# A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION AND COMMUNICATION TECHNOLOGY

**By**

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# DECLARATION

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## DEDICATION

This work is dedicated to my mom, Phindile Florence Sithebe who, through her love, supported me in my studies, by taking care of my last born child, Ngcebo Ziphozonke Donda, when she was three months old. For that reason, I honour you my mother for the love and support you gave to the whole family. May the Lord God bless you. I also dedicate this work to both the Mpontshana and Sithebe families for the support you have given to me. I have been going up and down for years striving to get this degree. Let us enjoy the fruits together. A special word of appreciation and thanksgiving goes to my husband, Vusumuzi, and our daughters, Nokukhanya, Snethemba, Thandokuhle, and Ngcebo. Let us enjoy the benefits of this PhD together.

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# ABSTRACT

This study aimed at designing a real-life-situation strategy of teaching business opportunities creation skills (BOCS), using information and communication technology (ICT). The strategy is developed against the background of several challenges impeding the teaching of BOCS using ICT in Amajuba District in KwaZulu-Natal (KZN). BOCS is one of the six purposes of Grade 12 Business Studies' learning content which students must comprehend and apply in their real-life situations during and after exiting matric. When demonstrating BOCS, teachers should utilise strategies that empower students to see how to learn; look for new data; use new data; assess the significance of data; and tackle novel and non-course reading proficient issues, utilising ICT. This was discovered to be trying for most teachers, as they actually present exercises that show BOCS in a theoretical structure, which is taken out from their (students) application to information. This makes it hard for students to move and apply the information and their abilities to real-life circumstances due to for, example brief (short) class period which deny the infusion of theory and practice in the teaching of BOCS, particularly the entrepreneurial skills using ICT. Besides, ICT applications and portrayals during BOCS exercises are generally used to computerise conventional techniques for teaching and learning by teachers , as opposed to displaying and implementing the multifaceted nature of ICT. Because of these and different other issues, this exploration proposes a genuine circumstantial technique that will guarantee the implantation of a theory and practice that eventually empower students to apply the information and abilities procured in the homeroom to their genuine circumstance.

The strategy further seeks to involve other external stakeholders aiming at forming an inter-sectoral and collaborative team with multiple and diverse entrepreneurial skills and knowledge required during the current Fourth Industrial Revolution (4IR) paradigm. It is undeniable that the 4IR has restructured the way we live, work, and interact with one another. This has led to radical changes in all the spheres of life including political, economic, social, education and social sectors (Elheddad, Benjasak, Deljavan, Alharthi, & Almabrok, 2021). It emerges on the previous digital revolution and capitalises on the synergistic effects of various advanced technologies (Jin & Shin, 2021), which includes the artificial intelligence, robotics, the internet of things, 3D printing, virtual and augmented reality. In the current study, the use of the 4IR enables teachers and students to use these technologies in the teaching of BOCS,

the entrepreneurial skills in live share trading (Jin & Shin, 2021). For example, the use of robotics to execute trades. The investigation is grounded on bricolage, a hypothetical structure that was first and foremost presented by the French anthropologist, Levi-Strauss in the *Savage Mind* (1966). Bricolage identifies with the irregular and relates to the game as an erratic, accidental and additionally arbitrary outcome and is related with other objects, where different accessible materials, when recombined and additionally applied with new capacities, as well as different organisations, rediscovers another article (Campos & Ribeiro, 2016; Rogers, 2012). Additionally, participatory action research (PAR) has been applied to create information with the co-researchers. This standard was applied for its emancipatory propensities and in light of it relating with bricolage, as the two of them avow a variety of voices in the research.

The researcher worked with a team of two Adult Education and Training (AET) teachers, four Grade 12 Business Studies learners, who are normally called Grade 13, as most of them repeat Grade 12, an Economic and Management Sciences (EMS) subject advisor, two entrepreneurs, a local economic development (LED) manager and two National African Federated Chamber of Commerce (NAFCOC) representatives. The study identified the challenges, strategies, conditions, threats and indicators, regarding the formulation of the real-life-situation strategy in the teaching and learning of BOCS, using ICT. Thereafter, we conducted a strength, weaknesses, opportunities and threats (SWOT) analysis amongst ourselves to determine our academic and personal identities. We also conducted a political, economic,social, technological, legal and environmental PESTLE analysis to awaken ourselves in terms of the macro-environments elements in which the study was conducted. The trading environments pertained the political, economic, social technological, legal and environmental elements learners were to analyse before executing the trade. The group's shared vision was to build a methodology that reacts to the difficulties impeding the teaching of BOCS utilising ICT in Amajuba District. The group held conversations in , workshops, and class perceptions (observations) with the aim of producing information that reacted to the goals of the examination (research). After multiple conversations, the research team agreed to single out one sub-topic from Investmrnt Securities, which was the live share trading using ICT. Fairclough's critical discourse analysis (CDA) was utilised to break down the desultory information. Information was dissected through three focal points, specifically the textual, discourse and social practice level.

The findings of the research showed that educators utilise a (textbook) method of teaching in the teaching and learning of BOCS using ICT, which made it difficult for studentsto infuse theoretical skills and knowledge attained in the classroom with their practical endeavours in their real-life situations. Teachers use static and standardised assessment only to assess learners, which inhibits them from practically using them in their real world. Even though, the use of bricolage made the team realise that static and standardised tests are equally important for students to know the facts from the memorised information which enable them to move from the known (theory) to the unknown practical application of live share trading using ICT. Moreover, the investigation discovered that there is a need for continuous teacher-development programmes to ensure that teachers are abreast of the knowledge and skills required in the teaching and learning of BOCS, which are entrepreneurial skills required in live share trading using ICT.

The study used the creation and building of knowledge approach through the utilisation of an inter-sectoral and collaborative team by reaching out to entrepreneurs (professional traders) and other related stakeholders to ensure the infusion of theory and practice. The aim was to ensure they would collaboratively share ideas, expertise and experiences on how teachers may effectively teach BOCS, the entrepreneurial skills on live-share trading acquired using ICT to infuse theory and practice. The threats that were considered a hindrance to the teaching and learning of BOCS, as entrepreneurial skills on live share trading using ICT, included the teachers' resistance to change to Rich Environments for Active Learning (REAL) and the lack of infrastructure and other resources.

**Keywords:** bricolage, business opportunities creation skills (BOCS), critical discourse analysis, entrepreneurial skills and knowledge, information and communication technology (ICT), live share trading, participatory action research (PAR),

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| | |
|---|---|
| ABE | Adult Basic Education |
| AET | Adult Based Education and Training |
| ABT | Adult-Based Training |
| ABSA | Amalgamated Banks of South Africa |
| AE | Academic Enterprise |
| AI | Artificial Intelligence |
| ATP | Annual Teaching Plan |
| AET | Adult Education and Training |
| BAT | Born After Technology |
| BCM | Business, Commerce and Management |
| BBBEE | Broad-Based Black Economic Empowerment |
| BOCS | Business Opportunities and Creation Skills |
| BUST | Business Studies |
| CAPS | Curriculum and Assessment Policy Statement |
| CAT | Classroom Assessment Techniques |
| CDA | Critical Discourse Analysis |
| CEO | Chief Executive Officer |
| CFDs | Contract for Differences |
| CLP | Collaborative Lesson Planning |
| CK | Content Knowledge |
| CPI | Consumer Price Index |
| CoP | Community of Professionals |

| | |
|---|---|
| CPTD | Continuous Professional Teacher Development |
| CV | Curriculum Vitae |
| DBE | Department of Basic Education |
| DoE | Department of Education |
| DIY | Do it Yourself |
| EEA | Employment of Educators Act |
| ELRC | Education Labour Relations Council |
| EMS | Economic and Management Sciences |
| ETDP | Education, Training and Development Practices |
| FAI | Free Attitude Interview |
| FET | Further Education and Training |
| FM | Free Market |
| FOREX | Foreign Exchange |
| HRDCSA | Human Resource Development Council of South Africa |
| ICT | Information and Communication Technology |
| JAB | Junior Achievement Botswana |
| JSE | Johannesburg Stock Exchange |
| KRAs | Key Results Area |
| KZN | KwaZulu-Natal |
| LED | Local Economic Development |
| LMS | Learning Management System |
| MACD | Moving Average Convergence Divergence |
| MERSETA | Manufacturing, Engineering and related Sector Education and Training |
| 4IR | Fourth Industrial Revolution |

| | |
|---|---|
| NAFCOC | National African Federation Chamber of Commerce |
| NDP | National Development Plan |
| NEPA | National Education Policy Act |
| NIHSS | National Institute for the Humanities and Social Sciences |
| NQF | National Qualification Framework |
| NSDA | National Skills Development Act |
| NSDSIII | National Skills Development Strategy |
| NPO | Non Profit Organisation |
| OBE | Outcome Based Education |
| PAR | Participatory Action Research |
| PC | Pedagogical Content |
| PCK | Pedagogical Content Knowledge |
| PD | Professional development |
| PEDs | Professsional Education Departments |
| PESTLE (analysis) | Political, Economic, Social, Technological, Legal and Environmental |
| PF | Practice Firm |
| PLC | Professional Learning Communities |
| PM | Prediction Market |
| RSA | Republic of South Africa |
| REAL | Rich Environments and Active Learning |
| RLSS | Real-Life Situation Strategy |
| SACE | South African Council of Educators |
| SADC | Southern African Development Community |
| SAQA | South African Qualifications Authority |

| | |
|---|---|
| SDA | Skills Development Act |
| SEDA | Small Enteprise Development Agency |
| SETAs | Sector Education and Training Authority |
| SGB | School Governing Body |
| SMEs | Small to Medium Enterprise |
| SMME | Small, Medium and Micro Entreprises |
| SMARTER | Specific, Measurable, Achievable, Relevant, and Time- bound |
| SMT | School Management Team |
| TARMI | Teacher Assessment Resource for Monitoring and Improving Instruction |
| SONA | State of the Nation Address |
| SWOT | Strength, weaknesses, opportunities and threats |
| UFS | University of the Free State |
| UK | United Kingdom |
| UNISA | University of South Africa |
| USA | United States of America |
| VC | Virtual Company |
| VE | Virtual Enterprise |

# CHAPTER 1
# OVERVIEW OF THE STUDY

## 1.1 INTRODUCTION

This research study sought to design a real-life situation strategy (RLSS) to be adopted in the teaching of business opportunities creation skills (BOCS) using Information and Communication Technology (ICT). This chapter introduces this research, with a brief background that contextualises the problem statement. It also briefly outlines the theoretical framework, research design and methodology as well as the data analysis technique.

## 1.2 BACKGROUND TO THE STUDY

Business Studies, as part of business, commerce and management (BCM), manages the information, perspectives and qualities that are basically educative, gainful, moral, hypothetical and capable of enhancing cooperation by students in the formal and casual monetary areas (DBE, 2011). DBE (2011) asserts that Business Studies encompasses business standards, hypotheses and practices that support the improvement of innovative activities, feasible ventures and financial development. Business Studies, as a subject, has four aspects, namely business environment, business venture, business role and business operation, with different topics. (DBE, 2011). Business Studies seeks to empower students to secure and apply fundamental business information, abilities and standards to gainfully and productively direct business in changing business conditions (DBE, 2011).

Also, business studies point toward guaranteeing that students inventively produce business openings, take care of complications and face challenges. In addition, it empowers students to adopt conventional business, and pursue economically innovative and independent work-related or professional pathways. Gamage and Weerakoon (2017) argue that entrepreneurial knowledge is multidisciplinary and includes skills, concepts, technical factors, attitudes, personality traits and the mentality the entrepreneur should have for successful entrepreneurship, which can be transferred through learning.

