoting quality in Social Science research. *Research Journal of Recent Sciences*, *4*, 25-28.

Popham, W.J. (2009). Assessment Literacy for Teachers: Faddish or Fundamental? *Theory Into Practice*, *48*(1), 4-11. https://doi.org/10.1080/00405840802577536

Posner, M., & Rothbart, M. (2005). Influencing brain networks: Implications for education. *Trends in Cognitive Sciences*, *9*(3), 99-103. https://doi.org/10.1016/ j.tics.2005.01.007

Pressick-Kilborn, K., Sainsbury, E., & Walker, R. (2005). Making sense of theoretical frameworks and methodological approaches: Exploring conceptual change and interest in learning from a sociocultural perspective. *The Australian Educational Researcher*, *32*(2), 25-47.

Pretorius, L. (2014). *The nature of teacher-learner classroom interaction*. [Masters dissertation, Stellenbosch University] SUNScholar Research Repository. http://scholar.sun.ac.za/handle/10019.1/95955

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*(3), 223-231. https://doi.org/10.1002/j.21689830.2004.tb00809.x

Probert, A. (2006). Searching for an appropriate research design: A personal journey. *Journal of Research Practice*, *2*(1), 1-12.

Pudi, T. (2006). From OBE to C2005 to RNCS: Are we still on track? *Africa Education Review*, *3*(1-2), 100-112. https://doi.org/10.1080/18146620608540445

Punch, K. F. (2014). *Introduction to Social Research: Qualitative and Quantitative approaches*. SAGE Publications Ltd.

Punch, K., & Oancea, A. (2014). *Introduction to research methods in education* (2nd ed.). SAGE Publications Ltd.

Qualters, D.M. (2012). Do students want to be active? *Journal of the Scholarship of Teaching and Learning*, *2*(1), 1-13.

Rahman, S.A., Tuckerman, L., Vorley, T., & Gherhes, C. (2021). Resilient research in the field: Insights and lessons from adapting Qualitative Research projects during the COVID-19 pandemic. *International Journal of Qualitative Methods*, *20*, 1-16. https://doi.org/10.1177/16094069211016106

Ramatlapana, K., & Makonye, J.P. (2013). From too much freedom to too much restriction: The case of teacher autonomy from National Curriculum Statement (NCS) to Curriculum and Assessment Statement (CAPS). *Africa Education Review*, *9*(1), 7-25. https://doi.org/10.1080/18146627.2012.753185

Ramoroka, T., & Tsheola, J. (2016). Blended pedagogies for modern development in South Africa: Challenges and prospects for success. *Bangladesh e-Journal of Sociology*, *13*(1), 56-67.

Randi, J. (2017). Teaching and learning hand in hand: Adaptive teaching and self-regulated learning. *Teachers College Record*, *119*, 1-34.

Ravitch, S.M., & Riggan, M. (2012). *Reason & rigor: How conceptual frameworks guide research*. SAGE Publications Inc.

Rawnsley, M.M. (1998). Ontology, epistemology and methodology: A clarification. *Nursing Science Quaterly*, *11*(1), 2-4.

Reeve, J. (2012). A self-determination theory perspective on student engagement. In S.L. Christenson, A.L. Reschly & C. Wylie (Eds.), *Handbook of Research on Student Engagement* (pp. 149-172). Springer. https://doi.org/10.1007/978-1-4614-2018-7

Reeve, J., & Cheon, S.H. (2021). Autonomy-supportive teaching: Its malleability, benefits, and potential to improve educational practice. *Educational Psychologist*, *56*(1), 54-77. https://doi.org/10.1080/00461520.2020.1862657

Reeve, J., & Lee, W. (2019). A neuroscientific perspective on basic psychological needs. Journal of Personality, 87(1), 102-114. https://doi.org/10.1111/jopy.12390

Reeve, J., & Tseng, C. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, *36*(4), 257-267. https://doi.org/10.1016/j.cedpsych.2011.05.002

Reeves, J. (2018). Teacher identity. In J. I. Liontas (Ed.), *The TESOL Encyclopedia of English Language Teaching* (pp.1-9)*.* John Wiley & Sons, Inc. https://doi.org/10.1002/9781118784235.eelt0268

Reeves, T.C. (2006). How do you know they are learning? The importance of alignment in higher education. *International Journal of Learning Technology*, *2*(4), 294-309. https://doi.org/10.1504/IJLT.2006.011336

Reinders, H. (2010). Towards a classroom pedagogy for learner autonomy: A framework of independent language learning skills. *Australian Journal of Teacher Education*, *35*(5), 1-17.

Repkin, V.V. (2003). Developmental teaching and learning activity. *Journal of Russian & East European Psychology*, *41*(5), 10-33. https://doi.org/10.2753/RPO1061-0405410510

Révai, N., & Guerriero, S. (2017). Knowledge dynamics in the teaching profession. In S. Guerriero (Ed.), *Pedagogical Knowledge and the Changing Nature of the Teaching Profession* (pp. 37-71). OECD Publishing. https://doi.org/10.1787/9789264270695-11-en

Reyna, J. (2015). Active learning and the flipped classroom. *Training & Development*, *42*, 30-31.

Reyneke, F., & Fletcher, L. (2014, July 13-18). The impact of an inverted traditional teaching model on first level statistics students. In K. Makar, B. de Sousa, & R. Gould (Eds.), *Sustainability in statistics education: Proceedings of the Ninth International Conference on Teaching Statistics*. Voorburg, The Netherlands: International Statistical Institute. https://iase-web.org/icots/9/proceedings/pdfs/ICOTS9_C217_FLETCHER.pdf

Rhodes, T., & Bernays, S. (2014). Principles of research ethics in practice. In M.A. Durand & T. Chantler (Eds.), *Principles of social research* (pp. 137-146). Open University Press.

Ricci, L., Lanfranchi, J-B., Lemetayer, F., Rotonda, C., Guillemin, F., Coste, J., & Spitz, E. (2019). Qualitative methods used to generate questionnaire items: A systematic review. *Qualitative Health Research*, *29*(1), 149-156. https://doi.org/10.1177/1049732318783186

Richards, L. (2021). *Handling qualitative data: A practical guide* (4th ed.). SAGE Publications Ltd.

Rinkevich, J.L. (2011). Creative teaching: Why it matters and where to begin. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *84*(5), 219-223. https://doi.org/10.1080/00098655.2011.575416

Ritchie, J., Lewis, J., McNaughton Nicholls, C., & Ormston, R. (2014). *Qualitative research practice: A guide for social science students and researchers* (2nd ed.). SAGE Publications Ltd.

Robb, B.E. (2016). *A paradigm shift in classroom learning practices to propose methods aligned with a neuroeducation conceptual framework.* [Doctoral thesis, University of Portland]. Pilot Scholars. https://pilotscholars.up.edu/cgi/viewcontent.cgi?article=1014&context=etd

Robinson, P. (1981). *Perspectives on the sociology of education: An introduction.* Routledge & Kegan Paul Ltd.

Roehl, A., Reddy, S.L., & Shannon, G.J. (2013). The flipped classroom: An opportunity to engage millennial students through active learning. *Journal of Family and Consumer Sciences*, *105*(2), 44-49.

Rogers, C. R. (1969). *Freedom to learn: A view of what education might become.* Merrill.

Rocco, T.S., & Plakhotnik, M.S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: Terms, functions, and distinctions. *Human Resource Development Review*, *8*(1), 120-130. https://doi.org/10.1177/1534484309332617

Rotellar, C., & Cain, J. (2016). Research, Perspectives, and recommendations on implementing the flipped classroom. *American Journal of Pharmaceutical Education*, *80*(2), 1-9. https://doi.org/10.5688/ajpe80234

Rueda, C. (2020). Neuroeducation: Teaching with the brain. *Journal of Neuroeducation*, *1*(1), 108-113. https://doi.org/10.1344/joned.v1i1.31657

Ryan, R.M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, *63*(3), 397-427. https://doi.org/10.1111/j.1467-6494.1995.tb00501.x

Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54-67. https://doi.org/10.1006/ceps.1999.1020

Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future of self-determination theory. In *Advances in motivation science* (Vol. 6, pp. 111-156). Elsevier.

Ryan, R.M., & Deci, E.L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *61*, 1-31. https://doi.org/10.1016/j.cedpsych.2020.101860

Ryan, R.M., & Weinstein, N. (2009). Undermining quality teaching and learning: A self-determination theory perspective on high-stakes testing. *Theory and Research in Education*, *7*(2), 224-233. https://doi.org/10.1177/1477878509104327

Saavedra, A.R., & Opfer, V.D. (2012). Learning 21st-Century skills requires 21st-Century teaching. *Phi Delta Kappan*, *94*(2), 8-13. https://doi.org/10.1177/003172171209400203

Sadler, D.R. (1998). Formative Assessment: Revisiting the territory. *Assessment in Education: Principles, Policy & Practice*, *5*(1), 77-84. https://doi.org/10.1080/0969595980050104

Sandakova, L.B., & Tolstobrova, L.I. (2019). Proliferation of neuroscientific knowledge in pedagogy and education. *Advances in Social Science, Education and Humanities Research*, *333*, 544-548. https://doi.org/10.2991/hssnpp-19.2019.103

Sandelowski, M. (1995). Qualitative analysis: What it is and how to begin. *Research in Nursing & Health*, *18*(4), 371-375. https://doi.org/10.1002/nur.4770180411

Sandelowski, M. (1998). Writing a good read: Strategies for re-presenting qualitative data. *Research in Nursing and Health*, *21*(4), 375-382. https://doi.org/10.1002/(SICI)1098-240X(199808)21:4<375::AID-NUR9>3.0.CO;2-C

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health*, *23*(4), 334-340. https://doi.org/10.1002/1098-240X(200008) 23:4<334::AID-NUR9>3.0.CO;2-G

Sandelowski, M. (2010). What's in a name? Qualitative Description revisited. *Research in Nursing and Health*, *33*(1), 77-84. https://doi.org/10.1002/nur.20362

Sarantakos, S. (2013). *Social Research* (4th ed.). Palgrave Macmillan.

Savin-Baden, M., & Howell Major, C. (2013). *Qualitative Research: The essential guide to theory and practice*. Routledge.

Schuh, K.L. (2004). Learner-centred principles in teacher-centred practices? *Teaching and Teacher Education*, *20*(8), 833-846. https://doi.org/10.1016/j.tate.2004. 09.008

Schwartz, M. S., Hinesley, V., Chang, Z., & Dubinsky, J. M. (2019). Neuroscience knowledge enriches pedagogical choices. *Teaching and Teacher Education*, *83*, 87-98. https://doi.org/10.1016/j.tate.2019.04.002

Schweisfurth, M. (2011). Learner-centred education in developing country contexts: From solution to problem? *International Journal of Educational Development*, *31*(5), 425-432. https://doi.org/10.1016/j.ijedudev.2011.03.005

Seale, L. (2012, July 2). *New curriculum, same problems*. The Star. https://www.iol.co.za/the-star/new-curriculum-same-problems-1331777

Sergis, S., Sampson, D.G., & Pelliccione, L. (2018). Investigating the impact of flipped classroom on students' learning experiences: A self-determination theory approach. *Computers in Human Behavior*, *78*, 368-378. https://doi.org/10.10 16/j.chb.2017.08.011

Setlhako, M. A. (2021). Techniques for self-determined learning in a heterogenous 'classroom'. In S. Hase & L.M Blaschke (Eds.), *Unleashing the Power of Learner Agency*. EdTech Books. https://edtechbooks.org/up/hetero

Shah, S.R., & Al-Bargi, A. (2013). Research paradigms: Researchers' worldviews, theoretical frameworks and study designs. *Arab World English Journal 4*(4), 252-264.