Nonetheless, during and even after education and learning have happened, no proof is demonstrated that students have understood the reasons, particularly of building on business

prospects, making sure that proper work is guaranteed and that practical, pioneering information and independent work-related or professional pathways are sought, which consequently applies to the current research. Learners studying Business Studies are unable to implement the entrepreneurial skills and knowledge in their real-life situations during and even after completion of their matric, which refutes the purpose of business studies as specified in the Business Studies CAPS document (DBE, 2011). In addition, the National Diagnostic Report on Learner Performance (2018) showed that learners had difficulties understanding Business Studies concepts, leading to content knowledge deficiency. Nonetheless, the indicative reports on Business Studies demonstrated that among different variables that caused and added to a decrease in students' adequacyn comprehension of the subject's concepts, are difficulty evaluating and showing techniques and procedures being applied by educators (Qhosola, 2016). For, example, teachers using textbook methods that promote the acquisition of theoretical content knowledge of investment in shares instead of promoting and teaching the infusion of the practical application of entrepreneurial skills in learners' real life situations. This happened even though the Department of Education has provided teachers with examination guidelines and an Annual Teaching Plan (ATP) where all the aspects to be covered are explicitly outlined (Qhosola, 2016; DBE, 2012).

Therefore, this study intends to design a strategy that could be used to teach business opportunities creation skills, the entrepreneurial skills on practical live share trading using ICT. The investigation is planned within the context of Business Studies Grade 12 educational programme, with the aim of guaranteeing that students acquire and apply fundamental business information, abilities and standards through the design of business possibilities to gainfully and productively redirect business in changing business conditions (DBE, 2011). Therefore, to ensure that students create business opportunities through the skills and knowledge, *Business Venture* (one of the four main topics in the Business Studies curriculum), and the sub-topic, *Investment Securities*, which deals with the different types of investments, were selected. *Investment on shares* was specifically selected from the various types of investments, with an aim of enabling learners despite their socio-economic background, race, gender, physical or intellectual ability, with knowledge, skills, and values necessary for self-fulfilment, and meaningful participation is society as citizen of a free country, as advocated by the general aims of the South African Curriculum (DBE, 2011). The content details for teaching and learning of investment: securities as per grade 12 curriculum includes: the functions of Johannesburg Securities Exchange (JSE); a range of available

business investment opportunities which includes: Government/RSA retail savings bonds; Unit trusts, Shares; Fixed deposit; Managed portfolio; Debentures; Fixed property, Mutual funds/Stokvels; Business ventures/venture capital; Endowment/Life Insurance policies/Retirement Annuities and the 32-day notice accounts/Call Deposits. All these types of investment securities have both positive and negative impacts. The reason why shares were selected for the study from all investments is that they are cheap and can be bought and sold by anyone. Their prices range from as little as 10 cents to an unlimited amount of money and can be traded for long-term as they can be bought at lower prices and be sold at higher prices.

Furthermore, the study specifically intends to infuse the theory taught in class with the practical investment on shares where students are trained on how to practically trade shares on long-term investment and profiteer while they are still in school and even when they have exited the school. The trading accounts serve as their businesses, as the study intends to instil the culture of entrepreneurial skills by infusing the theory learnt from classroom with practice in real-life situations.

The effectiveness of and efficiency in the infusion of theory and practice in the teaching and learning of BOCS is fostered by the use of ICT, which is viewed as a significant instrument in identifying better approaches to teaching and learning and is utilised to foster learners' abilities for collaboration, correspondence, critical thinking and long-lasting learning (Uluyol & Şahin, 2016). ICT helps learners to relate to content, enhancing their display of abilities, and surveying their advancement (Care, Kim, Anderson, & Gustafsson-Wright, 2017). Thus, the utilisation of ICT in the current research, for instance, involves the professional trader's resources including laptops and desktop, smart phones, Wi-Fi, data projector that build up human resources assets towards the teaching and learning of BOCS, the live trading of shares (James, 2013). Moreover, the utilisation of ICT in the teaching and learning of BOCS, the live exchanging of shares, includes the utilisation of organisations, specialist frameworks and man-made reasoning in the electronic trade (Internet business) or electronic business (e-correspondence business) (James, 2013) during this changing climate of the Fourth Industrial Revolution (4IR). It emerges on the previous digital revolution and capitalizes on the synergistic effects of various advanced technologies (Jin & Shin, 2021) which, includes the artificial intelligence, robotics, the internet of things, 3D printing, virtual and augmented reality. Underlying these technologies is the power of digitisation and information technology and that they are empowered and enriched by digital power. For example, advanced robots rely on artificial intelligence, which is powered by computing power. This means that as they

emerge from one stage to the other, they are becoming more sophisticated, intertwined and interdependent on each other. Therefore, the use of these 4IR technologies in the current study is eminent and crucial as the teaching of BOCS, entrepreneurial skills in live share trading cannot be taught and learned theoretical only. The infusion of theory and practice can only be done using these technologies. For example, after the training of learners on how to practically trade shares manually, robotics using artificial intelligence can be used to automatically execute trades in their absentia. In addition, these technologies can also be used by all stakeholders to remotely communicate where, for example, the professional trader may enter anyone's laptop to clarify and/or execute trades using teamviewer remote control. ICT encourages the association between teachers, students and other partners, and upgrades viable capacity, access and recovery of data helpfully in the teaching and learning of BOCS, the live trading of shares.

## 1.3 PROBLEM STATEMENT

Apparently, educators in many countries present critical thinking abilities in a theoretical structure, which is alienated from their application of information in the teaching of BOCS, and the innovative abilities on live share trading utilising ICT. This makes the movement of learned information to true circumstances troublesome (Ikebuaku & Dinbabo, 2018). Not much time is spent on building capacities in gathering translations, exchanging shared significance, and co-developing issue goals. The unrecognised test in expert improvement is helping educators, strategy producers and local communities to forget the convictions, qualities, presumptions, and societies' basic school working practices. For example, brief class periods that do not allocate enough time for practical work to be conducted pose a challenge (Boholano, 2017). ICT applications and portrayals are generally used to robotise conventional techniques for teaching and learning rather than displaying unpredictability and expressing abstract experiences to other people. ICT is likewise, commonly prohibited from testing, as opposed to estimate learners' abilities, to utilise instruments, applications, and media in a positive way (Care et al., 2017).

The high rate of unemployment in South Africa depicts that the education system utilised in the teaching and learning of Business Studies does not match the skills, knowledge and experiences required by the economy of the country. After exiting the school systems, learners are unable to link and/or infuse the knowledge and skills taught in Business Studies

classes with real life situations. This implies that the teaching techniques employed by teachers do not cater for the practical use of entrepreneurial skills and knowledge by learners. The focus is largely on the memorisation of facts for test and examination purposes. The emphasis is on theories rather than a combination of theories and practical with emphasis on skills acquisition (Amuseghan & Olufunmilayo, 2009). Moreover, emphasis is on content and knowledge acquisition using the inquiry-discovery model rather than on the inquiry-discovery-application in the teaching learners to perceive problems (Amuseghan & Olufunmilayo, 2009).

The above contradicts with the CAPS document, which states that Business Studies as a subject should ensure that learners secure formal employment and are able to pursue sustainable entrepreneurial and self-employment career pathways (CAPS, 2011). Furthermore, the CAPS document states that through the teaching and learning of Business Studies, learners should be motivated, self-directed, and reflective lifelong learners who manage themselves and their activities responsibly while working towards business goals, which is not the case (CAPS, 2011). In addition, the use of ICT on the teaching and learning of BOCS is (especially in rural and some location schools) not possible, which makes it difficult for learners to infuse theory and practice in their real life situations. If utilised, ICT applications and representations are largely used to automate traditional methods of teaching and learning, rather than to model complexity and express insights to others. In addition, ICT is also used for memory testing, rather than measuring learners' capacities to use tools, applications, and media effectively (Dede, 2007). Based on the above mentioned challenges, it is important to develop a strategy to teach BOCS using ICT to respond to the challenges to enable the infusion of theory and practice of BOCS in real life situations (lived experience) when learners exit school.

### 1.3.1 Research question

How should practical business opportunities skills be taught using ICT from a real-life situation?

### 1.3.2 Aim and objectives of the study

The aim of the study is to design a real-life strategy to teach business opportunities creation skills using ICT.

The objectives of the study are:

1. To demonstrate and justify the need to design a real-life strategy to teach business opportunities creation skills using ICT.
2. To explore strategies in designing the real-life approach to the teaching of 'business opportunities creation' skills using ICT.
3. To investigate the conditions under which a real-life strategy to teach 'business opportunities creation' skills using ICT could be successfully implemented.
4. To anticipate possible threats that might hinder the successful implementation of a real-life strategy to teach 'business opportunities creation' skills using ICT.
5. To identify the indicators of success or failure for the successful implementation of the real-life strategy to teach 'business opportunities creation' skills using ICT.

### 1.3.3 Rationale of the study

The study plays a significant role in that it presents a real life strategy that attempts to respond to the challenges encountered by both teachers and learners in the teaching of Business Opportunities and Creation Skills (BOCS), and live share trading using ICT. Thus after exiting school, learners are unable to apply the skills and knowledge taught in class because of the teaching techniques and strategies used by teachers. This shows that the education system is unable to produce learners who are able to productively participate in the economic activities of the country. The strategy, therefore, presents an opportunity for learners where after being taught using an innovative strategy are enabled to infuse theory and practice in BOCS, and live share trading using ICT in their real life situations as opposed to the current situation.

## 1.4 THEORETICAL FRAMEWORK

Bricolage, as a theoretical framework and approach, was utilised to couch the study. The idea of bricolage was first presented by Levi-Strauss (1966) as the craft of constructing what is available (Mahlomaholo, 2013a; Aagard, 2009; Scribner, 2005). It permits individuals at the local level to apply known implements and schedules close by in tackling new issues (Ali & Bailur, 2007). A real-life strategy that enables learners to apply problem-solving and communication skills in a real-life situation will be designed in view of the notion that

bricolage research empowers individuals to use the power they have to understand that the answers for the said issues could be resolved locally (Mahlomaholo, 2013a). It implies a process of creating new things from the available resources (Aagard, 2009). The author further posits that institutions are moulded through a process of bricolage whereby individuals in an institution use the ideas and philosophies already existing at work in that institution to transform the institutions (Aagard, 2009). A bricoleur is one who sorts out an assortment of empirical materials applicable to a given circumstance, where "the result of the interpretive bricoleur's work is an unpredictable, quilt-like bricolage, a reflexive composition or montage - a collection of liquid, interconnected pictures and portrayals" (Conway, 2008:26). Kincheloe and McLarens' (2005) idea of bricolage, being a critical ontology where bricoleurs endeavour to comprehend the multifacetedness of nature without falling into the snare of triangulation (Conway, 2008) or reductionism. Further, on the grounds that all physical, social, mental, and instructive elements are associated in a bigger picture (Conway, 2008), it would then be possible for a bricolage researcher to understand, formulate, investigate the conditions, anticipate possible threats and formulate the indicators to the designing of a real-life strategy because bricolage research produce various depictions of an object being researched on, contingent upon the part of the picture being zeroed in on (Conway, 2008). The researcher will also be able to use the available resources to reproduce or recreate a new real-life strategy to teach BOCS, the live share trading using ICT new.

## 1.5 OVERVIEW OF THE LITERATURE REVIEW

The literature under review relate to the good practices of teaching business opportunities creation skills using ICT in order to marry theory and practice, so as to operationalise the objectives of the study. The study reviews literature at local, regional (Southern African Development Community (SADC), continental and global levels. Key concepts that arise as constructs are used in Chapter 4 to interpret the empirical data.