Sheble, L., Thomson, L., & Wildemuth, B.M. (2017). Research diaries. In B.M. Wildemuth (Ed.), *Applications of Social Research Methods to Questions in Information and Library Science* (2nd ed., pp. 228-238). Abc-Clio

Sheldon, K.M., Abad, N., & Omoile, J. (2009). Testing self-determination theory via Nigerian and Indian adolescents. *International Journal of Behavioral Development, 33*(5), 451-459. https://doi.org/10.1177/0165025409340095

Shepard, L. (2005). Linking formative assessment to scaffolding. *Educational Leadership, 63*(3), 66-71.

Smit, B. (2002). Atlas.ti for qualitative data analysis. *Perspectives in Education, 20*(3), 65-76.

Smith, J.P. (2015). *The efficacy of a flipped learning classroom* [Doctoral dissertation, McKendree University]. https://kenanaonline.com/files/0102/102661/THE%20EFFICACY%20OF%20A%20FLIPPED%20LEARNING%20CLASSROOM.pdf

Smith, T., & Lowrie, M. (2002). Pedagogy as conversation. *Australian Primary Mathematics Classroom, 7*(1), 18-22.

Snow, R.E., Corno, L. & Jackson, D. (1996) Individual differences in affective and conative functions. In D.C. Berliner & R.C. Calfee (Eds.), *Handbook of Educational Psychology* (pp. 243-310). Macmillan.

Snowden, M. (2015). Use of diaries in research. *Nursing Standard, 29*(44), 36-41. https://doi.org/10.7748/ns.29.44.36.e9251

Sondergeld, T. A., Green, B., Bell, C. A., & Leusner, D. M. (2010). Understanding how teachers engage in formative assessment. *Teaching & Learning, 24*(2), 72-86.

Soratto, J., de Pires, D.E.P., & Friese, S. (2020). Thematic content analysis using ATLAS.ti software: Potentialities for research in health. *Revista Brasileira de Enfermagem, 73*(3), 1-5. https://doi.org/10.1590/0034-7167-2019-0250

South Africa has one of the world's worst education systems. (2017, January 7). The Economist.https://www.economist.com/middle-east-and-africa/2017/01/07/south-africa-has-one-of-the-worlds-worst-education-systems

Spaull, N. (2013a). *South Africa's education crisis: The quality of education in South Africa 1994-2011*. Centre for Development and Enterprise.

Spaull, N. (2013b). Poverty & privilege: Primary school inequality in South Africa. *International Journal of Educational Development*, *33*(5), 436447. https://doi.org/10.1016/j.ijedudev.2012.09.009

Spear, L.P. (2013). Adolescent Neurodevelopment. *Journal of Adolescent Health*, *52*(2), S7-S13. https://doi.org/10.1016/j.jadohealth.2012.05.006

Spencer, J.A., & Jordan, R.K. (1999). Learner centred approaches in medical education. *British Medical Journal*, *318*(7193), 1280-1283. https://doi.org/10.1136/bmj. 318.7193.1280

Spies, B. (2011). Renewal of education in South Africa: the problem of implementation. *Musicus*, *39*(1), 44-54.

Spreen, C. A., & Vally, S. (2010). Outcomes-based education and its (dis) contents: Learner-centred pedagogy and the education crisis in South Africa. *Southern African Review of Education with Education with Production*, *16*(1), 39-58.

Srivastava, K. (2014). Role of flipped classroom in education. *Indian Journal of Research*, *3*(4), 81-83.

Steen-Utheim, A.T., & Foldnes, N. (2018). A qualitative investigation of student engagement in a flipped classroom. *Teaching in Higher Education*, *23*(3), 307-324. https://doi.org/10.1080/13562517.2017.1379481

Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision*, *39*(7), 551-556. https://doi.org/10.1108/EUM000 0000005801

Stern, E. (2005). Editorial: Pedagogy meets neuroscience. *Science, 310*(5749), 745.

Stoszkowski, J., & McCarthy, L. (2018). Students' perceptions of the learner attributes required for (and resulting from) heutagogical learning. *Journal of Learning Development in Higher Education*, *14*, 1-12.

Strayer, J.F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research*, *15*, 171-193. https://doi.org/10.1007/s10984-012-9108-4

Stroet, K., Opdenakker, M., & Minnaert, A. (2015). What motivates early adolescents for school? A longitudinal analysis of associations between observed teaching and motivation. *Contemporary Educational Psychology*, *42*, 129-140. https://doi.org/10.1016/j.cedpsych.2015.06.002

Sumardi, L., Rohman, A., & Wahyudiati, D. (2020). Does the teaching and learning process in primary schools correspond to the characteristics of the 21st century learning? *International Journal of Instruction*, *13*(3), 357-370. https://doi.org/10.29333/iji.2020.13325a

Suzuki, L.A., Ahluwalia, M.K., Arora, A.K., & Mattis, J.S. (2007). The pond you fish in determines the fish you catch: Exploring strategies for qualitative data collection. *The Counselling Psychologist, 35*(2), 295-327. https://doi.org/10.11 77/0011000006290983

Tabulawa, R. (1997). Pedagogical classroom practice and the social context: The case of Botswana. *International Journal of Educational Development, 17*(2), 189-204. https://doi.org/10.1016/S0738-0593(96)00049-1

Tawfik, A.A., & Lilly, C. (2015). Using a flipped classroom approach to support problem-based learning. *Technology, Knowledge and Learning*, *20*(3), 299-315. https://doi.org/10.1007/s10758-015-9262-8

Taylor, N. (2008, February 28-29). *What's wrong with South African schools?* [Paper presentation]. What's Working in School Development Conference, JET Education Services.

Taylor, N., & Shindler, J. (2016). *Education Sector Landscape Mapping - South Africa*. JET Education Services.

Taylor, T. (2014). Changing pedagogy for modern learners – lessons from an educator's journey of self-Reflection. *Journal of Educational Technology & Society, 17*(1), 79-88.

Thayer-Bacon, B.J. (2013). Epistemology and education. In B. Irby, G.H. Brown, R. Lara-Aiecio & D.S.A. Jackson (Eds.), *Handbook of educational theories for theoretical frameworks* (pp.17-27). Information Age Publishing Inc.

The Theory. (2020). https://selfdeterminationtheory.org/the-theory/

Thorne, S. (2000). Data analysis in qualitative research. *Evidence-Based Nursing*, *3*(3), 68-70. https://doi.org/10.1136/ebn.3.3.68

Thorne, S., Kirkham, S.R., & MacDonald-Emes, J. (1997). Interpretive description: A noncategorical qualitative alternative for developing nursing knowledge. *Research in nursing & Health, 20*(2), 169-177. https://doi.org/10.1002/ (SICI) 1098-240X(199704)20:2<169::AID-NUR9>3.0.CO;2-I

Tight, M. (2021). Twenty-first century skills: Meaning, usage and value. *European Journal of Higher Education*, *11*(2): 160-174. https://doi.org/10.1080/ 21568235.2020.1835517

Tokuhama-Espinosa, T., König, J., Ansari, D., & Leask, M. (2017). Developmental cognitive neuroscience: Implications for teachers' pedagogical knowledge. In S. Guerriero (Ed.), *Pedagogical Knowledge and the Changing Nature of the Teaching Profession* (pp. 195-222). OECD Publishing. https://doi.org/10.1787/ 9789264270695-11-en

Tolmie, A. (2015). Neuroscience of Education. *International Encyclopedia of the Social & Behavioral Sciences*, *16*(2), 728-735. Elsevier. https://doi.org/10.1016/B978-0-08-097086-8.56033-4

Tran, T.B.L., Ho, T.N., Mackenzie, S.V., & Le, L.K. (2017). Developing assessment criteria of a lesson for creativity to promote teaching for creativity. *Thinking Skills and Creativity*, *25*, 10-26. https://doi.org/10.1016/j.tsc.2017.05.006

Tümen Akyildiz, S. (2019). Do 21st century teachers know about Heutagogy or do they still adhere to traditional Pedagogy and Andragogy? *International Journal of Progressive Education*, *15*(6), 151-169. https://doi.org/10.29329/ijpe. 2019.215.10

Turale, S. (2020). A brief introduction to Qualitative Description: A research design worth using. *Pacific Rim International Journal of Nursing Research*, *24*(3), 289-291.

Turner, K. (2019). One-to-one learning and self-determination theory. *International Journal of Instruction*, *12*(2), 1-16. https://doi.org/10.29333/iji.2019.1221a

Tzuo, P. W. (2007). The tension between teacher control and children's freedom in a child-centred classroom: Resolving the practical dilemma through a closer look at the related theories. *Early Childhood Education Journal*, *35*(1), 33-39. https://doi.org/10.1007/s10643-007-0166-7

Van der Berg, S., Spaull, N., Wills, G., Gustafsson, M., & Kotzé, J. 2016. *Identifying Binding Constraints in Education: Synthesis report for the Programme to support Pro-poor Policy development*. Research on Socio-Economic Policy.

Vansteenkiste, M., Niemiec, C.P., & Soenens, B. (2010). The development of the five mini-theories of self-determination theory: An historical overview, emerging trends, and future directions. In T.C. Urdan & S.A. Karabenick (Eds.), *The Decade Ahead: Applications and Contexts of Motivation and Achievement* (pp. 105-165). Emerald Group Publishing. https://doi.org/10.1108/S0749-7423 (2010)000016A007

Van Wyk, M.M. (2018). Economics student teachers' views on the usefulness of a flipped classroom pedagogical approach for an open distance eLearning environment. *The International Journal of Information and Learning Technology*, *35*(4), 255-265. https://doi.org/10.1108/IJILT-07-2017-0068

Van Wyk, M. M. (2023). Pedagogical dimensions as drivers in the functionality of the flipped pedagogy during the COVID-19 pandemic. *Ubiquitous Learning: An International Journal*, *16*(2), 17-34. https://doi.org/10.18848/1835-9795/CGP /v16i02/17-34

Van den Broeck, A., Ferris, D.L., Chang, C., & Rosen, C.C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management*, *42*(5), 1195-1229. https://doi.org/10.1177/0149206316632058

van der Heijden, H.R.M.A., Geldens, J.J.M., Beijaard, D., & Popeijus, H.L. (2015). Characteristics of teachers as change agents. *Teachers and Teaching*, *21*(6), 681-699. https://doi.org/10.1080/13540602.2015.1044328

Van Lier, L. (2008). Agency in the classroom. *Sociocultural Theory and the Teaching of Second Languages*, *163*,186.

Väyrynen, S. (2003). Observations from South African classrooms: Some inclusive strategies. *National Institute for Higher Education Northern Cape in Co-operation with the South-African-Finnish Co-operation Programme in the Education Sector (SCOPE)[online]* Available at: http://citeseerx.ist.psu.edu/ viewdoc/download?doi=10.1.1.364.4172 &rep=rep1&type=pdf

Vinayan, G., & Harikirishanan, D. (2021). Empowering Heutagogy for 21st Century Learning. *Systematic Literature Review and Meta-Analysis Journal*, *2*(2), 47-52. https://doi.org/10.54480/slrm.v2i2.17

Vorhauser-Smith, S. (2011). *The neuroscience of learning and development: PageUp People White Paper.*

Vygotsky, L.S. (1997). *Educational psychology*. Boca Raton (Translated by R. Silverman.)

Wallace, J., & Louden, W. (1997). Preconceptions and theoretical frameworks. *Journal of Research in Science Teaching*, *34*(4), 319-322.

Walliman, N. (2011). *Research methods: The basics*. Routledge.

Wang, C.K.J., Liu, W.C., Kee, Y.H., & Chian, L.K. (2019). Competence, autonomy, and relatedness in the classroom: Understanding students' motivational processes using the self-determination theory. *Heliyon*, *5*(7), 1-6. https://doi.org/10.1016/j. heliyon.2019.e01983

Wang, F.H. (2017). An exploration of online behaviour engagement and achievement in flipped classroom supported by learning management system. *Computers & Education*, *114*, 79-91. https://doi.org/10.1016/j.compedu.2017.06.012

Ward, H. (2007). *Using their brains in science, ideas for children aged 5 to 14*. Paul Chapman Publishing.

Weeks, F.H. (2012). The quest for a culture of learning: A South African schools perspective. *South African Journal of Education*, *32*(1), 1-14.

Wehmeyer, M.L., Palmer, S.B., Agran, M., Mithaug, D.E., & Martin, J.E. (2000). Promoting causal agency: The self-determined learning model of instruction. *Exceptional Children*, *66*(4), 439-453.

Wentz, E.A. (2013). *How to design, write, and present a successful dissertation proposal* (1st ed.). SAGE Publications, Inc.

Westbrook, J., Durrani, N., Brown, R., Orr, D., Pryor, J., Boddy, J., & Salvi, F. (2013). *Pedagogy, curriculum, teaching practices and teacher education in developing countries*. Department for International Development.

Williams, P. (2017). Student agency for powerful learning. *Knowledge Quest*, *45*(4), 10-15.

Woods. D.R. (1994). *Problem-based learning: How to gain the most from PBL*. W.L. Griffen Printing

Woolfolk, A. (2016). *Educational Psychology, Global Edition* (13th ed.). Pearson International.

World Bank. (2016). World Development Report 2016: Digital Dividends. World Bank.

World Bank (2017). *World Development Report 2018: Learning to realize education's promise*. The World Bank. https://doi.org/10.1596/978-1-4648-1096-1

Xu, W., & Zammit, K. (2020). Applying Thematic Analysis to education: A hybrid approach to interpreting data in practitioner research. *International Journal of Qualitative Methods*, *19*, 1-9. https://doi.org/10.1177/1609406920918810

Yamada, S. (2016). Post 2015 and SDG 4: Shifting focus to learners' skills and knowledge. *NORRAG News*, *54,* 30-32. http://www.norrag.org/fileadmin/ Full%20Versions/NN54.pdf

Yang, J. (2014, May 6-7). *Implementing the flipped classroom in elementary and secondary schools in China*. [Paper presentation]. International Conference on Education, Language, Art and Intercultural Communication, Zhengzhou, China. https://doi.org/10.2991/icelaic-14.2014.34

Yardley, L., Bradbury, K., & Morrison, L. (2021). Using qualitative research for intervention development and evaluation. In P.M. Camic (Ed.), *Qualitative Research in Psychology: Expanding Perspectives in Methodology and Design* (2nd ed., pp. 263-282). American Psychological Association. https://doi.org/10.1037/0000252-013

Yates, L. (2009). From curriculum to pedagogy and back again: Knowledge, the person and the changing world. *Pedagogy, Culture & Society*, *17*(1), 17-28. https://doi.org/10.1080/14681360902742837

Yin, R.K. (2016). *Qualitative research from start to finish* (2nd ed.). The Guilford Press.

Young, M. (2013). Overcoming the crisis in curriculum theory: A knowledge-based approach. *Journal of Curriculum Studies*, *45*(2), 101-118. https://doi.org/10. 1080/00220272.2013.764505

Yu, S., & Levesque-Bristol, C. (2020). A cross-classified path analysis of the self-determination theory model on the situational, individual and classroom levels in college education. *Contemporary Educational Psychology*, *61*, 1-14. https://doi.org /10.1016/j.cedpsych.2020.101857

Youcef, L. (2021). Is Heutagogy inevitable? Insights into conceptions, objectives, and practices. *Journal El-Baheth in Human and Social Sciences*, *12*(2), 500-509.

Yusuf, B., & Taiye, M.A. (2021). A flipped learning environment: a disruptive approach for traditional classrooms? *International Journal of Education, Psychology and Counseling*, *6*(42), 83-93. https://doi.org/10.35631/IJEPC.642008

Zadina, J.N. (2015). The emerging role of educational neuroscience in education reform. *Psicología Educativa*, *21*(2), 71-77. https://doi.org/10.1016/j. pse.2015.08.005

Zainuddin, Z., & Halili, S.H. (2016). Flipped classroom research and trends from different fields of study. *The International Review of Research in Open and Distributed Learning*, *17*(3), 313-340. https://doi.org/10.19173/irrodl. v17i3.2274

Zepke, N., Leach, L., & Butler, P. (2014). Student engagement: Students' and teachers' perceptions. *Higher Education Research & Development*, *33*(2), 386-398. https://doi.org/10.1080/07294360.2013.832160

Zilka, A., Grinshtain, Y., & Bogler, R. (2022). Fixed or growth: Teacher perceptions of factors that shape mindset. *Professional Development in Education*, *48*(1), 149-165. https://doi.org/10.1080/19415257.2019.1689524

ADDENDUM A: ADVERTISEMENT

ADDENDUM B: CONSENT TO PARTICIPATE (TEACHER)

UNIVERSITY OF SOUTH AFRICA

CONSENT TO PARTICIPATE IN RESEARCH

_____

Date: 15 August – 12 October

Title: *An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centred classroom*

DEAR PROSPECTIVE PARTICIPANT

My name is Lizélle Pretorius and I am doing my PhD research under the supervision of Prof. Michael van Wyk, a H.O.D. in the Department of Curriculum & Instructional Studies (College of Education) at the University of South Africa. We are inviting you to participate in the study as mentioned above.

WHAT IS THE PURPOSE OF THE STUDY?

This study is expected to collect important information that could contribute to a better understanding on how to combat learner passivity in high school classrooms. As the altered flipped pedagogy is a more learner-centred approach, it also has the potential to increase learner engagement, empower learners to take ownership of their learning and the development of important 21st century skills.

WHY AM I BEING INVITED TO PARTICIPATE?

You are invited because you are an in-service teacher who is currently teaching at a public/independent high/combined school in the Western Cape province of South Africa. You have no prior experience on implementing the altered flipped class pedagogy in your classroom. You would also like to experiment with providing your learners with more active and personalized learning experiences, the opportunity to take ownership of their learning and to help them develop important 21st century skills.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves a two-hour online training session, the implementation of the altered flipped class pedagogy in a minimum of three lessons and the completion of a survey-questionnaire. The survey questionnaire will take a maximum of 15 minutes to complete. You will also be given the option to choose between an online interview or to keep a reflective journal of your experience. The online interview consists of nine main questions that is formulated around your experience when implementing the altered

flipped class pedagogy in your class. The interview will take approximately 30 minutes to complete. Similarly, the reflective journal consists of three written entries based on your experiences when implementing the altered flipped class pedagogy. This should take approximately 15 minutes per entry. You will not be asked to participate in the interview and reflective journal activity.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will have access to this information sheet should you need to consult it. You are free to withdraw at any time and without giving a reason.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

You as teacher participant will receive free training on how to easily implement a relevant teaching method that will enable you to teach in a more learner-centred way. Your participation in this study is valuable as it can provide significant input to better understand the effectiveness of the altered flipped class pedagogy as intervention to improve learner engagement and combat passive learning.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

The research does not pose any threats, risks or side-effects to you the participant.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Anonymity and confidentiality will be maintained; however, the principal of the school that you teach at will have to be contacted to obtain informed consent once you have completed the training and wish to experiment with the intervention in your own classes. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and the supervisor of the researcher, will know about your involvement in this research with the exception that you disclose this information to an external party. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings. No recordings will be made of the online training sessions; however, recordings will be made if you decide to participate in the online interview. These recordings will be kept confidential on the researcher's personal password protected computer.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

The data will be stored on the personal computer of the researcher that is password protected. The records will be kept for five years for audit purposes whereafter the electronic data will be permanently deleted. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

You will not be reimbursed or receive any incentives for your participation in the survey.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the College of Education at UNISA and the research directorate of the WCED. A copy of the approval letters can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

You will be informed once the study has been completed and published online. The researcher will also invite you to a short online session (2022) to give feedback on the findings of the study.

Should you require any further information or want to contact the researcher about any aspect of this study, you are welcome to do so by sending an email to Lizélle Pretorius at lizelle.phd@gmail.com or 58561080@mylife.unisa.ac.za.

Should you have concerns about the way in which the research has been conducted, you may contact Prof. Michael van Wyk at 012 429 4775 or vwykmm@unisa.ac.za

Thank you for taking time to read this consent letter and for your willingness to participate in this study.

Lizélle Pretorius (Principal Researcher & PhD candidate)

ADDENDUM C: WCED RESEARCH APPROVAL LETTER

Western Cape Government
Education

Directorate: Research

meshack.kanzi@westerncape.gov.za
Tel: +27 021 467 2350
Fax: 086 590 2282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20210810-4912
ENQUIRIES: Mr M Kanzi

Ms Lizélle Pretorius
16 Myrtle Street
Morningside
Somerset West
7130

Dear Ms Lizélle Pretorius,

RESEARCH PROPOSAL: AN ALTERED FLIPPED CLASS PEDAGOGY AS INTERVENTION STRATEGY TO ADDRESS PASSIVE LEARNING IN A TEACHER-CENTRED CLASSROOM.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **12 August 2021 till 30 September 2021.**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Mr M Kanzi at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. The approval of your research request does not imply a promise of any data from the WCED. Should you require data, you will have to request it from the participating schools where it will be possible to secure parental consent.
11. Please note that POPIA prohibits the sharing of personal information without parental consent.
12. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
13. The Department receives a copy of the completed report/dissertation/thesis addressed to:
    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.

Meshack Kanzi
Directorate: Research
DATE: 11 August 2021

1 North Wharf Square, 2 Lower Loop Street,
Foreshore, Cape Town 8001
tel: +27 21 467 2531

Private Bag X 9114, Cape Town, 8000
Safe Schools: 0800 45 46 47
wcedonline.westerncape.gov.za

355

ADDENDUM D: ONLINE REGISTRATION FORM

ADDENDUM E: FORMAL INVITATION TO SCHOOLS

ADDENDUM F: POST SESSION FEEDBACK

ADDENDUM G: CONSENT TO PARTICIPATE (PRINCIPAL)

UNISA | university of south africa

UNIVERSITY OF SOUTH AFRICA

PERMISSION TO CONDUCT RESEARCH: THE SCHOOL PRINCIPAL

_____

Request for permission to conduct research at ██████████ **High School**

Title of the research:

An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centred classroom

Date: 13 August – 12 October

Name: Lizélle Pretorius

Department: UNISA (College of Education)

Contact details: ████████████████████

_____

Dear Mr ████████

My name is Lizélle Pretorius and I am doing my PhD research under the supervision of Prof. Michael van Wyk, H.O.D. at the Department of Curriculum & Instructional Studies (University of South Africa). We are inviting you to participate in a study as mentioned above.