### 1.5.1 Demonstrating and justifying the need to design a strategy to teach BOCS using ICT

The research reveals that the absence of an inter-sectoral and coordinated team denies organisations such as schools, opportunities to learn from multiple skills, competencies,

resources and knowledge possessed by external stakeholders (Dhurup, Surujlal & Kabongo, 2016; Qhosola, 2016). For instance, Business Studies teachers, when teaching BOCS, the entrepreneurial skills on live share trading using ICT, should collaborate with other inter-sectoral stakeholders to stimulate teachers' skills, knowledge and experiences (Qhosola, 2016; ELRC, 2003). In addition, Business Studies teachers do not prepare collaborative planning and preparation that incorporate lengthy and specifically practical teachers' and learners' activities that trigger and provoke their existing knowledge, skills and experiences, as well as the relationship between business studies and other subjects (Matoetoe, 2017; Sithole, 2012; ELRC, 2003). Instead, they usually develop their lesson plans, which follow the rational and static model, as stipulated and obligated in policy documents (Lamb, Ko, Cajkler & Wood, 2016).

Moreover, there is a need for teachers to adapt to Rich Environments and Active Learning (REAL), using ICT. REAL is in-depth instructional frameworks that develop coordinated efforts and cooperative energy among learners and educators; they use dynamic and interdisciplinary generative learning exercises that advance and upgrade higher-order thinking measures that guide students towards creating rich and complex information constructions; and prepare learning techniques by utilising sensible errands and exhibitions that conform to real settings with practical assignments and exhibitions (Aparicio, Bacao & Oliveira, 2016; Robinson, Phillips, Sheffield & Moore, 2015). Furthermore, by using REAL, students obtain abilities that empower them to utilise digital technology and communication tools ( to perform practical tasks (live share trading) in an active learning environment and not media, that deliver information (Martin, 2017; Aparicio *et al*., 2016). REAL enable learners to accumulate and apply the information from computers and other digital devices, like mobile phones to practically solve problems in their real-life situations (Martin, 2017; Aparicio *et al*., 2016) in the Fourth Industrial Revolution (4IR).

Furthermore, the use of a static and standardised assessment compels teachers to teach merely for testing and as 'gaming' the system, which promotes an unhealthy competition among schools and learners (Hoadley & Muller, 2016; Ngendahayo & Askell-Williams, 2016). Teachers do not evaluate learners in authentic ways, but expect them to remember, for example, dates, formulae, algorithms, quotations and whole poems, without teaching them the practical usage of that knowledge (Fox, Pittaway & Uzuegbunam, 2018; Care *et al*., 2017; Aparicio *et al*., 2016). This leaves learners facing difficulty transferring and applying raw knowledge, referred to as 'inert knowledge' to their real-life situations (Fox *et al*., 2018; Care

*et al*., 2017; Aparicio *et al*., 2016). Furthermore, there is a need for continuous and professional teacher development (CPTD); however, Mavhunga and Rollnick (2016) stated that the lack of CPTD is embedded in the fact that the DoE adopted and relied on the cascade and "multiplier" approach or training model when training teachers. This model promotes the conventional way of teacher development, which makes teachers passive receivers of knowledge (Mavhunga & Rollnick, 2016). Teachers confess that irrespective of the thousands of workshops they have attended and as long as the approach has not changed, there would be no change in the classroom (Mavhunga & Rollnick, 2016; du Plessis & Webb, 2012). These challenges necessitate the need to design a strategy that facilitates the teaching of BOCS, the entrepreneurial skills on live share trading using ICT.

### 1.5.2 Determining the components of such strategy

A successful design of a strategy that assists in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT, depends on the establishment of an inter-sectoral and coordinating team. Dhurup *et al.* (2016) assert that teamwork advances a profound learning approach that happens through connection of inter-sectoral stakeholders, critical thinking, exchange of ideas, participation and coordinated efforts. Moreover, Powell (2008) states that the accomplishment of the group emerges just from the rightly coordinated efforts, which advance working together and co-creation with an intricate and extravagant variety of abilities, information and skills. To accomplish that initiative, joint planning and readiness, as shared endeavours of educators in getting ready for their classes, is fundamental (Xiaofeng, Qi & Ling, 2015). Teachers should endeavour to work together with proficient administrations and utilise the relevant resources to consistently guarantee the sufficient help for students (ELRC, 2003).

Additionally, for educators to be able to adapt to REAL, various strategies should be utilised to ensure that, after being taught, learners are able to infuse theory (classroom-acquired knowledge) and practice (skills) that can be implemented in the current 4IR epoch in their real-life situation. For instance, Babson College, which is a leading school for entrepreneurship in the United States of America, makes its classrooms "living laboratories", where all the resources and equipment necessary for the creation of REAL are made available for use in the classroom (DeJaeghere, 2017). This can only be achieved when dynamic and authentic assessments are used where teachers, after attending the continuous and

professional teacher development programme, change from a conventional teaching environment to the application of new skill sets required in a contemporary teaching and learning environment, as well as to adapt to the new "e-assessment" approach (Elliott, 2008). National Education Policy Act 27 of 1996 (NEPA) (this is an ACT from ELRC) expresses the view that instructors ought to comprehend a scope of appraisal approaches and strategies that are consistent with the BOCS and further expresses the notion that they ought to consider the suitability of evaluation choices made during specific learning circumstances (the educating of practical trading) and changing the appraisal assignments and approaches where necessary (ELRC, 2003). To accomplish that task, teachers should engage in CPTD programmes to enhance their knowledge, skills and attitudes with the aim of creating, preserving, evaluating and transmitting knowledge through continuous learning (Nzarirwehi & Atuhumuze, 2019).

### 1.5.3 Exploring the conditions conducive to the successful implementation of the strategy

The successful design and implementation of the strategy that enhances the teaching of BOCS, the entrepreneurship skills on live share trading using ICT, require an inter-sectoral and coordinated team, as well as effective use of REAL. For example, the diverse, dispersed, digital and dynamic (4-D) teams accomplish high performance from the persuasive direction that energises, orients and engages its members with diverse knowledge, views, and perspectives (Haas & Mortensen, 2016). Furthermore, a 4-D team should have a strong structure of high-performing members with balanced skills to optimally design tasks, processes and norms that promote positive dynamics (Haas & Mortensen, 2016). Additionally, ICT-supported learning (REAL) is a significant condition that enhances learners' model of real-life interaction, teaming and communication skills, through global awareness and the model allows learners the opportunity to work with cohorts (peers, mentors and experts) from different backgrounds, cultures and perspectives (Egoeze, Misra, Maskeliūnas, & Damaševičius, 2018; Saidu, Tukur & Adamu, 2014; Dessai & Kulkarni, 2012; Wilson & Stacey, 2003).

### 1.5.4 Identifying the risk factors that might ruin the strategy

Threats that could hamper the successful implementation of the strategy could be the teachers' resistance to adopt the use of REAL and a lack of infrastructure and resources that could be used in the teaching of BOCS, the entrepreneurial skills on live share trading, using ICT. For example, research reveals that teachers' negative attitudes, lack of autonomy, resistance, and lack of expertise, skills and knowledge are factors that prominently impede teachers' readiness and confidence in the evaluation of the role and usage of ICT (Hennessy, Harrison & Wamakote, 2010). Furthermore, scepticism, overcrowded classrooms, a lack of structural administrative support, wasting too much time on planning and teaching, which automatically increases workload and teachers' training effort, cause teachers' reluctance in accepting the effectiveness of computer usage in a bid to improve learning outcomes (Aghaee & Keller, 2016; Hennessy*et al.*, 2010; Tinio, 2003).

### 1.5.5 Demonstrating the indicators of the success of the strategy

There is a need to determine the indicators of success from the best practices which could be used as guidelines, and to identify gaps in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT, in an effort to justify the need for a strategy. The success of this strategy can be seen through improved of scope of content or knowledge, the mastering of live share trading skills and the improved technological content knowledge. Matoetoe (2017) describes the scope of knowledge as diversified, broader and intensified knowledge from different people, which stimulates innovation, deep engagement and a consultative and driven approach by the inter-sectoral stakeholders.. Likewise, teaching trading skills is perceived as successful when teachers are able to teach learners how to analyse trading markets, utilising fundamentals and technical analysis. Therefore, indicators of success are prominent when students are equipped with live share trading skills and knowledge that is imperative for self-fulfilment and meaningful participation in the economy of the country Johannesburg Securities Exchange (JSE), as citizens of a free country (CAPS, 2012).

## 1.6 RESEARCH DESIGN AND METHODOLOGY

This study is based on participatory action research (PAR), which uses bricolage. Rather than merely describing what is happening at research site(s) or explaining it, the study goes on to

design a framework and a strategy that attempt to resolve particular real-life problems at those sites (Mahlomaholo, 2013b). The study therefore adopted participatory action research (PAR) (MacDonald, 2012) as a practical intervention meant to improve the teaching of BOCS using ICT. PAR is a collective enquiry in a social situation and takes action or effects change to improve the rationality and fairness of members' unique social practices (Kemmis, 2008).

A coordinating team was established. It comprised 14 members and consisted of the researcher, and two AET teachers. The researcher participated as an ordinary member of the coordinating team, because the use of bricolage compels one to empower individuals to change society and themselves in manners that are all the more fair and moral (Aagard, 2009). This team was selected because of its high expertise and knowledge in their field of work (see 4.4.4). All members of the coordinating committee, except for the researcher, were employees of Sibilulwazi AET Centre. The coordinating committee was responsible for arranging meetings where members would meet once in two weeks, an arrangement which lasted for a year and setting up venues for workshops and meetings. During workshops its were demonstrating trading to students and the whole team. The co-researchers consisted of two AET teachers, three learners (learner A, B and C) from the grade 12 business studies class / Business Studies subject advisor, two entrepreneurs (a professional trader and farmer), GB, a representative from Newcastle Local Municipality (LED), a representative from Amajuba District Municipality, a representative from Amajuba Department of Economic Development and Tourism, and a representative from NAFCOC and a miner. Some of these co-researchers did not complete the entire project with us as they were informed initially that they were not compelled to stay with the research team should they decide to leave. Those co-researchers attended few meetings then left the project. The centre manager, and the SGB representative (who also represented parents) in particular attended the initial meetings to allow and grant the research team the permission to conduct the research at the centre. The researcher arranged personalised consent forms for each participant to sign during the first meeting (See Appendix C-O). The agenda of the meeting was decided by the co-researchers themselves.

The strengths, weaknesses, opportunities and threats (SWOT) analysis of the team and the identification of priorities to focus on, were determined in the first meeting. The selected team should have a common vision on the priorities to be undertaken. The priorities, such as the following were considered: pedagogical teaching method, content knowledge, type of

assessment, target group and the objective of teaching BOCS using ICT. Each priority was divided into various activities and was then allocated to a responsible person and the timeframe and resources available to enhance the execution of the activity were determined. Meetings for each priority were held, including workshops, seminars and a visit by local entrepreneurs enriched team discussion. Data generation took place during the above-mentioned activities.

## 1.7 DATA ANALYSIS

Data were generated and analysed. Fairclough's (2013) critical discourse analysis (CDA) was employed to analyse the discursive data. Fairclough divides the analysis into three interlinked levels: the level of text (description, linguistics), the level of discursive practice (interpretation, micro-sociology) and the level of social practice (explanation, macro-sociology) (Aghagolzadeh & Bahrami-Khorshid, 2009).