This study aims to explore teachers' experience when implementing the altered flipped classroom pedagogy as an intervention strategy to address passive learning in teacher-centred classrooms. This pedagogy is in line with modern day neuroeducation research on how humans naturally learn, flipped learning research and the theory of self-determined learning.

Your school has been selected because you are a high school/combined school in the Western Cape province of South Africa. After the initial invitation to participate was sent, some of the teachers teaching at your school registered for the online training session. One underwent a two-hour online session on how to implement an altered flipped classroom pedagogy in his classroom. He was sent a post-evaluation form with the option to continue or withdraw from the research. He decided to continue with the process and through his participation, will contribute to academic research on a high level.

In short, he will implement the altered flipped pedagogy in his class (minimum three lessons). Upon completion, he will be asked to complete an online survey-questionnaire that mainly focus on his experience when implementing the altered flipped classroom pedagogy. Two of the other research activities that he may participate in includes an online interview or research diary, that is, once again, based on his experience.

This study is expected to collect important information that could contribute to a better understanding on how to address what is globally known as the 'passive learning phenomenon'. As the altered flipped pedagogy is a more learner-centred approach it has the potential to increase learner engagement, empower learners to take ownership of their learning and encourage the development of important 21st century skills. The study is timeous with regards to the unique challenges we are currently faced with in the education system.

The research does not pose any threats, risks or side-effects to the teacher participating in the study. Teachers will receive no reimbursement or any incentives for participation in the research.

The researcher will inform the participant of the study once it has been completed and published online. The researcher will also invite the participant to a short online session (2022) to give feedback on the findings of the study.

Please note that all the data that will be obtained, is confidential. The school and the teacher's names will be kept anonymous and therefore not be published in the findings of the study.

Should you require any further information or want to contact the researcher about any aspect of this study, you are welcome to do so by sending an email to Lizélle Pretorius at lizelle.phd@gmail.com or 58561080@mylife.unisa.ac.za.

Should you have concerns about the way in which the research has been conducted, you may contact Prof. Michael van Wyk at 012 429 4775 or send an email to vwykmm@unisa.ac.za

Thank you for your time.

Yours sincerely

_____

Lizélle Pretorius

Researcher-teacher

ADDENDUM H: REQUEST TO CONDUCT RESEARCH (PRINCIPAL)

Attention: The principal Inbox ×

Lizelle Pretorius <lizelle.phd@gmail.com> Mon, Sep 20, 2021, 6:50 AM

to ▮▮▮▮▮

Good day ▮▮▮▮

I sent an invitation to your school a short while ago regarding my PhD research study. One of your teachers (▮▮▮▮▮▮▮) has attended the online training and indicated that she would like to continue with the research process.

As head of the school I herewith ask for your consent to continue with the research at ▮▮▮ High school. I have included the official UNISA document that gives a synopsis of the process/procedures to follow.

You are welcome to contact me should you have any questions.

Kind regards,
Lizelle

One attachment · Scanned by Gmail ⓘ

Principal consent...

361

Teacher reflection journal (outline)

**Please use the following guidelines to reflect on your experience when introducing the *Altered flipped intervention strategy* in your class

Journal entry 1:

Date:

1. Brief outline of the grade, subject, pre-class and in-class activities

2. General overview of experience when implementing the *Altered Flipped Class*

3. What do I need to remember/ consider/ change/ improve for my next lesson?

Journal entry 2:

Date:

1. Brief outline of the grade, subject, pre-class and in class activities

2. General overview of experience when implementing the *Altered Flipped Class*

3. What do I need to remember/ consider/ change/ improve for my next lesson?

4. Any obvious observations from my previous attempt?

Journal entry 3:

Date:

Brief outline of the grade, subject, pre-class and in class activities

Based on your experience in the previous lessons, briefly reflect on the <u>impact</u> of the *Altered Flipped Class* on learner engagement, individual learning needs, general classroom interaction and learner motivation

Based on your experience in the previous lessons, briefly reflect on the <u>challenges</u> that you were faced with when implementing the *Altered Flipped Class*

Any other applicable/ noteworthy reflections?

ADDENDUM J: ONLINE INTERVIEW INVITATION

Altered Flipped Pedagogy: Online Interview (1)

LP Lizelle Pretorius
Required ●▬▬▬▬▬

Accept ∨   ? Tentative ∨   ✕ Decline ∨   ⏱ Propose New Time ∨

Mon 2021/10/11 15:40

🕐 *Tuesday, 12 October 2021 10:30-11:30,   ~~(Monday, 11 October 2021 16:30-17:30)~~*   📍

Hi ▬▬

Looking forward to our online interview later on.

Kind regards,

Lizelle

_____

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Learn More | Meeting options

ADDENDUM K: INTERVIEW PROTOCOL

Teacher interview protocol for a semi-structured interview

1. Please provide a brief overview of the grade, subject and topic that you chose when implementing the FCP.

2. What is your understanding of the altered FCP?

3. Could you please give an overall/general account of your personal experience when implementing the FCP. (*prompt teacher role/ move to learner-centred)

4. Could you please provide an overview of the perceived academic advantages for your learners when implementing the FCP?

5. Could you please provide an overview of the perceived social/ behavioural advantages for your learners when implementing a FCP. (*prompt motivation & self-determination)

6. In your view, what were the biggest challenges when implementing the FCP?

7. What value do you think the FCP hold as instructional strategy for education?

8. Will you continue to make use of the FCP in future? Please motivate your answer.

9. Any other relevant comments or reflections that you would like to share?

ADDENDUM L: FEEDBACK QUESTIONNAIRE

The Altered Flipped Pedagogy: Extensive feedback on the training

Years teaching experience	
Highest qualification	
Position at school (Teacher/ HOD/ Subject head / Deputy Principal etc.)	
Average amount of learners in your class	
Subject(s) that you teach	

1. Why did you decide to attend the online training?

2. What **potential advantages** (academic/social/cognitive) do you foresee when implementing the *Altered Flipped Pedagogy*?

3. What **potential challenges** do you foresee when implementing the *Altered Flipped Pedagogy*?

4. Does the *Altered Flipped Pedagogy* have the potential to develop 21st century learner skills? Could you please provide examples of these skills?

5. What value do you think the *Altered Flipped Pedagogy* hold as instructional strategy for education?

6. Will you use the flipped learning strategy in your future classroom and why?

7. Any other relevant reflections/comments that you would like to share?

ADDENDUM M: SPONTANEOUS RESPONSE

Good day -

Thank you for a very informative session yesterday. I thoroughly enjoyed it. I must admit that I found it extremely frustrating not to be able to join in the conversations especially as I also teach at a school with very few students in a class, and wanted to add my opinion to the other speaker's concerns! I'll have to figure out why my mute button wouldn't unmute!!

I will definitely be doing some extra research on the concept but particularly liked the way that you have approached the flipped classroom from a South African perspective, with all its technological and logistical challenges.

I introduced flexible seating this year, and even with the social distancing requirements the students have spent most of the year working from couches, bean bags and group tables. I allowed the students to chat while working, help each other to complete tasks and move around freely to sit in a new seat each period if they wanted to. I also had to do this as an "altered" version, as I couldn't offer very many seating alternatives with both Covid restrictions and a zero budget! My principal was delighted to lend this idea support and we have seen how it has particularly affected class cooperation. I teach a group of 12 Grade 7's who by Grade 5 had earned themselves the reputation of being the "naughtiest" class ever. Mostly because there was so much infighting, quarreling and, well, bitchiness. After 30 years teaching I know that happy kids are learning kids - so researched ways to change things up. I turned my classroom into a coffee shop! With Cafe background music, a coffee machine bubbling away every Friday, a couch, dining tables, bean bags, rugs to sit on, chalkboard sayings, and a relaxed atmosphere. I must say I thought it was going to be chaos - and I'm a very "ducks in a row" sort of person...and yes it's much noisier...but no one has managed to be sent to the principals office so far, no major infighting, no particular discipline issues, and on the whole a noticeably happier, and much more self disciplined class. From seating - who knew!!

I began teaching in 1991 and from teaching in state schools with huge classes, private schools with very affluent children to a small village school now, I have held one sentence up as both an example of fear by most teachers and a personal challenge for me : "But we've always done it this way"... In this age we cannot do it the way "we have always done it" - our students are not prepared for life, are not empowered to make changes in the world and are not able to work as part of an altruistic team. There are always one or two who stand out, but when we talk of the masses - we teach them to look to others to solve their problems, to give up and choose an easier path if things get too challenging, and the worst - not to take responsibility for their efforts or lack there of, because if you don't hand in a task on time, it's okay we can't give you zero anyway, if you fail its okay as we can't hold you back anyway, if you don't understand the work it's okay as you only need 30% in most of your subjects anyway...

Okay that was a really long rant and at this point you're thinking that it was probably a good thing my mute button wasn't working 😉 !!

All that to say that I'm definitely going to be trying the techniques for an altered flipped classroom. With my current classroom setup it lends itself really well to your techniques, and a small class just means we'll need to think outside the box a bit when it comes to some of the activities.

I'm not sure if I can be part of your research as I'm teaching Grade 7's not high school, but I'll be going ahead to try this out anyway and would like to report back to you on how it goes. Our school closes on 23rd September until 5th October and at this stage we're only on revision as we finish up tasks and tests - so I'd like to introduce it as I return next term (week 5th - 8th) - is this too late for you?

In my case the principal is very enthusiastic for me to try this and report back on your training to the high school. Our high school introduced ebooks this year, and are investigating using hybrid learning next year (where grades 10-12 work on line in a central hub and teachers take the role of facilitators except for practical applications like map work etc) and I think your concept would work really well - even in the very small classes.

Okay very long story to say thank you, yes please and brilliant idea!!

Good luck with all the research!

Kind Regards

ADDENDUM N: INTERVIEW MEMO

Reflexive Journal entry: 12/7/22 & 18/7/22 - 27/7/22

*** Document theoretical and reflective thoughts (as per phase 1 of the research - Nowell, 2017/Braun & Clarke, 2006)

1. Familiarizing yourself with your data
2. Prolong engagement with data
3. Document thoughts about potential codes/themes

General impression / notable findings:

* is a teacher at a private school. She commented on her teaching prac at a government school while doing her PGCE. She acknowledges that she was not "cut out" to deal with the pressures at the government schools, however states that it was "rewarding". Does this comment possibly reflect a higher "input" level at government schools in terms of resources (emotional / physical) why is it "more rewarding"? What does this say about the demands made on teachers who teach at public schools?

"This this is, you know, any stressors that come from come with this job. Well not any stressors. There are stressors that are very very very stressful. But most of it is a dream. Really it's wonderful, yeah?" * passionate about her profession.

* had prior exposure to the FCP before attending the session (staff development). What appealed to her was the fact that it was designed for the South African context. Also the concept of student-centred learning resonates with her. *"I really believed in in a student-centred learning as opposed to the chalk and talk mode"* Are some teachers more pre-disposed to being "open" to a learner-centred approach? If so, why? What are the determining factors or attributes?

"You don't necessarily leave the children to just go off randomly and do their own research. That two scaffold the research for them, that you scaffold their uhm pre-class activities so that they feel a little more supportedS"

Teacher definition of the AFCP shows that she doesn't fully understand what *altered* refers to... Defines it in terms of scaffolding the pre-class activities and

ADDENDUM O: MEMO OF THE CODING PROCESS

ADDENDUM P: ONLINE TRAINING PRESENTATION

7
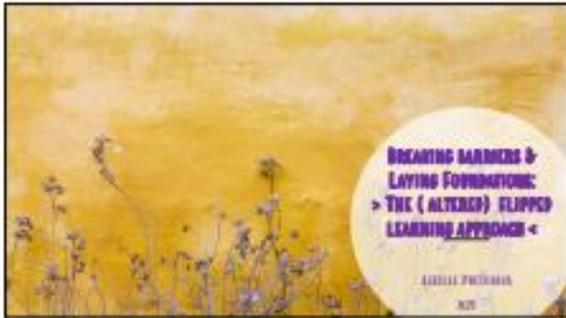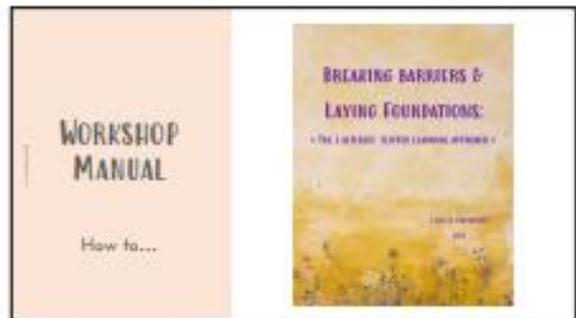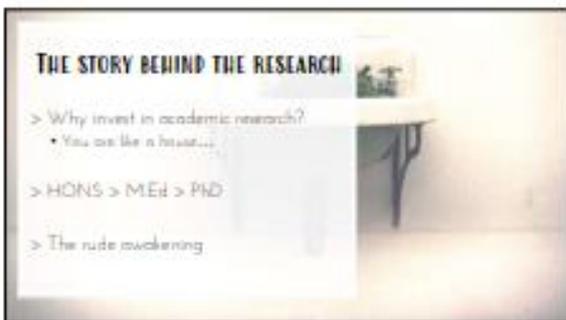
SIMILAR REALIZATION

- Potential dangers of passive learning

Turning Point

8

THE TITLE OF THE STUDY (RESEARCH QUESTION)

An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centered classroom

9

IRONY!

ACTION

CAPS highlights:
- active
- critical thinking, reasoning, reflection
- integrated-knowledge
- educator as facilitator
- go beyond memorisation
- flexible time frames
- own pace

10

PASSIVE LEARNING PHENOMENON

11

KEY CONCEPT 1: NEUROEDUCATION

1. Holistically
2. Pedagogy
3. Motivation
4. Emotions
5. Brain plasticity

12

KEY CONCEPT 1: NEUROEDUCATION CONTINUED

13

14

15

16

17

18

EXAMPLE: LITERATURE
***Refer to manual p.16

19

EXAMPLE: CREATIVE WRITING

20

EXAMPLE : HISTORY
• Jennifer Court (guest)

21

STUCK?!
> Contact me @
OR
>

22

YOU DIONT COME THIS FAR TO ONLY COME THIS FAR
TO BE CONTINUED...

23

Thank you!
THANK YOU
THANK YOU.

24

SOURCES

25

ADDENDUM Q: UNISA ETHICS APPROVAL FORM

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2021/07/07

Ref: **2021/07/07/58561080/31/AM**
Name: Ms L Pretorius
Student No.:58561080

Dear Ms L Pretorius

Decision: Ethics Approval from
2021/07/07 to 2026/07/07

Researcher(s): Name: Ms L Pretorius
E-mail address: 58561080@mylife.unisa.ac.za
Telephone: 072 200 7282

Supervisor(s): Name: Prof. M.M van Wyk
E-mail address: vwykmm@unisa.ac.za
Telephone: 0124294775

Title of research:

An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centred classroom

Qualification: PhD Curriculum Studies

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2021/07/07 to 2026/07/07.

The **medium risk** application was reviewed by the Ethics Review Committee on 2021/07/07 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.

2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

374

ADDENDUM R: LANGUAGE EDITING CERTIFICATE

EDITING SERVICES

To whom it may concern

This letter serves to confirm that editing and proofreading was done for:

LIZÉLLE PRETORIUS

Doctor of Education

Curriculum Studies

University Of South Africa

AN ALTERED FLIPPED CLASS PEDAGOGY AS INTERVENTION STRATEGY TO ADDRESS PASSIVE LEARNING IN A TEACHER-CENTRED CLASSROOM

Cilla Dowse
26 January 2023

Cilla Dowse	Rosedale Farm
PhD in Assessment and Quality Assurance in Education and Training: University of Pretoria 2014	P.O. Box 48 Van Reenen
Basic Editing and Proofreading: McGillivray Linnegar Associates 2008	Free
Programme on Editing Principles and Practices: University of Pretoria 2009	State cilla.dowse@gmail.com
Editing and Proofreading for Academic Purposes: McGillivray Linnegar Associates 2021	Cell: 084 900 7837
Professional Editors' Guild Associate Member, DOW003	

ADDENDUM S: TEACHER TRAINING MANUAL

Complete Training Manual will follow on next page

Breaking barriers &

Laying Foundations:

> The (altered) flipped learning approach <

Lizélle Pretorius

2021

Table of Contents
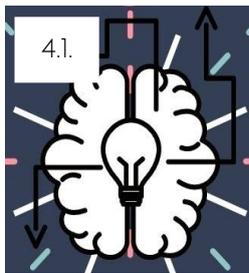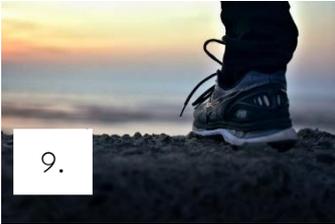
THE STORY BEHIND THE RESEARCH...

RESEARCH IDEAS!

❖ Passive learning

❖ Flipped learning

❖ Neuroeducation

❖ Self-determination theory

TITLE OF THE STUDY:

An altered flipped class pedagogy as intervention strategy to address passive learning in a teacher-centered classroom

BACK TO BASICS:

WHAT DOES CAPS SAY?
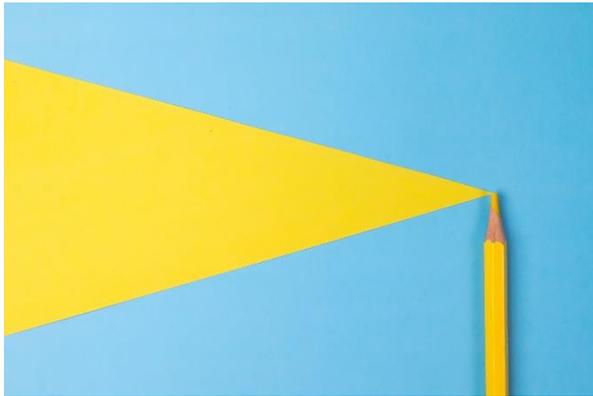
Critical outcomes:

- Learning has to be <u>active</u>

- There is a focus on <u>critical thinking</u>, <u>reasoning</u>, <u>reflection</u> and action

- <u>Knowledge</u> is <u>integrated</u> in the sense that it is relevant and connected to <u>real-life</u> situations

- The educator is a <u>facilitator</u> **for** learning – and that learning goes <u>beyond memorising</u>

- <u>Flexible time frames</u> allow learners to work at their <u>own pace</u>

Food for thought...

"We like to think that we can predict learning but we can't. Only the learner has control over this." (Hase & Kenyon, 2003:1)

Passive learning:
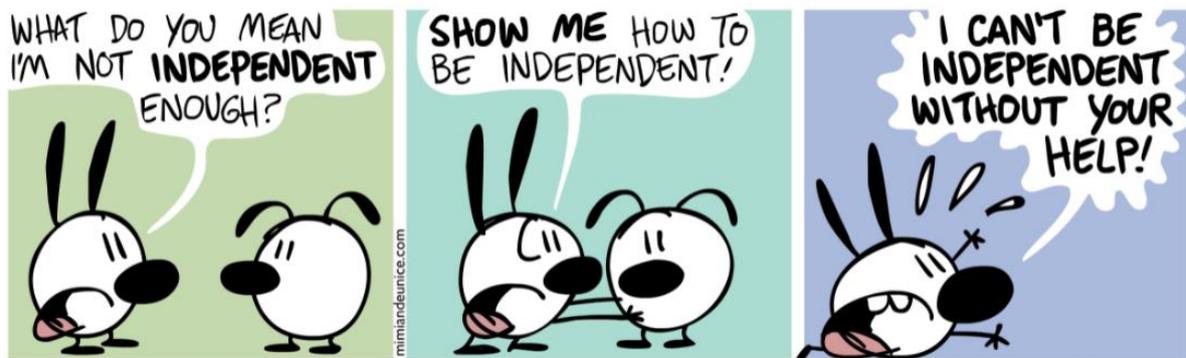
Overview:

- The focus is on knowledge transfer

- Content-based and teacher-centred

- 'Teaching to the test' (Hoadley, 2012)

- Common in what research label as 'traditional classrooms'

- 'Dependency model of education' where learners overly rely on their teachers for support and guidance (Narendran et al. 2018:9)

Instructional strategies:

- Higher levels of teacher talk

- Reliance on textbooks

- Mainly focus on recall & recitation

- Strong lesson framing

- High levels of extrinsic motivation

- Rote-learning & drilling

- 'One size fits all'

- Narrow stimuli presented by the teacher (minimum exposure to resources/props/apparatus etc.)

- Limited opportunities to reason, explore & engage in strategic thinking

- Limited interaction with peers or peer-learning

- Learner engagement is 'ordered'

(Holte et al., 2020; Claxton, 2018; Westbrook et al., 2013; Alexander et al., 2009; Mascolo, 2009; Beutel, 2006; Väyrynen, 2004; Hase & Kenyon, 2003; Cuban, 1983; Dubinsky et al., 2019)

STOP & REFLECT...

How does passive learning impact learning & the development of skills?