## 1.8 THE VALUE/RATIONALE OF THE STUDY

The study plays the significance role by presenting a real life strategy that attempts to respond to the challenges encountered by both teachers and learners in the teaching of BOCS, especially the live share trading component using ICT. After exiting school, learners are unable to apply the skills and knowledge taught in class due to the teaching techniques and strategies used by teachers. This entails that the education system is unable to produce learners who are able productively participate in the economic activities of the country. The strategy, therefore, presents an opportunity for learners where after being taught using a strategy are enabled to infuse theory and practice in BOCS, the live share trading using ICT in their real life situation as opposed to the current situation.

## 1.9 CHAPTER LAYOUT

Chapter 1: This chapter focuses on the introduction, background, problem statement, research question, aim and objectives of the study.

Chapter 2: This chapter outlines the theoretical framework bricolage which undepins the study. The underlining values of bricolage are discussed to enable the study to respond to research questions, aims and objectives. Furthermore, the chapter discusses the origin of

bricolage with the eight moments of qualitative research to depict how qualitative research was historically done through their origins; objectives; ontology; epistemology; the role of the researcher; the relationship between the researcher and the co-researchers; and the language used. Moreover, the chapter explores the relevance of bricolage as a theoretical framework through its objectives; formats; steps involved; ontology; epistemology; the role of the researcher; the relationship between the researcher and the co-researchers; and the language used.

Chapter 3: This chapter presents the literature review, which discusses the need for the development of the strategy; the components, and conditions conducive for the succsess of the implementation of the strategy. Furthermore, this chapter discusses the risk factors that may ruin the strategy as well as indicators of the success of the strategy.

Chapter 4: This chapter deals with the research design and methodologies utilised in the study. It further discusses the interactions and the action plan, as were directed by the researcher and co-researchers to determine the requirements and mechanism of the plan and finally decide on the conditions that are favourable for the designing of a strategy. This chapter also integrates the theoretical stance and constructs, developed and discussed in Chapter 2, with the empirical data generated. In addition, the chapter examines the origin of PAR as an approach and methodology, objectives, formats and the steps of PAR. Moreover, the ontological and epistemological stance, the role of the researcher when using PAR are discussed. This chapter also explained data that were generated during the planning stage of the team and finally describes Critical Discourse Analysis (CDA) as the method used to analyse data and why it was considered a relevant method.

Chapter 5: This chapter focuses on the data analysis, as well as the presentation and interpretation of the results which determine the designing of a strategy to teach business opportunities creation skills (BOCS) using ICT. This chapter provides the interpretation for each of the five objectives of the study and further divide them (five objectives) into appropriate sub-headings that are chosen and formulated in correspondence to the respective constructs that define the various sub-aspects of the corresponding objectives arrived at in Chapter 2. The empirical evidence is presented in the form of written words, pictures and scenarios and juxtaposed with good practice, theory, research findings, policy, and legislative imperatives using CDA.

Chapter 6: This chapter concludes, summarises and discusses the findings and presents recommendations for future research. This chapter begins with the summary of the study, followed by the objectives of the study. Thereafter, the chapter summarises the findings on the challenges that influenced the designing of a strategy to teach BOCS using ICT. It then reports on the strategies that would eliminate the challenges, the conducive conditions that made them work and the threats that could hinder the successful implementation in relation to the evidence of the envisioned strategy. The chapter then draws conclusions and makes recommendations for the designing of a strategy to teach BOCS using ICT.

Chapter 7: This chapter discusses the conclusions, contributions and implications of the study. The chapter presents a summary of the researcher's personal reflections and theoretical, methodological and practical success and contributions in relation to the study.

## 1.10 CHAPTER SUMMARY

This chapter discussed the background to the study and the problem statement that necessitated the establishment of the real-life strategy to teach BOCS using ICT. It further discussed the research questions, aims and the objectives of the study. The theoretical framework as well as the overview of the literature review, which includes the need for the development of the strategy; the components, conditions conducive for the succsess of the implementation of the strategy was discussed. Furthermore, a literature review was done on the risk factors that may ruin the strategy, indicators of the success of the strategy, research design and methodology and data analysis to be used was discussed. Lastly, the value and/or the rationale of the study and chapter layout of all the chapters was discussed.

# CHAPTER 2
# REVIEWING LITERATURE TOWARDS THE DESIGN OF A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION AND COMMUNICATION TECHNOLOGY

## 2.1 INTRODUCTION

This study developed a strategy designed to teach business opportunities creation skills (BOCS) using information and communication technology (ICT). The investigation sought to develop and use instructional features that assist students to develop natural inspiration, basic reasoning abilities, self-ruling mastering abilities, and information and skills transfer between learning spheres and applications. Transforming theoretical knowledge into practice enables students to understand the concepts and their application in the real-life situations. Therefore, this chapter begins with a discussion of bricolage as a theoretical framework and its underlining values are equally discussed to enable the study to respond to research questions, aims and objectives. The chapter explicitly discusses the origin of bricolage with the eight moments of qualitative research to depict how qualitative research was historically done through their origins; objectives; ontology; epistemology; the role of the researcher; the relationship between the researcher and the co-researchers; and the language used. Moreover, the chapter explores the relevance of bricolage as a theoretical framework through its objectives; formats; steps involved; ontology; epistemology; the role of the researcher; the relationship between the researcher and the co-researchers; and the language used. Finally, the chapter presents the definitions and discussions of operational concepts.

## 2.2 THE THEORETICAL FRAMEWORK: BRICOLAGE

This section certifies the choice of bricolage as a suitable theoretical framework in designing a strategy to be employed in the teaching of BOCS using ICT. To demonstrate the suitability of bricolage, the researcher discusses the historical origin, objectives, formats, ontology, epistemology, the role of the researcher, the relationship between the researcher and the co-researchers, and the rhetoric of bricolage. Lastly, the chapter explains how and why bricolage

is the most suitable theoretical framework to assists the researcher in responding to the objectives of the study.

### 2.2.1 Historical origin of bricolage

The concept of bricolage is derived from a French word, *"bricoler"* that was firstly introduced by the French anthropologist, Claude Lévi-Strauss in the *Savage Mind* (1962) (Campos & Ribeiro, 2016; Rogers, 2012; Given, 2008). Bricolage relates to the random and to the game as an unpredictable, incidental and/or at-random result and is associated with craftwork where various available materials, when recombined and/or applied with new functions and/or other formats, rediscover a new object (Campos & Ribeiro, 2016; Rogers, 2012). Bricolage emanates from the context of scientific research and stems from artistic procedures that, when articulated with the scientific methodological reflections, inspired innovations in social research (Campos & Ribeiro, 2016). It refers to manual labour which, when utilising different available materials, is transformed and recreates new objects in a more modern interpretation. Moreover, when applied scientifically, it presupposes the researcher's use of different theoretical and methodological frameworks, which articulate the research route and allows for the regeneration of new knowledge, thus consolidating the pre-existing knowledge and the articulation and intellectual capacity of the author (Campos & Ribeiro, 2016).

Figure 2.1 shows the conceptual map of bricolage as a research methodology, which presupposes its subject as an active, creative, and reflective bricoleur dominating the research process, and is able to articulate different theoretical frameworks for interpreting the phenomenon under study. In addition, researchers use diverse data collection strategies, creating their own study model in the process.

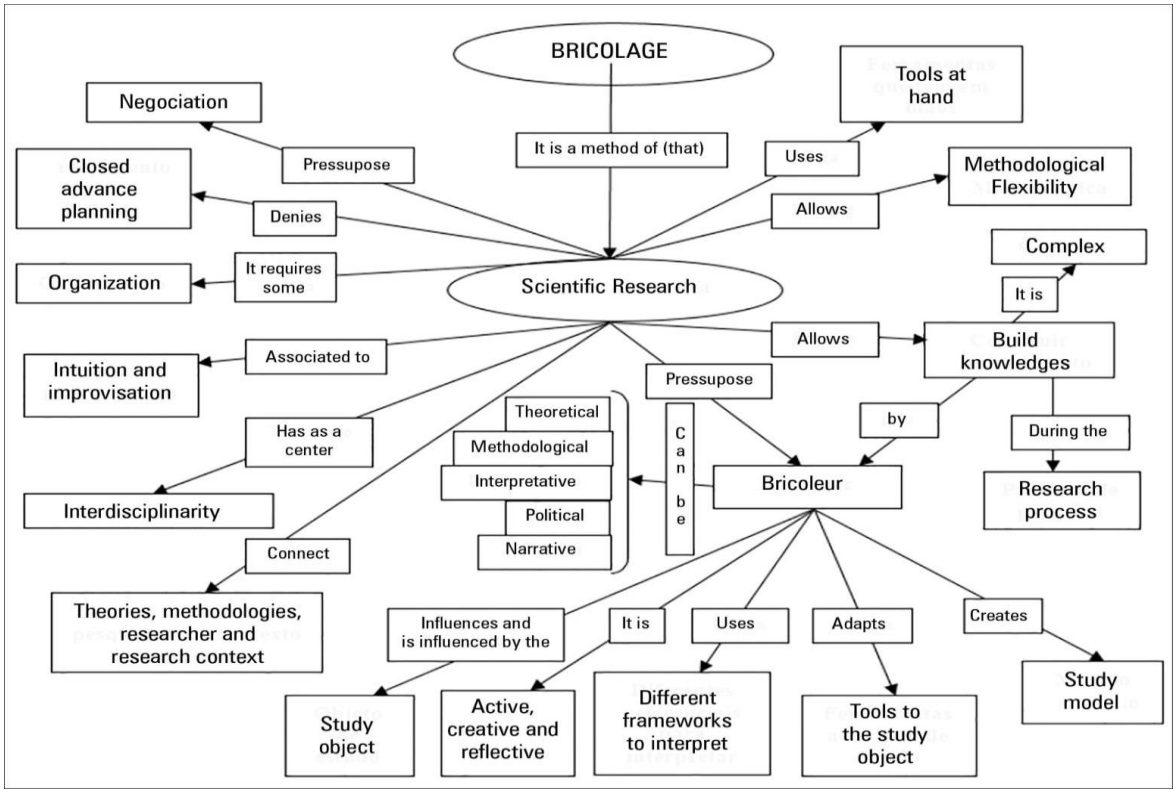


***Figure 2.1: A conceptual map to understand bricolage as a method (Source: De Campos & Ribeiro, 2016)***

In addition, the researchers who use bricolage as a theoretical framework are called bricoleurs. A bricoleur is portrayed as a jack of all trades or handyman/handywoman who utilises the "instruments" accessible to them in accomplishing their assignment. This definition varies depending on the context of the research. For example, Kincheloe (2008c in Paradis, 2013), relates the perspective of the handyperson as representing poor students or teachers in the context of educational research, which is explicitly concerned with the education for the poor. Accordingly, Kincheloe (2008c in Paradis, 2013) affirms that there is a requirement for a thorough, realistic, enabling and ground-breaking training for everybody, particularly the poor, in order to succeed. This means that students living in poverty, below poverty income levels, should make use of whatever tools (resources) they have at hand, irrespective of how inadequate they are. They have to, like handymen or handywomen, incorporate diverse perspectives and be creative in endeavouring to produce something new with what they have at hand, employing a “Do It Yourself” (DIY) approach (Campos & Ribeiro, 2016; Paradis, 2013; Rogers, 2012).

Furthermore, the definition suggests that the “tools”, as described by Paradis (2013), do not necessarily adopt the “mechanistic” metaphoric view of bricolage as that may hinder the

research from producing and recreating something new in the process. That would limit the research as a mechanical metaphor, as an ontological concept resembles a small child's view of the world when complexity begins to be appreciated (Paradis, 2013). This means that, to ensure the complex and multidimensional view of bricolage in the research, the researcher has to utilise whatever "tools" available, be it the *natural*, *human-made* and *human resources* at their disposal. This would ensure that the research that uses bricolage moves towards the natural analyses and synchronicity, enabling the co-creation and reproduction of new things (Paradis, 2013).