© Lizélle Pretorius 2021

Laying foundations:

Key concept 1: Neuroeducation
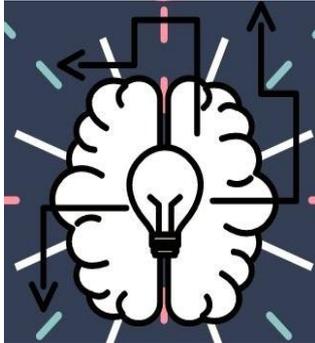
> **Neuro + Education**
>
> Neuro – the study of nerves & the nervous system
>
> **Definition:**
>
> n. *the study of the activities that occur in the brain when individuals learn and the application of this knowledge to improve classroom instructional practices and optimize curriculum design* (https://dictionary.apa.org/neuroeducation)
>
> **Purpose:**
>
> To advance our knowledge of how the brain learns in order to create more optimal learning environments, improve academic performance and develop a different skillset in learners

Breakdown: What does the research say?
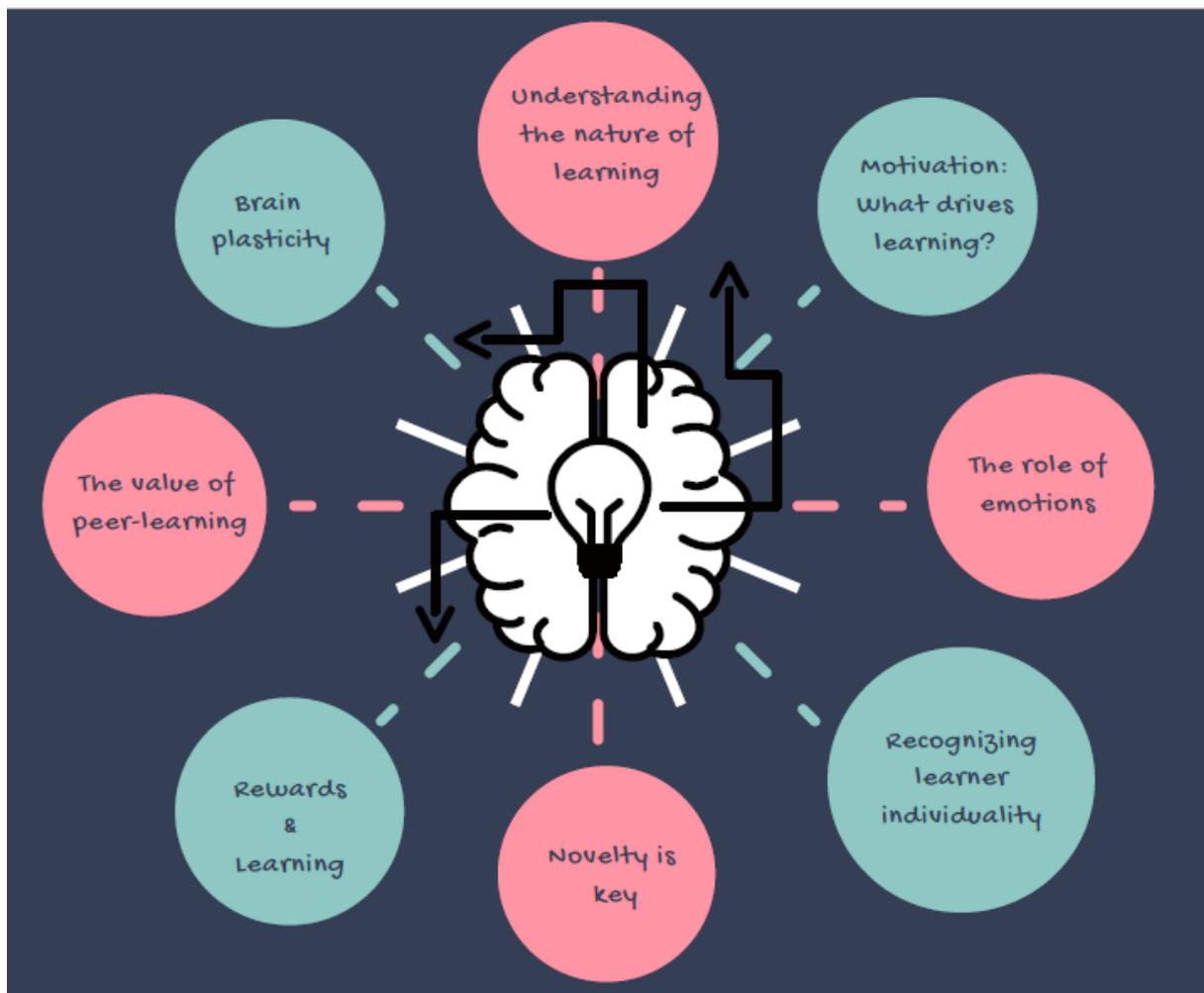
STOP & REFLECT...

Do you agree that Neuroeducation research strongly encourage and support active learning experiences?

Why or why not?

KEY CONCEPT 2: SELF-DETERMINED LEARNING (HEUTAGOGY)

Heutagogy: What does it mean?
The word heutagogy originates from the Greek word "heut" meaning 'self'. Within academic literature, heutagogy refers to the theory of self-determined learning (Hase & Kenyon, 2003:3; 2007).

Breakdown: What does the research say?
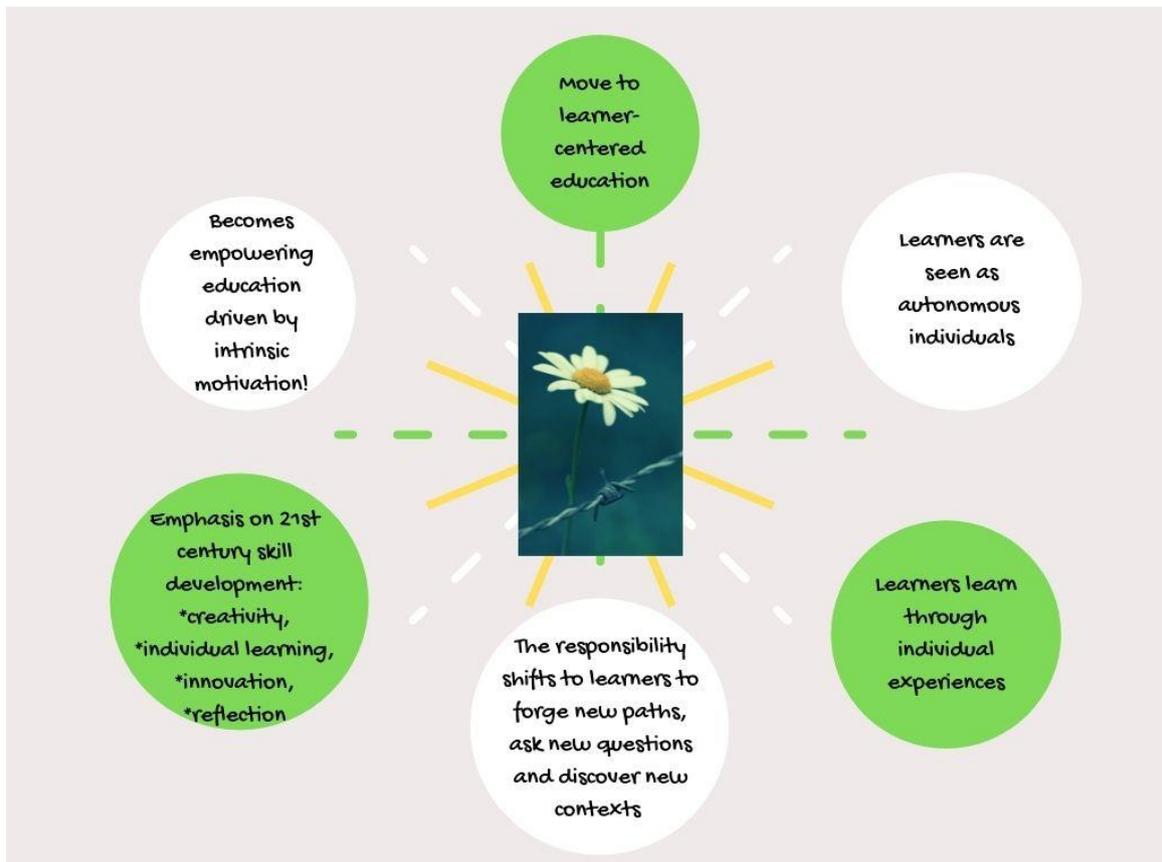
KEY CONCEPT 3: FLIPPED LEARNING

Definition:

Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter (Flipped Learning Network, 2014).

Background to the instructional method:

Bergmann & Sams introduced flipped learning in their classes in 2007. It became popular in 2012 when they published their book: Flip your classroom: Reach every student in every class every day.

The idea to flip their classrooms came from asking a simple question: "What is the best use of face-to-face time with students?" (Bergmann & Sams, 2012)

Two high school chemistry teachers are considered the pioneers of flipped learning.

Before Bergmann & Sams studies were done by Lage et al. (2000) and Baker (2000).

Their conclusion...
Their learners needed them most when they struggled to understand a difficult problem or concept while doing homework out of class and did not have access to their teachers to guide them. They realised class time should rather centre around engaging activities and hands-on experiences where the teacher can provide support when needed.

Bergmann
&
Sams

Jon Bergmann & Aaron Sams

HOSTED BY

LEARNING

New roles

The "Four Pillars of FLIP" =

F – flexible environments
L – learning culture
I – intentional content
P – professional educators

Pre-class, in-class and post-class activities

Why altered?

"I don't have data!"

Flipped learning relies on technology and internet access - something that is currently not feasible in the majority of public schools and communities within the South African context. The lack of access to internet connectivity, was confirmed by the most resent NEIMS report (National Education Infrastructure Management System) that is annually released by the DBE. Currently, of the 23 267 public schools in the country, only **20,3 %** have access to the internet for teaching and learning purposes.

Now what?

Question: How could resources be designed, structured or used more effectively that learners can engage with these on their own and prepare themselves before coming to class irrespective of whether they had access to the internet?

WHERE THE RUBBER HITS THE ROAD:

–PRACTICAL EXAMPLES–

Pre-class activities:

Overview:

Pre-class activities focus on the two lowest levels of Bloom's Taxonomy (remember and understand) and introduce learners to the topic/content/skill that will be explored in greater depth in class (Gilboy et al., 2015; Hsieh, 2017).

Purpose:

To <u>activate</u> learners' prior knowledge and their independent processing capacity, <u>engage</u> them in the curricula and to <u>promote</u> creative thinking. Learners then become empowered before entering the classroom as they already have schema or ideas upon which to construct new knowledge and contribute to the learning process in general and more specifically the experiences of their peers (Al-Zahrani, 2015; Hsieh, 2017).

Examples of pre-class activities:

- reading the transcript of a speech or video

- creating a mind map or flow chart based on information provided in a textbook or elsewhere

- linking images to content

- identifying main ideas on information provided in a textbook or elsewhere

- looking for similarity or difference between two ideas/concepts

Ideas from Barbi Honeycutt (PhD) one of the leading researchers in the field includes:

- readings

- worksheets

- quizzes

- games

- puzzles

- graphs

- charts

- diagrams

Other activities include:

- guess the topic and motivate your answer (based on words or images)

- fit column A with column B

- KWL chart: give learners a topic – they have to write everything they know about the topic (K) followed by questions about what they want to know (W). This can be followed up by an in-class activity on what they have learned (L) (https://englishpost.org/examples-of-pre-reading-activities/)

Please remember activities will vary according to the subject and age of the learners being taught. These activities **do not have to be complex or time-consuming to create. They should merely introduce/expose the learner to the content or topic being taught!

What does it look like in a language class?

Lesson overview:

- Gr 10 Afrikaans FAL

- Literature (Poetry)

Plan of action day 1:

- Introduce learners to the literary terms (handout / textbook)

Pre-class activities:

- Handout: Visual representation of the poem *Halala Afrika* by Johannes Kerkorrel
    - Write 5 key words that relates to the poem
    - What do you think the title of the poem will be?
    - What do you think the main theme of the poem will be?
    - Create your own example of a metaphor and personification using the images as you reference

What if learners do not want to engage in the pre-class activities?