Therefore, in the context of the current study, only the *man-made* and *human resources* are utilised where the *human resource tools* that are significant to the achievement of the objectives of the study are a rigorous, pragmatic, empowering, as well as a transformative and collaborative inter-sectorial team. This team consists of Business Studies teachers, learners, a local economic development (LED) manager, business people (professional traders), a Business Studies specialist and a NAFCOC representative who, with their multi-perspectives, multi-dimensional views, diverse skills, knowledge and experience, which represents the so-called "tools" that should be used. Through this collaborative inter-sectorial team, a new set of skills, knowledge of practice and human experimentation, referred to as bricolage that emanates from the multi-faceted personae and departments, emerges (Campos & Ribeiro, 2016).

From this perspective, it should be noted that knowledge creation is linked to intuition, punctuated (interrupted) by the cognoscenti's curiosity of the subject, which results in unsystematic practices. By so doing, the bricoleur researcher considers the reality, connection and different contexts, regarding the investigated object, which leads him to consider the complexity of the approach (Rogers, 2012). The multidimensional reality enables the bricoleur to understand the historical, social, cultural, economic, and political nature of the phenomenon being studied. In addition, desk-top computers and/or laptops, data projectors, newspapers, and so forth, are *man-made tools* used to infuse theory and practice in the teaching of BOCS, the entrepreneurial skills on live share trading. The use of these man-made tools ensures the recreation of the teaching and learning environment from textbook method to REAL thus allowing the mingling of theory and practice in the teaching of BOCS using ICT.

Therefore, engaging in bricolage in the current study is a journey that mingles the inter-sectoral human resources (co-researchers) with multiple and multi-perspectives, skills, knowledge and experiences, with man-made resources in seeking greater understanding and the rediscovering of new teaching methods and strategies in the teaching of BOCS, the entrepreneurial skills on live share trading using UCT. Kincheloe (2008c, in Paradis, 2013) called this "*epistemological road trips*" where the knowledge of the current study is constructed through a combination of the multi-perspectives of the inter-sectoral co-researchers, emanating from various dimensions of life (Given, 2008; Jenlick, 2006). Consequently, the use of both man-made and human resource stools aids in the execution of what is called "*treasure hunts*", which refer to the production of the newly dynamic, re-created and re-transformed types of learners with renewed skills and knowledge to be utilised while they are still in school and also when exiting the school.

In addition, Rogers (2012) stated that bricolage, as a theoretical framework, was adopted by Denzin and Lincoln (1994) and theorised further by Kincheloe (2005) and Berry (2004a; 2004b; 2015) as being a critical, multi-perspectival, multi-theoretical and multi-methodological tool and/or "the assets of bricolage", as elucidated by Mahlomaholo (2013) and Mosia (2016), that unfold over the eight moments of the qualitative research. These are the assets of bricolage that a bricoleur uses when he or she finds it, namely to uncover the complex skills, knowledge and experiences about the object of the study. Furthermore, bricolage is understood to be a metaphor of research that conveys and stitches together various perceptions into coherent and chronological whole stories and further creates and crafts something new by utilising that which is currently available at one's disposal (Mahlomaholo, 2013a; Aagard, 2009; Scribner, 2005).

Therefore, the objective of the study is enshrined in the sequential progression of the eight moments of conducting qualitative research to better explicate on the multi-theoretical positions, multi-methodologies and multi-perspectives of the team, thus including the principles of bricolage. These eight historical moments of qualitative research comprise the theoretical position the researcher took when she sought to interpret the complexity of lived experiences. Each moment captures the way researchers have approached inquiry over time, shared and shaped by the ontological and epistemological stances. These moments are: the traditional period; the modernist phase; blurred genres; crisis of representation; a triple crisis; the post-modern phase; the post-experimental inquiry moment; the methodologically

contested moment and methodological backslash (Denzin & Lincoln, 1994), which the researcher discusses in the following section.

### 2.2.2 The chronological evolution of eight moments of Bricolage

#### *2.2.2.1 First moment: The traditional period (1900–1950)*

The traditional period is started in the mid-1900s and proceeded until World War II (Denzin & Lincoln, 1994; 2005). During this period, sociology and humanities researchers conducted their research using natural scientific approaches where other cultures were studied from the researchers' cultural perspectives (Coffey, Holbrook & Atkinson, 1996). These researchers were taking field notes from observation, making their own conclusions. It was also discovered that qualitative researchers at that moment composed impartial colonising records of field encounters, reflective of the positivist researcher's worldview (Coffey *et al.*, 1996).

In addition, the middle of the 19$^{th}$ century saw the origins of the writings of Auguste Comte, a sociologist who believed that the process of human inquiry or the quest for knowledge production universally undergoes three major and distinct stages. Comte referred to the first stage as the *theological stage*, which represented a primitive stage, as precise knowledge was only obtained through faith and belief (Mahlomaholo, 2013a). The observable empirical data and objects hardly mattered at this stage; hence, it was primitive as evidence of true knowledge, based on the fact that one cannot trust faith and belief because of their subjective nature. Moreover, the theological stage was characterised by the belief that the world is infused with magical, spiritual or theological phenomena (Mahlomaholo, 2013a).

In this phase, which coincided with the beginning of Christianity, intellectual life was based on a whole-hearted belief that all things had reference to God (Mahlomaholo, 2013a). Furthermore, during this phase, the place of human beings in the society and the wider natural world was governed by their association with divine presence (existence or occurrences) and heresies (dissents/deviations) (Bagnall & Hodge, 2018). Societies began to broadly accept the notion of gods, and eventually a single God, thus accepting religious authority from the Church (Bagnall & Hodge, 2018). Reality at this stage was perceived from sacred texts, which were open to various interpretations, which were not fixed and could change at any time (Mahlomaholo, 2013a).

Furthermore, *the metaphysical stage,* as characterised by Comte, emerged where the mode of enquiry was categorised by the method of information creation that happened through pure

philosophical thought (Mahlomaholo, 2013a). Moreover, Comte described the metaphysical stage in the evolution of human thought as one where people seek knowledge of the unifying principles of nature, rather than God. During this period, intellectuals gradually and progressively gained a logical rationalism, which corresponded with a concern that humans have universal rights, as well as certain rights they were born with and cannot be refrained from, which must also be respected (Brown & Baker, 2007). Although Comte perceived the movement from the theological stage to the metaphysical one as an improvement, he further saw the metaphysical stage as being inadequate in asserting the role and power of observation in the production of true knowledge (Mahlomaholo, 2013a). Therefore, for Comte to consider a discipline or a subject scientific, an enquiry should adopt the empirical method in the construction of true knowledge (Mahlomaholo, 2013a). This led to the emergence of the *positive philosophy (stage),* which considered human behaviour as being governed by natural laws called 'Newton's doctrine of gravitation' (Mosia, 2016). Therefore, in the traditional period, positivism as an approach, applied a natural science mode of research to social science research, to investigate social phenomena (Chibuwe, 2017).

Positivists believed that people could be enlightened by science and eventually make the world a better place to stay in (Lune & Berg, 2017). They believed that humans could be better people if they educate themselves, thereby improving their world. Furthermore, during the positivist paradigm, the Enlightenment or the Age of Reason, spirit throve and inspired individuals to move away from trusting in and using myths and superstition to describe regular and social occurrences to that of thinking for them. This was done because positivist thinkers believed that only the objective, observable and verifiable facts of natural and social phenomena should be considered (Lune & Berg, 2017). Additionally, Denscombe (2002) and Gephart (1999) further describe positivism as concerning itself with revealing facts and realities conceived, regarding certain links and relationship among variables (Chibuwe, 2017).

Matoetoe (2017) states that epistemology examines human knowledge and also investigates the nature, methods, origin and limits of human knowledge and how it can be obtained. During the traditional moment, the scientists influenced a kind of research that was regarded as valid and reliable. That certified the generalisation of knowledge created through natural scientific methods as universally "true", which was then followed by the sociology and humanities researchers. The natural scientific approaches dominated and had influence on all the research conducted during the traditional era, which led to every researcher believing that

science held the key to the reconstruction of society, leading to social change (Mosia, 2016). Comte asserted that science is altogether founded on empirical articles or realities that can be noticed through the feeling of perception (Mahlomaholo, 2013a). Positivists stress the importance of perception on empirical and detectable information as the reason for real information. According to Comte, observable objects, which can also be quantified, measured and counted, reveal and/or represent the notion that true knowledge can be produced (Mosia, 2016; Mahlomaholo, 2013a). However, in as far as sociology and humanities are concerned, the scientific approach to research posed risks, threats and weaknesses of objectifying and reducing human beings, their language, culture and background. Thus, the reproduction of universal truths overlooks diverse and complex contexts and "objects" (Mosia, 2016), which means that positivist researchers should focus on one variable at a specific time to enable them to precisely describe what they see. This means that other confounding factors are assumed to be *ceteris paribus* (with other conditions and/or factors remaining the same), enabling them to observe only one variable, without being disturbed by other factors (Mosia, 2016; Mahlomaholo, 2013b).

The significance of the traditional period to the current study is based on the need for social transformation, as one of the principles of the South African curriculum(Business Studies CAPS document). Social transformation has to be practiced in the current study to ensure that the educational imbalances that were caused by the apartheid regime are redressed by ensuring that equal opportunities for education are provided for all sections of the population (DBE, 2011). To understand the underlying epistemological principle of the traditional period where human beings are reduced into objects, it is imperative to note that when the social transformation has occurred, no generalisation, objectification and reduction of the reality in the teaching of BOCS, the entrepreneurial skill on live share trading using ICT, transpire when knowledge is created. The epistemological stance of the positivists enabled the team to realise that the use of standardised test and static assessment was also significant. Before moving to the infusion of theory and practice, learners should be able to store, memorise and reproduce the facts before it can be practically applied in their real life situations. This enabled them to move from the known (facts) to the unknown (the live share trading using the acquired knowledge from the classroom).

Furthermore, to ensure that the knowledge was instilled in learners, Business Studies teachers (co-researchers) gave them standardised and static assessment, which compelled the learners to store, memorise and reproduce information exactly as it is from the textbook. The team

agreed that doing so would make it easy for the learners to transfer the known knowledge to the practical application on live share trading using ICT.

This act of letting learning students move from known to unknow regards the purpose of the South African curriculum (Businesss Studies CAPS document) which seeks to equip learners' intellectual ability by enhancing their knowledge, skills and values, which necessitates their self-fulfilment of being participative and productive citizens of a free country (DBE, 2011). This limits the infusion of theory and practice, which deepens the hybridisation of the skills and knowledge learnt in class and their application and implementation in learners' real-life situations. Therefore, to ensure the social transformation, the traditional moment, in the current study, enabled the researcher to respond to the challenges of teaching BOCS, the entrepreneurial skills on live share trading using ICT. Consequently, this moment allows the researcher to view co-researchers from all the dimensions of life, that is, politically, economically, socially, technologically, legally and environmentally (PESTLE). This empowers the researcher to contribute to the social transformation of the society, where the study is undertaken by responding to the challenges of teaching BOCS; the entrepreneurial skills on live sh

are trading using ICT. In so doing, the society's PESTLE dimensions will entirely be reconstructed and restructured, which will automatically decolonise the remnants of the Apartheid education system.