Dr. Honeycutt has 3 recommendations to enhance motivation and to encourage learners to come to class prepared:

1.

AUTONOMY:
Give direction & guidance but
leave room for own approaches

pre-class activities

3.
PURPOSE:
Connect the pre-class
work to the in-class work

2.
MASTERY:
Hold learners
accountable by making
their learning visible

Source: https://barbihoneycutt.com/blogs/
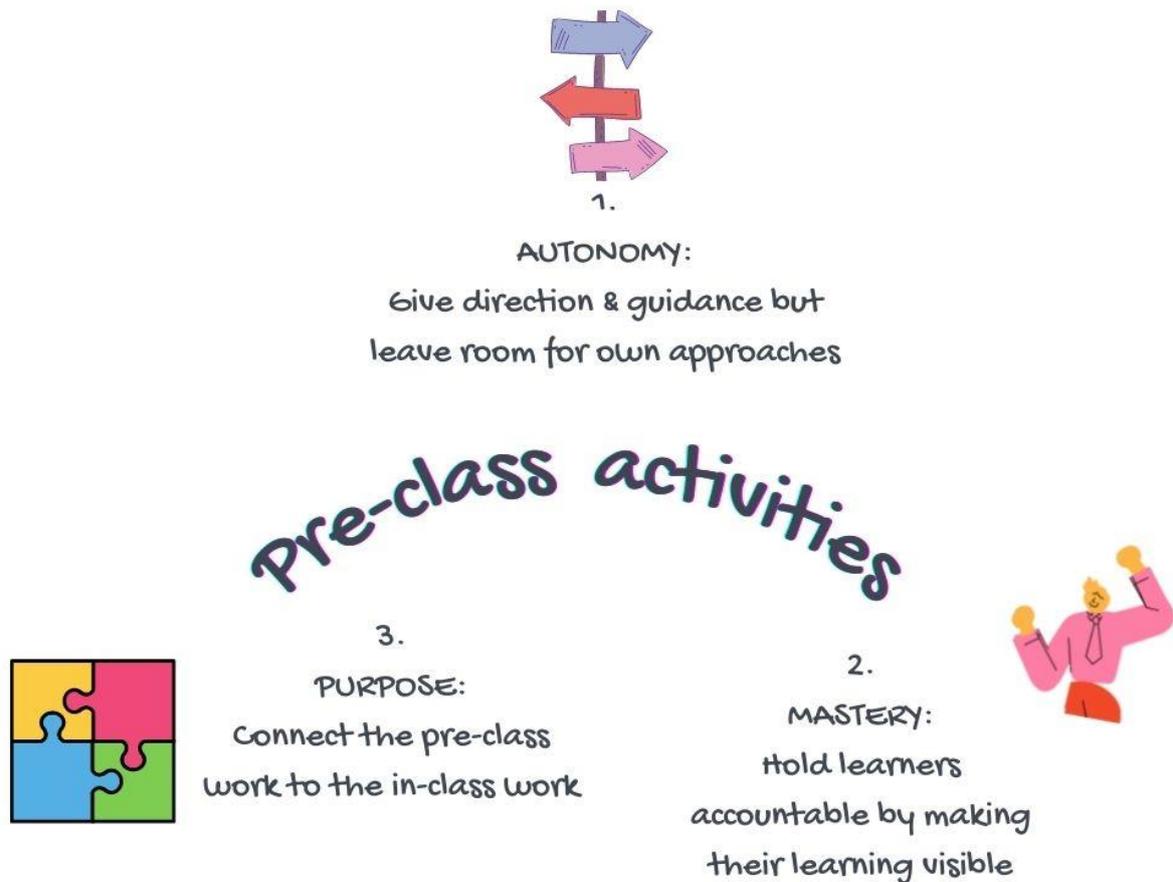
** Please see the following by Barbi Honeycutt:

10 Strategies to encourage students to actually DO the pre-class work

http://barbihoneycutt.com/whitepaper

(**permission obtained from the author)

In-class activities:

Overview:

In-class activities builds on the pre-class activities and allows for the development of the higher levels of Bloom's Taxonomy (e.g., application, analysis & evaluation) (Gilboy et al., 2015).

Purpose:

Teachers can easily resolve misconceptions, facilitate teamwork and problem-solving activities, provide immediate feedback and explain targeted (problem) areas. Learners have the opportunity to evaluate their progress, broaden their understanding of the topic under discussion, explore topic(s) in greater depth and consequently deepen their understanding (Gündüz & Akkoyunlu, 2019; Yang, 2014; Fulton, 2012; Jdaitawi, 2019; Little, 2015).

Examples of in-class activities:

Focusses on interactive, collaborative activities and include the following:

- using a dice to identify roles (e.g who takes notes & argue for /against a topic)

- think-pair-share

- jigsaw

- debates

- case-studies

- mind mapping

- muddiest point

- role-plays

- quiz-cussion

- sketch-noting

- discussions

- presentations

- peer-to-peer instruction

- asking reflective questions

- homework exercises &

- educational games

(Becker & Birdi, 2018; Gilboy et al., 2015; Honeycutt, 2016; Hsieh, 2017; King, 1993; Moffett, 2015; O'Flaherty & Phillips, 2015; Reyna, 2015; Bishop & Verleger, 2013).

Many of these activities can be adapted as formative assessment activities thereby providing teachers with the opportunity to address misconceptions or gaps in learners' knowledge at the onset of a new topic (O'Flaherty & Phillips, 2015).

**Please see addendum A for an overview on these activities!

What does it look like in a language class?

Plan of action day 2:

In-class activities

- Think-pair-share (answers on the pre-class activities) (3 min)

- Teacher distributes the poem (3min)

- Learners read through the poem on their own (3 min)

- Think-pair-share (reflect on answers to the questions to the original pre-class activity) (3 min)

  - theme - similarity / difference

  - title - similarity / difference

  - imagery – identify examples in poem

- Jigsaw:

  - Teacher to allocate Jigsaw groups (2 min)

  - Learners allocate a number from 1-6 (2 min)

  - Break away in Expert groups (1-6) (10 min)

  - Use the following to guide analysis of the stanza(s) you have been allocated:

    - identify figures of speech, imagery (incl. the meaning), rhyme, meaning of unfamiliar words, how does your stanza relate to the theme/title/context of the poem

  - Jigsaw groups – feedback in groups (A-F) (18 = 3x6 min)

Halala Afrika

1.
1. Toe die wêreld hier nog jonk was
2. en die horison wyd en oop
3. was dit groen hier in die halfrond
4. suid van die ewenaar
5. en in die skemer as die son sak
6. en die beeste huis toe loop
7. klink die roepstem van die vroue
8. oor die heuwels van die land
10. halala, halala
11. ewig is ons Afrika

2.
12. tula tula mtanami
13. tula tula sanaboni
14. tula tula mtanami
15. ubab uzobuya sihlale naye
16. ubab uzobuya sihlale sonke

3.
17. toe kom die skepe uit die weste
18. wit seile oor die see
19. om te vra vir kos en water
20. en te bly vir soveel meer
21. en die land wat een tyd oop was
22. die land het ons verruil
23. vir die ghetto's van die stede
24. is ons koperdraad gegee

4.
25. halala, Afrika
26. sasiphila kamnandi
27. mayibuye Afrika

5.
28. Daar was rykdom in die maag
29. van ons moeder Afrika
30. diamante, steenkool, goud, edelmetaal
31. en die mense word die slawe hier
32. want die mense word betaal
33. om te tonnel in die aarde
34. elke greintjie uit te haal

6.
35. en die groote en oop grasvlaktes
36. span dit toe met doringdraad
37. en van die olifant tot die gemsbok
38. al die diere moes kom buig
39. voor die mag van die grootwildjagter
40. voor die mag van sy groot geweer
41. totdat net die stilte oorbly
42. totdat net die stilte heers

7.
43. halala, mayibuye Afrika

Johannes Kerkorrel

Vertaling:	
Halala	- Hoera
Tula tula mtanami	- stil, stil my kind
Tula tula sanaboni	- stil stil my kleinding
Ubab uzobuya sihlale naye	- jou pa sal terugkom dan sit ons saam met hom
Ubab uzaboya sihlale sonke	- Jou pa sal terugkom dan is ons almal saam
Sasiphila kamnandi	- ons het lekker gelewe
Mayibuye Afrika	- mag Afrika terugkeer

Post-class activities:

Overview:

Post-class activities are not as common when implementing this instructional method. This may be ascribed to the FCP mainly reversing how traditional schooling is organised (lecture in class & homework at home) (Wang, 2017).

Purpose:

To provide additional opportunities for the application of skills or knowledge. It can also be used for consolidation and to provide feedback to the teacher (Roehl et al., 2013; Rotellar & Cain, 2016)

Examples of post-class activities:

Focusses on activities that promotes reflection or learners giving an account of what they have learnt. A few include:

- presentations
- writing a short reflection

- writing an essay

- test creation by learners

- the analysis of case-studies

(Gilboy et al., 2015; Roehl et al., 2013)

What does it look like in A language class?

Post-class activity

- Write a paragraph on your understanding of the **message** of the poem

Plan of action: Day 3:

In-class activity

- Learners complete a worksheet on the poem

Post-class activity

- Provide learners with the memo – learners to mark answers and do corrections

Why we should let them struggle!

Why Struggle Is Essential for the Brain — and Our Lives

By Jo Boaler   Oct 28, 2019

As parents and teachers, we do just about everything we can to make sure that children don't struggle. It turns out we are making a terrible mistake. ==Research shows that struggling is absolutely critical to mastery and that the highest achieving people in the world are those who have struggled the most.== The more I communicate this message to parents and teachers the more stories I hear of complete personal transformation.

Neuroscientists have found that ==mistakes are helpful for brain growth and connectivity== and ==if we are not struggling, we are not learning==. Not only is struggle good for our brains but people who know about the value of struggle improve their learning potential. This knowledge would not be earth shattering if it was not for the fact that we in the Western world are trained to jump in and prevent learners from experiencing struggle.

When students look at me and say: "This is hard," I say, "That is fantastic."

An international study of mathematics teaching found that teachers in Japan put their students in places of struggle 44 percent of the time in classrooms—they saw this less than 1 percent of the time in U.S. classrooms. ==What do we parents and teachers do instead? We jump in and show the way, offering steps to a solution to help save our students from struggle.== This is in large part because this new science is not widely available and we are culturally trained to feel bad, and to rush in and help, when this is probably the last thing we should do.

Once we stop the charade of knowing everything, and embrace knowing less, with a willingness to sit with uncertainty, unexpected things happen.

When I was teaching middle schoolers in a research math camp a few years ago one girl stood out to me; she was nearly always wrong in her thinking, but she was always engaged, arguing her case, pushing to understand better. An observer of the class would have described her as a low achiever, but she improved more than any other of the 84 students we taught that summer. Her standardized test score in mathematics improved by 450 percent after 18 struggle filled lessons. Our messages to the students—that struggle would be valued and mistakes are productive—had helped her feel good about struggle and embrace it.