The system ignored and stifled the provision of a high-ranking education system that would produce highly skilled human capital, which is required by the country in the era of Fourth Industrial Revolution (4IR). It excluded the historically marginalised groups, which particularly included Black teachers in the acquisition of globally competitive skills, through the implementation of a separate and different curriculum for Africans (Blacks, Indians and Coloureds) that were inclined to do manual labour in the twentieth century (Paterson, 2004). Paterson (2004) states that this was obviously expressed and ensured by Dr Roberts of Lovedale, before the South African Native Affairs Commission in 1905:

> *"The brown workman would always have to work under a European and therefore there would be no conflict. The cast of mind of the Native is such that he could rarely take charge. His lack of inventiveness and of ingenuity in mechanical work would make him inferior to the European as a trained workman, and at no time would he compete with the European."*

A critical interpretation of the above statement by Dr Roberts clearly indicates that to avoid competition and conflict between a "brown workman" and a European, a separate and different curriculum had to be implemented. Moreover, in the researcher's perspective, this was deliberately done to curb Blacks from acquiring skills and knowledge through learning (training) that would qualify them to invent any (business) skills, so that they could remain inferior. Amongst the Blacks that were trained during the Apartheid era were Business Studies teachers who were trained to assess the memorisation of facts, hindering the infusion of theory and practice by the learners. For example, the evidence attesting to the remnants of Apartheid still explicitly prevail, as shown by the high rate of unemployment that is being caused by the education system that produces abstract graduates who cannot apply and implement acquired skills and knowledge in their real-life situations. Both the Department of Basic Education and the Department of Higher Education and Training still concentrate on producing the students and students with "high quality" results in spite of being unable to effectively implement acquired skills and knowledge in real-life situations.

Thus, the traditional moment in this study enables the researcher to contribute to the radical and critical reconstruction and democratisation of education and society. This is done by permitting learners, teachers and parents to partake in the identification of, and response to, the challenges inhibiting the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. This accelerates entrepreneurial skills on live share trading, which is required to emancipate and liberate learners in the society. Through this paradigm, the radical and critical reconstruction and democratisation of education and society are reached.

Ontology is described as the study of being, that is, the nature of existence and what constitutes reality (Matoetoe, 2017; Dube, 2016). According to Matoetoe (2017) and Dube (2016), ontology responds to questions such as: "What is the form and nature of reality and what can be known about that reality?" Accordingly, the positivistic ontological viewpoint holds that there is a solitary, unbiased and stable social and physical exterior reality that is being administered by laws (Mosia, 2016; Mahlomaholo, 2013a). The possibility of objectivity implies that reality can be known directly independent of the knower's view and the findings of a research should be reliable and valid across all the contexts (Mahlomaholo, 2013a). Furthermore, according to positivists, reality has order and regularity; it can be observed, measured and thereafter be known, and therefore, the researcher's duty is to discover the laws that govern reality (Coolican, 2018).

In addition, Mahlomaholo (2013b) and Nudzor (2009) state that positivism promotes the establishment of a relationship between the cause and effect (one thing leading to the other), aiming at formulating general laws. This implies that positivists believed that a given reason has similar impacts on all individuals. They do not take into cognisance the results that the person's conduct is additionally founded on social, mental, historical or social settings. They ascribe only to objectivism as they believe in the existence of an outside reality and are not interested in inspecting the unobservable internal motivations of a person's behaviour. Thus, researchers in the traditional moment do not create but investigate the patterns, regularities and universal laws that exist for human actions to obtain an objective reality, as premised by positivism (Mosia, 2016; Nudzor, 2009). This means that researchers in the traditional moment concerned themselves with causal relationships, which enabled them to predict and control the variables (Mosia, 2016). For example, through observation, one of the challenges identified in the current study is the inability by Business Studies teachers to use ICT in teaching BOCS, the entrepreneurial skills on live share trading. From the inadequate training teachers had received, due to the curriculum of the apartheid system, the researcher deduced that this could be the reason why teachers could not use the ICT, which had the same effect on learners' inability to infuse theory and practice (application of the skills and knowledge acquired in class) in their real-life situations.

During an investigation, positivists want to record 'realities' in terms of quantities and additional numbers that can be prepared by using measurable strategies (Coolican, 2018). This is done on the grounds that in part, the analyst in this paradigm aims to decide on valid and reliable casual relationships to enhance objectivity and accuracy. The job of the specialist is to further accentuate quantification when gathering and investigating information. In addition, they need to devise their techniques so that they study reality without bias. When exploring phenomena, positivists are inclined toward the immediate observation, measurement and analyses of data in research facilities where they can handle the conditions or factors and where they can continuously confirm the outcomes to decide the study's dependability. Moreover, specialists at this point value objective and value-free research that is not partial and their ultimate objective is to explore an objective reality with an understanding that reality can be utilised to control nature, people and occasions. They demand a fair portrayal of facts, value accuracy and exceptionally thorough rationality (Coolican, 2018).

Therefore, as the five objectives of the current study have been elucidated in the early chapters, positivism enables the research team to firstly individualise and separately observe, determine, discuss and analyse the facts around each objective, through the senses of perception in the teaching and learning of BOCS using ICT. This allowed and enabled the research team to chronologically and logically follow the pattern that enabled it to determine the causes and effects of the challenges affecting the teaching and learning of BOCS using ICT to support and substantiate what has been revealed and believed as true knowledge from the observable facts (Mahlomaholo, 2013b; Nudzor, 2009). For example, the study cannot start by determining the solutions without establishing the challenges that both teachers and learners are encountering in everyday teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. This means that the researcher and the entire research team, through the practices of the traditional qualitative moment, are able to determine the challenges that, for example, compel teachers to teach BOCS using textbooks only, instead of integrating ICT and collaboratively working with other relevant stakeholders in the teaching and learning environment to ensure the infusion of both theory and practice. The traditional moment of qualitative research further enabled the study to determine the effects experienced by learners, their families, local businesses, the State, as well as any other related stakeholders when teachers only use the textbook method when teaching BOCS . Moreover, the inability of the students to apply and implement the classroom-acquired BOCS, especially the entrepreneurial skills on live share trading using ICT in their real-life situations, during their school tenure and after exiting it, is one of the effects they experienced. This was evidently confirmed by the research team's observations, discussions and analyses during class observations.

During this first moment, the researchers were concerned about contributing substantial, solid and objective versions of data (Onwuegbuzie, Leech & Collins, 2010). To accomplish this task, the researcher should not draw nearer to the subjects (the individuals) with the aim of decreasing the biases the researcher may hold about the investigation's examination object (Mosia, 2016; Mahlomaholo, 2013). The "other" who was examined was an outsider, unfamiliar, and strange where the researchers would have control over the investigated, by composing the colonised conclusion utilising their own culture and in turn leaving the researched exposed, with no personal rights in consideration (Onwuegbuzie *et al*., 2010). Precisely, there has to be no emotional engagements with the subjects (Mahlomaholo, 2013).

Furthermore, the researchers, during this moment, were "lionised" and regarded themselves as the most high, powerful and knowledgeable beings, who would always objectify the researched as subjects. They would go to the research place as "lone ethnographers" to observe and collect data from people that would then be analysed to prove the validity, reliability and impartiality of the findings (Onwuegbuzie *et al.*, 2010). For instance, one of the challenges affecting the teaching of BOCS, the entrepreneurial skills on live share trading using ICT (in the context of the knowledge creation of this moment), is that teachers regard themselves as more knowledgeable and powerful than the learners. In some instances, teachers also regard themselves as more knowledgeable and powerful than other teachers and co-researchers.

However, in the current study, the researcher discarded the positivist view of the researchers "lionising" and distancing themselves from the co-researchers. This was based on the realisation that as the research coordinator, the researcher was just conducting a research on the identified challenges on the teaching of BOCS, the entrepreneurial skills on live share trading using ICT to which she did not have the solutions. This allows teachers and their co-researcher the opportunity to partake in the knowledge production process considering that they are the ones faced with the challenges and the ones with the capability to formulate the solutions and strategies to mitigate the challenges (Mosia, 2016; Mahlomaholo, 2013). As a result, the creation of knowledge by the entire research team democratises and decolonises education in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT, leading to the transformation of the society.

The rhetoric or language used in this moment had to be the researcher's neutral, impersonal and passive voice (Mosia, 2016; Onwuegbuzie *et al.*, 2010). The researcher at this stage would examine the shared patterns of behaviour, language and actions of an intact cultural group in a normal setting; thus, the researcher had to be independent when compiling and interpreting data. The researcher had to follow formal writing styles by utilising the prescribed methods, formulas and measurements for the research findings to be binding, dependable and measurable (Onwuegbuzie *et al.*, 2010). Thus, the traditional moment enabled the researcher to study and investigate the behaviour and actions of both teachers and learners during the class observations to capture the crux of the challenges incurred when trying to integrate theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. For example, this involved determining

whether learners were able to relate and hybridise the knowledge, skills and experience learnt in class with their real-life experiences and circumstances.

Mosia (2016) and Geertz (1988) state that ethnographers used natural laws and generalisations, the fundamental principles of positivism, to experience the chaos caused by the facts emerging from the collected data. They could not find scientific meaning in the data collected during fieldwork and that failure led to the introduction of the second moment, the modernist phase of qualitative research (Mosia, 2016; Geertz, 1988), which is discussed in the following section.

Therefore, the reconstruction and democratisation of education and society has to be done in such a way that it ensures that the multi-voices, multiple perspectives, multifaceted skills, knowledge and experiences of co-researchers hailing from within and outside the education system, when conducting the research, are taken into account and sufficiently utilised as advocated by the principles of bricolage. Consequently, and through this process, part of the vast skills gap between and amongst the racial groups in the country, will be eliminated, leaving the society positively and effectively reconstructed and economically, politically and educationally decolonised, liberalised and democratised. For example, after the co-researchers, especially learners, have been fully trained on live and practical entrepreneurial skills on live share trading during the research process, they will be able to actively participate productively in the economic activities of the country, while they are still in school and when exiting the school, thereby reconstructing, democratising and decolonising the majority of the society through the education system which infuses theory with practice.

### 2.2.3 Second moment: The Modernist or Golden Age period (1950–1970)

The birthplace of this second moment has been periodised contrastingly by different scholars (Hargreaves, 1994). Denzin and Lincoln (1994; 2005) state that this second moment happened between the 1950s and the 1970s, which is said to have happened as a consequence of World War II. Moreover, most scholars find its initiation during the time of Enlightenment or the Age of Reason, whose beliefs attest to the fact that nature can be changed and social advancement accomplished through the deliberate improvement of technological and scientific understanding (thus, the utilisation of ICT enhances the teaching of BOCS) and by its rational application to social and economic life (Hargreaves, 1994). Enlightenment thinkers developed an exceptionally intellectual effort to establish objective sciences,

universal morality and law and autonomous art in accordance with their inner logic. For example, modernity, as Jurgen Habermas and David Harvey (in Hargreaves, 1994) contend, was pursued mostly for social freedom, that is, to lift humanity out of the paternalism, particularism and superstition characteristic of the pre-modern times. These scholars believed that scientific dominance removes scarcity, the need and the arbitrariness of natural calamity and the development of rational forms of social establishments and rational modes of thought that free humans from the irrationalities of myth, religion, superstition and the release of power use to human instincts (Hargreaves, 1994).

During this moment, research was approached with a more extensive focal point than just clinical, laboratory-type research and many texts looked into formalised qualitative techniques. Modernist ethnographers and sociological member spectators endeavoured to undertake thorough qualitative studies of important social processes, including deviance and social control in the classroom and society (Denzin & Lincoln, 2005; 1994). The qualitative researcher's belief in this moment is that research could be used to identify casual variables and to predict people's future behaviour (Mosia, 2016; Lewis, 2009), just like in the traditional period. For example, the modernity moment in the current study, enables the researchers to predict the possible indicators of success where learners would be able to infuse theory (application of entrepreneurial skill on live share trading) and practice (in their real-life situation), if the strategy can be successfully implemented. This creatively pursues social processes and emancipation, in order to apply the accumulated knowledge engendered freely by working individuals to enrich people's daily lives (Hargreaves, 1994).

During this moment, the researcher and the investigated are thought to be autonomous entities, and the researcher ought to be equipped to study the respondents previously called objects in the traditional moment without affecting it or being impacted by it (Mosia, 2016). Interactions among researchers and respondents mat not result in values and biases affecting results, as long as the recommended methods are thoroughly followed (Mosia, 2016; Denzin & Lincoln, 2011; Guba & Lincoln, 1994).

Creswell (2003) states that during this historical moment, graduate students in the human disciplines encountered new interpretive theories. The current study used the interpretive qualitative research methodology, as it considered the characteristics expounded by Creswell (2003). According to the author, interpretive qualitative research happens in a natural setting,

permitting the researcher to be exceptionally associated with the actual experiences of the co-researchers, using various interactive and humanistic methods (Creswell, 2003).

Furthermore, an interpretive research is emergent rather than tightly prefigured, which means that a researcher may collect data with a new research question adjusted according to the newly surfaced information that may then be interpreted by the researcher (Creswell, 2003). For example, the researcher fully participated and involved all co-researchers in the actual experiences of the teaching and learning of BOCS, the entrepreneurial skills using ICT. The researcher used multiple data collection methods, which included individual and group interviews, observations, as well as workshops, to enhance the interactive and humanistic nature of interpretive qualitative research.

In addition, the current study ensures that data are collected simultaneously while the research evolves avoiding the premeditated results by the researcher as well as to allow the infusion of the current and new information acquired. This guarantees and etches the participative, agreeable and synergistic nature of the interpretive subjective examination in the educating and learning of BOCS, the innovative abilities on live share trading utilising ICT. Interpretive analysts accept that social life is a distinctively human product and assert that reality is not objectively decided; however, it is socially built (Kobus, 2007). Consequently, the innovator stage empowers me to allow the members to find the power they possess and the perceptions they have of their own events. The uniqueness of a specific situation (context) is critical to comprehending and deciphering the constructed meanings.

As indicated by Creswell (2014), post-positivists hold a deterministic form of philosophy where causes decide on impacts or results. The problems studied by post-positivists mirror the need to identify and assess the causes that influence outcomes, such as those found in analyses (Creswell, 2014). Besides, post-positivists additionally hold the reductionistic philosophy with the purpose of reducing thoughts into a small, discrete set to test, for example, the factors that include hypothesis and research questions. Therefore, the deterministic viewpoint of the modernity phase enables this study to holistically identify and determine the challenges that hinder students from integrating the acquired in-class knowledge and skills with their real-life situation in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT (Rabby, Chimhundu, & Hassan, 2021) In addition, after the identification of challenges faced by teachers and learners, the reductionist views enable the researcher to balkanise and reduce each challenge that teachers

encounter, considering that they emanate from diverse historical, educational, social, political and economic backgrounds.

Therefore, a bricoleur, together with the team utilising both the deterministic and reductionist viewpoints, aids the researchers to collaboratively and holistically analyse and diagnose the challenges facing teachers in accessing and using multiple theories, tools and perspectives to achieve the objectives of the study in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. For example, the researcher used the modern field research tools, such as focus-group interviews, one-on-one interviews and action research where meetings, workshops and observations were utilised to ensure interactive relationships and the sharing of everyday knowledge, experiences and views amongst learners, parents, teachers, business people, Business Studies teachers, education specialists and other co-researchers (Nor-Aishah, Ahmad, & Thurasamy, 2020). Thus, using the bricolage lens enables the study to provide new knowledge, insights, ideas and practices, originating and brought together from the current, complex and diverse skills, knowledge and experiences of the co-researchers to jointly construct and design the new and dynamic strategy of teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. This ensures the fulfilment of social justice, inclusiveness, as well as diversity, as the elements of bricolage in designing the strategy.

The ontological position of the current moment is that reality is multiple, subjective and mentally developed by individuals (Kobus, 2007). For the post-positivists researcher, reality is certainly not a fixed element, but a production of the people engaged in the research. These researchers are forewarned that the developed reality does not exist in a vacuum, but is affected by a context of culture, gender, and so forth. Moreover, Hargreaves (1994) avers that secondary schools in a modernity phase neglect the obligation of meeting worldwide competitiveness because of economic difficulties. According to him, secondary schools are big and complex entities with the bureaucratic structures, which are mismatched with the dynamic and fluctuating needs of the post-modern world (Hargreaves, 1994). The post-modern world requires numerous and more relevant, as well as an engaging learning and teaching environment. Moreover, the post-modern world needs constant and connected professional development, and for a more adaptable and inclusive decision-making schooling system (Hargreaves, 1994; Yu, & Wang, 2021).

Therefore, in this study, the modernist moment enabled the researcher to understand that the challenges of teaching and learning BOCS, the entrepreneurial skills on live share trading, emanate from the fact that secondary schools are large and complex and emanate from PESTLE dimensions. This fosters an understanding of the notion that large and complex schools lead to overcrowded classrooms, which makes it difficult for teachers to infuse theory and practice. Hence, learners are unable to apply the skills and knowledge learned in class to their real-life situations. This affects, for instance, the social aspect of learners who, after schooling, remain stuck with 'quality' results, which cannot be practically implemented in their real-life world, needed for the post-modern world.

Therefore, this moment enables the researcher to understand that the challenges encountered and the possible solutions or strategies to be formulated in the teaching and learning of BOCS using ICT are known by the teachers and learners, as the reality is genuinely known by them from their social and classroom contexts. Interpretive theories also allowed the researcher to realise that it is teachers, learners and parents, with greater opportunity to understand the types of business skills that are needed in their vicinity for their own activities. It is therefore imperative to involve them as co-researchers in the designing of a strategy that enhances the teaching and learning of BOCS using ICT, to enhance the business skills required in the society. Furthermore, a bricoleur recognises that reality is constructed from the multi-voices and multi-perspectives of various co-researchers, which is advocated by the current study.

The work in the modernist period covered itself in the language and rhetoric of the positivist and post-positivist discourse (Given, 2008).

### 2.2.4 Third moment: The blurred genres

With the beginning of the third stage or blurred genres, which occurred from 1970 to 1986, qualitative researchers had a full supplement of paradigms, techniques, and methodologies to utilise in their research (Onwuegbuzie *et al.*, 2010; Denzin & Lincoln, 1994; 2005). These paradigms, technique and methodologies incorporate symbolic interactionism, constructivism, naturalistic inquiry, positivism and post-positivism, phenomenology, ethnomethodology, pragmatism critical theory, neo-Marxism, semiotics, structuralism, feminism, and various racial or ethnic paradigms (Denzin & Lincoln, 2005). For example, taking a stance of a pragmatist perspective in the current study, we view the entrepreneurial journey (where learners are introduced to live share trading ) as a process of change-oriented

inquiry directed at reconstructing an existing state of affairs (learners' inability to apply the classroom acquired theoretical knowledge), into a desired one (entrepreneurial skill on live share trading) (Sergeeva, Bhardwaj, & Dimov, 2021; Zellweger & Zenger, 2021). In addition, viewing from the pragmatist conception of truth, pragmatism permits us to circumvent perennial insoluble questions of the impractical usage of theoretical share content knowledge by shifting the focus to practical consequences of beliefs (practical live share trading) by learners (Sergeeva *et al*, 2021; Zellweger & Zenger, 2021).

Moreover, from the pragmatist perspective, all human activity in the context of complexity and unknowability can be considered as such (Sergeeva *et al*, 2021). Shifting focus to the practical consequences of beliefs means that the relevant question for an entrepreneur is not whether her belief about the existence of an opportunity is right or wrong, but whether her acting upon the world in pursuit of "opportunity" brings about the desired difference (Sergeeva *et al*, 2021).

In the spirit of pragmatism, design-science approach studies emphasize the importance of experiential learning and the problem-solving nature of entrepreneurial action, focus on feedback loops and relational processes, and appreciate the irreducible complexity of the world that entrepreneurs navigate (Sergeeva *et al*, 2021). Indeed, pragmatism is a "problem-solving philosophy" and is particularly well-suited for studying how to organise "in the face of complexity" (Sergeeva *et al*, 2021). In the context of the current study, pragmatism permitted the team to utilise the experiential learning and problem-solving nature of entrepreneurial action to let learners experience the infusion of theory and practice of live share trading using ICT.

Furthermore, pragmatists' entrepreneurial reasoning is that after the identification of an opportunity, entrepreneurs are confronted with multiple challenges of charting a course of action that would lead to the desired results. Such actionable dimensions, among others, can be market desirability, financial viability, and technical feasibility. Similarly, in the context of the study, the actionable dimensions would be the market analysis, financial viability (although in our case, learners used their pockect money, social grants and their profits) as the buying of shares do not compel one to have the huge sum of money. Other actionable actions could be the technical dimension part of trading where learners are compelled to understand the technical and fundamental news before trading.

In addition Zellweger and Zenger (2021) and Berry (2015) stated that during the blurred genres moment, the politics of research, originating from quantitative and qualitative research, still prevails at all cultural, societal and institutional levels of research. In spite of the reality encapsulated in this moment, bricoleurs are capable of using the various data collection methods, previously used by traditional and modernist researchers and currently by blurred genres researchers to construct and implement new knowledge. The use of bricolage as the theoretical framework enables the researcher to determine the potential causes of challenges preventing students from putting the theory of business skills into practice, thus, implementing the classroom-acquired skills and knowledge in real-life world experiences of BOCS using ICT from a diversity of perspectives.

Krauss (2005) states that qualitative researchers at this point in time do not assume that there is a solitary unitary reality separated from individuals' perceptions. This is because of the various ways in which every individual encounters reality from their own perspective, thus, different or multiple realities are established. He further expresses the notion that qualitative research depends on a relativistic, constructivist ontology that suggests that there is no objective reality, but numerous realities built by people who experience a phenomenon of interest. Krauss (2005) further states that scientists subscribing to this paradigm recognise that they need to take an interest in real-life world to somewhat more readily comprehend and communicate its developing properties and features. As a bricoleur, the researcher construed students' difficulties from their historical dynamics that have informed their lives (Kincheloe, 2005). For instance, a bricoleur, through the theoretical lens of constructivists, accepts that students strive to comprehend and learn from the world in which they live (Creswell, 2014). Students create subjective meanings of their encounters and directed the meanings towards specific objects or things.

These implications are varied and multiple, driving the researcher to search for a complexity of perspectives, instead of narrowing it down into a couple of categories or concepts (Creswell, 2014). Krauss (2005) further expresses the view that individuals force order on the perceived world, with an end goal of building meaning. Meaning lies in cognition, not in elements external to individuals: information imposing on individuals' cognitive system is screened, translated, changed, and perhaps rejected by the knowledge that already exists in that system; the resultant knowledge is idiosyncratic and is purposefully constructed. Thus, bricoleurs using the multiplicity, complexity, and multi-voiced elements of bricolage are able to infuse learner's skills, knowledge, attitudes and experiences built from the real world they

live in, to identify possible solutions to the challenges they encounter through the use of the traditional method of teaching BOCS using ICT software, knowing that the solution to the problem is best known by the learners, parents, business people and the community in which they live.