When I tell young learners that struggle and mistakes are the best times for our brains it is freeing. Students no longer give up on problems when they find them hard—they push

through the struggle to the wonderful places on the other side. When students look at me with a puppy dog face and say: "This is hard," I say, "That is fantastic. <mark>That feeling of 'hard' is the feeling of your brain developing, strengthening and growing"</mark>.

We cannot achieve anything creative without being comfortable with mistakes and struggle.

I am not arguing that knowledge is bad or knowing answers is not helpful. What I am saying is that <mark>knowledge is less important than a mindset of discovery and curiosity</mark>. We cannot achieve anything creative without being comfortable with mistakes and struggle—and we should all embrace times of struggle, knowing they are helping our brains. When we adopt a limitless perspective, approaching different jobs and conversations with a comfort with uncertainty and struggle, with a willingness to learn from others and with a flexible approach to problems, outcomes improve—in learning and in life.

Millions of students start the school year each year excited for all they will learn, but as soon as they struggle or see someone solve a problem with ease, they start to doubt themselves and mentally shut down. This starts a less productive learning pathway for them. Instead they should value the time of struggle and know that they are on their way to being better, wiser and equipped with a stronger brain. Getting answers right is OK, being stuck and finding them hard is fantastic.

Jo Boaler is the Nomellini-Olivier Professor of Education at Stanford, co-founder of youcubed.org and author of the new book "Limitless Mind: Learn, Lead & Live without Barriers."

SOURCE: https://www.edsurge.com/news/2019-10-28-why-struggle-is-essential-for-the-brain-and-our-lives (**Permission obtained from the author)

Addendum A: In-class activities
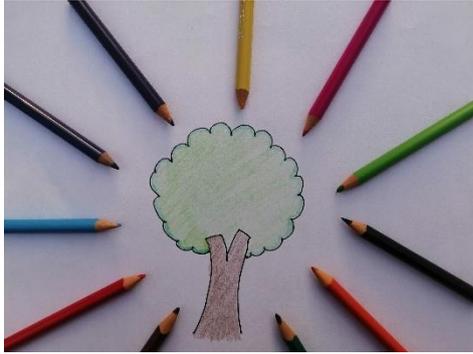
1. Think-pair-share

- Provide learners with a question/prompt to provoke interest
- Learners get 1-2 minutes to think about the prompt
- Pair up learners with close neighbours and give them opportunity to talk about their individual thoughts
- After pair has shared they can give feedback to a bigger group or the class

2. Jigsaw

- The idea is to form a collective understanding of a topic
- Divide the learners in groups of 4-6
- Divide the content into the same number of chunks as the number of learners in each group
- Assign one chunk of content to everyone in the Jigsaw group (he/she takes responsibility for his/her section
- Learners study their own chunk of content independently
- Learners then meet in Expert Groups (learners work with learners from other groups who have been assigned the same chunk of content)

- Learners compare and share their ideas in expert groups and have to prepare the content to share back to their Jigsaw Group
- When returning to their group each learner gets the opportunity the share with the rest of the group
- All of the learners will be assessed on all of the content

3. Flowcharting

- Learners sketch a flowchart showing how a procedure or process works

4. Muddiest point

- Learners get two index cards
- They write "clearest point" on one & "muddiest point" on the other
- Give them a few minutes to write what they know after the lesson and what they are still confused about
- They hand it back to the teacher – this serves as feedback for the next lesson

5. Peer-to-peer instruction

- Learners are introduced to key concepts in pre-class activity
- A problem is posted in class and learners have to report their answers using (flashcards/fingers)
- Learners then work with their neighbours – they have to explain their answers
- The teacher poses the same question to the learners who have to give their answer

6. Ques-cussion

- This can be used as a whole-class or group activity
- Learners have to wait at least 6 turns (whole-class) or give each member of their group a turn before asking their next question
- Question tags aren't allowed (It can fly, <u>can't it</u>?)
- If anyone makes a statement, you/the class can remind them by calling out "**statement!**"
- At all times bear in mind the topic of the Ques-cussion
- The topic should be relevant and appropriate to the age group
- It is used as a starter to a specific topic

7. Educational games

- Examples: Pictionary, scrabble, puzzles, sudoku, word-search crossword puzzles, 30 Seconds, Kahoot

8. Concept mapping

- Learners draw a map (graphic representation) depicting the relationships among aspects of a concept or principle

9. Sketch-noting

- Instead of taking traditional lecture notes, try getting your students to sketch a picture that represents what they've learned during class
- Remember - it's not about the quality of the art – it's about how drawing prompts students to visualize their understanding and look at their learning from a different perspective

(Honeycutt, 2016; King, 1993 and a variety of internet sources cited under sources)

USEFUL HINTS!

** Please feel free to explore more in-class activities on the web using these or similar key words:

- "Active-learning strategies/activities"
- "In-class flipped learning activities"
- "Cooperative learning strategies/activities"
- "Collaborative learning strategies/activities"

** You can also include your subject field to find activities that specifically relates to your subject field

A BIG THANK YOU !!

Please let me know if you require assistance/help or would like to discuss the implementation of your altered flipped class!

You can reach me at lizelle.phd@gmail.com OR 58561080@mylife.unisa.ac.za

We can schedule an online meeting or I can give you a call :)

Recommended reading:

Hohnen, B. & Murphy, T. 2016. The optimum context for learning: Drawing on neuroscience to inform best practice in the classroom.

References / Sources

Academic research cited:

Alexander, P.A., Schallert, D.L. & Reynolds, R.E. 2009. What is learning anyway? A topographical perspective considered.

Al-Zahrani, A.M. 2015. From passive to active: The impact of the flipped classroom through social learning platforms on higher education students' creative thinking.

Barabanova, I. & Kazlauskiene, A. 2020. Neuropedagogy: Preconditions for Application of Neuroscience Results in the Education Process While Providing Feedback.

Becker, R. & Birdi, A. 2018. Flipping the classroom: Old ideas, new technologies.

Beutel, D.A. 2006. Teachers' understandings of pedagogic connectedness. Unpublished doctoral dissertation.

Bhoyrub, J., Hurley, J., Neilson, G.R., Ramsay, M. and Smith, M. 2010. Heutagogy: An alternative practice based learning approach.

Bishop, J.L. & Verleger, M.A. 2013. The flipped classroom: A Survey of the research. Unpublished paper delivered at the 120th ASEE Annual Conference and Exposition.

Blaschke, L.M. 2012. Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning.

Blaschke, L.M. & Hase, S. 2016. 'Heutagogy: A holistic framework for creating twenty-first-century self-determined learners', in Gros, B., Kinshuk and Maina, M. (eds.). *The Future of Ubiquitous Learning: Learning designs for emerging pedagogies.*

Claxton, G. 2018. Deep rivers of learning.

Cuban, L. 1983. How did teachers teach, 1890-1980.

Degen, R.J. 2014. Brain-Based Learning: The neurological findings about the human brain that every teacher should know to be effective.

Department of Education. 2011. Curriculum and Assessment Policy Statement Grades 10-12. Pretoria.

Department of Basic Education. 2020. National education infrastructure management system. Pretoria.

Dubinsky, J.M., Guzey, S.S., Schwartz, M.S. & Roehrig, G. et al. 2019. Contributions of Neuroscience Knowledge to Teachers and Their Practice.

Flipped Learning Network. 2014. The four pillars of F-L-I-P.

Fulton, K. 2012. Upside down and inside out: Flip your classroom to improve student learning.

Gilboy, M.B., Heinerichs, S. & Pazzaglia, G. 2015. Enhancing student engagement using the flipped classroom.

Gündüz, A.Y. & Akkoyunlu, B. 2019. Student views on the use of flipped learning in higher education: A pilot study.

Hase, S. & Kenyon, C. 2007. Heutagogy: A child of complexity theory.

Hase, S. & Kenyon, C. 2003. Heutagogy and developing capable people and capable workplaces: Strategies for dealing with complexity. Unpublished paper delivered at the Changing Face of Work and Learning Conference.

Hoadley, U. 2012. What do we know about teaching and learning in South African primary schools?

Hohnen, B. & Murphy, T. 2016. The optimum context for learning: Drawing on neuroscience to inform best practice in the classroom.

Holte, J., Endres, R., Besser, D. & Dunston, D. 2020. The influence of active, passive, and mixed classroom activities on student motivation. Unpublished paper delivered at the ASEE Virtual Annual Conference. 22-26 June.

Honeycutt, B. 3 Strategies to Encourage Students to Complete the Pre-Class Work in the Flipped Classroom.

Honeycutt, B. 2016. The flipped classroom unplugged: Three tech-free strategies for engaging students.

Hsieh, B. 2017. Step by step, slowly I flip, in Santos Green, L., Banas, J.R. & Perkins, R.A. (eds.). *The Flipped College Classroom*.

Jdaitawi, M. 2019. The effect of flipped classroom strategy on students learning outcomes.

Kalbfleisch, L. 2015. Educational neuroscience, constructivism, and the mediation of learning and creativity in the 21st century, in Kalbfleisch, L. (ed.). *Educational Neuroscience, Constructivist Learning, and the Mediation of Learning and Creativity in the 21st Century*.

King, A. 1993. From sage on the stage to guide on the side.

Little, C. 2015. The flipped classroom in further education: Literature review and case study.

Moffett, J. 2015. Twelve tips for "flipping" the classroom.

Mascolo, M.F. 2009. Beyond student-centred and teacher-centred pedagogy: Teaching and learning as guided participation.

Narendran, R., Almeida, S., Coombes, R., Hardie, G. et al. 2018. The role of self-determination theory in developing curriculum for flipped classroom learning: A case study of first-year Business undergraduate course.

O'Flaherty, J. & Phillips, C. 2015. The use of flipped classrooms in higher education: A scoping review.

Reyna, J. 2015. Active learning and the flipped classroom.

Roehl, A., Reddy, S.L. & Shannon, G.J. 2013. The flipped classroom: An opportunity to engage millennial students through active learning.

Rotellar, C. & Cain, J. 2016. Research, Perspectives, and recommendations on implementing the flipped classroom.

Väyrynen, S. 2003. Observations from South African Classrooms: Some Inclusive Strategies.

Westbrook, J., Durrani, N., Brown, R., et al. 2013. *Pedagogy, curriculum, teaching practices and teacher education in developing countries*.

World Bank, 2017. *World Development Report 2018: Learning to Realize Education's Promise*.

Yang, J. 2014. Implementing the flipped classroom in elementary and secondary schools in China. Unpublished paper delivered at the International Conference on Education, Language, Art and Intercultural Communication.

Zadina, J.N. 2015. The emerging role of educational neuroscience in education reform.

Internet:

https://canvas.sydney.edu.au/courses/1316/pages/flipping-your-classroom-examples

https://barbihoneycutt.com/blogs/

https://www.youtube.com/watch?v=vxMOl2Vnw54

https://www.youtube.com/watch?v=zod0ghX7uVo

https://www.youtube.com/watch?v=VXxN99Le0nc

https://www.nureva.com/blog/education/15-active-learning-activities-to-energize-your-next-college-class

Image - Bergman & Sams:

https://www.edutopia.org/video/flipped-learning-toolkit

Cartoon:

https://designerlytalk.wordpress.com/2019/05/13/i-love-instructions-the-myth-of-independent-learning/

Mind maps:

Designed using *Canva* https://www.canva.com/

All images:

Unsplash https://unsplash.com/