Krauss (2005) states that from the naturalists' or constructivists' view, information is established through the meanings attached to the phenomena being studied, which implies that researchers solicit data through connecting with the subjects of the study. Inquiry changes both the researcher and the subject; and knowledge is context-driven and time-dependent. Notably, the method of questioning in the blurred genres moment becomes expansive and general so that the co-researchers can construct the meaning of a situation through conversations or interactions with different people (Creswell, 2014). These methods are open-ended, quasi-structured, observational, visual, individual encounters, and documentary (Denzin & Lincoln, 2005). Utilising all these different methods to determine the density of the challenges and reasons why teachers themselves still use technology in a traditionally orientated manner, could help determine the strategy and intervention needed. Using the bricolage lens aids in deepening the interactions and discussions between and amongst students and learners, as well as teachers and learners, considering their historical, social and cultural norms, to explicitly unpack the complexity of teachers' inability to integrate ICT with the content of BOCS.

### 2.2.5 Fourth moment: The crisis of representation

The fourth moment of qualitative research spanned between 1986 and 1990 (Denzin & Lincoln, 2005). During this moment, the Critical Theory, the Feminist Theory and epistemology, questioned the matters of gender, race and class (Mosia, 2016; Onwuegbuzie *et al.*, 2010; Denzin & Lincoln, 2005). Due to the blurred genres or the third moment, which promoted the fluid borrowing of ideas and methods across different disciplines, a general paradigmatic style of organising research materialised. This led to the suspension of the grand theories in favour of localised, contextual meaning of social life, as experienced by those who were involved in it (Mosia, 2016).

The triple crisis of representation, legitimation and praxis arose during this moment, and the crisis of representation was experienced by the social science (Mosia, 2016; Denzin & Lincoln, 2005). This crisis was noticed when the qualitative researchers of the day could not

find ways of writing the research reports capturing the experiences of those studied. They differed on whose context the research report had to be presented and whether it was for the researched or the researcher (Mosia, 2016; Denzin & Lincoln, 2005). There were uncertainties on the creation of direct linkages between the experiences of the researched and the text reporting on it. This crisis helped the researcher realise the importance of writing the research report that explicitly alludes to and represents the experiences (challenges) that are encountered by teachers and students in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT.

Moreover, a legitimation crisis was created, which was concerned with validity and reliability of the qualitative research. This was as a result of the researchers analysing and interpreting data from their own context, while excluding the researched (Mosia, 2016; Denzin & Lincoln, 2005). Thus, this moment enabled the researcher to analyse and interpret data, which was generated together with the co-researchers during the research and was conducted utilising CDA in a textual, discourse and social practice through the Free Attitude Interview. This ensures the validity and the reliability of the research report, as the analysis and the interpretation is done from the data that were gathered together with the co-researchers from the beginning until the end of the research, which enhanced the legitimacy of the research.

Furthermore, the representation and legitimation crisis led to a praxis crisis where, in this moment, the experiences of the studied were firstly represented in the context of the researcher and it was discovered that there were no methods of authenticating or verifying the truthfulness of the research report. Mosia (2016) and Denzin and Lincoln (2005) assert that this led to the question: How can people's lives be impacted by the kind of research that only exists in the research report text? Therefore, the praxis crisis, in this moment, enabled the researcher to consider the multiple voices and perspectives of the inter-sectoral co-researchers, arising from the various PESTLE backgrounds to ensure that the research report is utilised by them to recognise the challenges encountered, as well as formulating the solutions to, for example, the problem inhibiting the development of teaching methods that would enable students to practically use the classroom-acquired skills and knowledge when they exit school and in their real world experiences. This ensures that people's (co-researchers') lived experiences are positively and practically impacted by the research, for example, when students are practically trading live on shares using ICT which, in this sense, removes the praxis crisis. Following is a discussion of the fifth moment, following the crises which occurred during the fourth moment.

### 2.2.6 Fifth moment: The post-modern period (1990–1995)

The post-modern period, which is the fifth historical moment, started around 1990 and lasted until around 1995 (Mosia, 2016; Denzin & Lincoln, 2005). The evolution of this moment ushered in the hope of eliminating the triple crisis that transpired from the crisis of representation that manifested in the fourth moment of qualitative research. Before indulging in the discussion of the fifth moment, it is imperative to firstly differentiate between post-modernism and post-modernity, as described by Hargreaves (1994), to help the reader comprehend the distinction between these two concepts. Hargreaves (1994:38) asserts that "post-modernism is an aesthetic, cultural and intellectual phenomenon. It encompasses a particular set of styles, practices and cultural forms in art, literature, music, architecture, philosophy and broader intellectual discourses – pastiche, collage, deconstruction, absence of linearity, mixture of periods and styles and the like". He further defines post-modernity as a social condition that comprises particular patterns of social, economic, political and cultural relations. Hargreaves (1994) states that post-modernism forms part of the broader phenomenon, a consequence and an effect of the post-modernity paradigm. However, for this study, the two terms are used interchangeably, as they are closely related to each other.

The post-modern theoretical position shifted both the ontological and epistemological stance, in the sense that it rejected the existence of foundational human knowledge and understanding on rational discovery, through a scientific method. This is so because no knowable social reality, truth and reason exist beyond the signs of language, image and discourse, as narratives or storytelling stemming from different contexts (Mosia, 2016; Denzin & Lincoln, 2005; Hargreaves, 1994). Instead, the postmodern researcher deconstructs forms of social reality and gives the voice to other versions, which are sometimes neglected and suppressed. Further, a critical pragmatism, one of the post-modern theories, chooses the reality versions of voices, based on the pragmatic grounds of what social and political interests will best be served by those voices, but not by searching the truth or complete knowledge, since they cannot be determined (Hargreaves, 1994). This comes from the fact that the critical pragmatic point of view and the interpretations it generates, are guided by the political and ethical principles, which requires that justice, fairness and equity be realised, though not by intellectual principles, which involve a search for truth or understanding (Hargreaves, 1994).

Moreover, post-modernists asserted that all knowledge on reality bears the characteristic of human culture, personality and biology, which cannot be isolated from what a particular group of individuals or culture would call knowledge (Kobus, 2007). Therefore, there cannot be objective, final, fixed, or universal truth; neither can there be an eternal foundation of truth or a method of determining the validity and reliability of the quality of research, as done in the traditional moment of qualitative research, which has been prohibited (by positivists who believe that the knowledge/ truth/ outcome of the research should be valid and reliable) (Kobus, 2007).

For instance, Hargreaves (1994) cautions that schools must be understood within the context of a post-modern world that is experiencing rapid and radical changes. This shows that schools are entrenched within the ever-changing and demanding political, economic and social contexts that are to be considered in the teaching, learning and assessment activities of the school. Further, Hargreaves (1994) is troubled about the social phenomenon where teachers in schools always teach as if ideas are always constant and unchanging. He asserted that the rules of the world are always changing; hence, the rules of teaching ought to change in accordance with such changes (Hargreaves, 1994). Therefore, the current study, which is conducted within the context of the post-modern world, where schools experience rapid and radical changes, seeks to identify the challenges that hinder Business Studies teachers from using teaching methods applicable to BOCS, the entrepreneurial skills on live share trading using ICT, thus helping students infuse theory with practice. Further, the study strives to formulate strategies of assessment which, as required by the DBE, confirm that students obtain and apply significant business knowledge, skills and principles, which empowers them to productively and profitably establish and conduct business in changing business environments (DBE, 2011). This relates to the current fast-changing post-modern world, the Fourth Industrial Revolution (4IR) regime. For example, from the social and economic contexts, learners should be familiar with the entrepreneurial skills on live share trading, which enables them to buy and sell shares while they are still in school and when exiting the school, thus making the profit. . Socially, learners' lives would be enriched and the contemporary socio-economic issues like poverty, unemployment, et cetera, would be eliminated, which would automatically boost a country's economy.

Consequently, this study is beached on the multifaceted, ontological and epistemological stance that holds that all knowledge or reality in designing the strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT, is constructed from the co-researchers'

diverse cultural, (economic and political) conditions, considering that reality is dependent on cultural, (economical and political) (take note of the repetition) conditions and the changes that take place over time differ from community to community (Kobus, 2007). These ontological and epistemological realities and knowledge are constructed from the narratives (extracts) of the co-researchers and are strengthened by the teams' working sessions (workshops, observations, interviews, etcetera.). This study, therefore, ensures the multi-perspective, multi-methodological and multi-layered approach to knowledge development as captured in the eight moments of qualitative research. The knowledge development approach used in the post-modern moment led to the post-experimental inquiry moment, which is debated in the next section.

### 2.2.7 Sixth moment: The post-experimental inquiry period (1995–2000)

The sixth moment or the post-experimental inquiry occurred between 1995 and 2000. This moment was characterised by high levels of excitement, with new publishing choices for qualitative scholars, which included research documented as poetry, novels capturing lived experiences, autobiographies and multi-voiced representation (Mosia, 2016; Denzin & Lincoln, 2005). Furthermore, the moment encouraged new ways of communication between qualitative researchers that did not make a strong distinction, but promoted a strong blurring between social science and the humanities (Mosia, 2016; Given, 2008). Researchers started to write about the necessity of a free democratic society and social justice (Mosia, 2016; Given; 2008; Denzin & Lincoln, 2005), which involved a fluid borrowing of ideas, tools and approaches between the disciplines (Denzin, 2010).

In the current study, in trying to detect the challenges affecting the teaching and assessment methods to be used in the teaching of BOCS, the entrepreneurial skills on live share trading, the researchers borrowed ideas, tools and approaches from other disciplines. For example, Business Studies, and BOCS, the entrepreneurial skills on live share trading in particular, cannot be taught in isolation; other related disciplines like Economics and Accounting should be infused. As part of assessment, for instance, students should be equipped with skills and knowledge on how markets are analysed using PESTLE analysis tools, which overlaps with Economics before they can successfully finish the trade. The current study intends to bring excitement, democracy and social justice to students as, if the intended strategy be effectively implemented, they (learners) would become productive citizens who participate in the

economic activities of their country, particularly the Johannesburg Securities Exchange (JSE), from which the South African economy emanates. This ensures that social justice prevails for the majority of the South African community, as the strategy seeks to practically expose students to live share trading entrepreneurial skills acquired theoretically from the Business Studies classroom. Furthermore, Mosia (2016) states that the sixth moment raised awareness in terms of the need for social scientific research that stimulates both rigour and praxis. The problems relating to the evaluation of the enquiries encountered in this moment led to the seventh moment, which is discussed in the following section.

### 2.2.8 Seventh moment: The methodologically contested present (2000–2004)

This historical moment of qualitative research happened from roughly within the period 2000-2004 (Mosia, 2016; Given, 2008; Denzin, 2001). This is a time of ferment (excitement) and explosion that is characterised by breaks from the past, an emphasis on previously hushed voices, a return to performance texts, and a concern with moral discourses, critical dialogues on democracy, race, gender, class, country, freedom and the community (Mosia, 2016; Denzin, 2001). During this period, it is stated that interpretive qualitative research helped change the world in a positive manner, which required an assessment of better approaches to making the acts of critical qualitative inquiry vital to the functions of a free democratic society (Denzin, 2001). The current study intends to unlock the period of ferment (excitement), particularly to the learners, by enabling them to establish their businesses (live share trading accounts) while they are still in school and when they have exited the school. This would be the evidence of success, and one of the objectives of the study involves proposing a strategy that could be adopted to successfully teach BOCS, the entrepreneurial skills on live share trading using ICT. Ownership of “businesses” by learners ceases the hurdle between genders, races, physical ability or intellectual ability, nations and communities, by equipping them with the knowledge, skills and values necessary for their self-fulfilment (DBE, 2011; Denzin, 2001). Furthermore, the current study, through imparting entrepreneurial skills, intends to give freedom and voice to the previously marginalised and silenced groups by allowing them meaningful involvement in the society as economically productive citizens of a free democratic society or country (DBE, 2011; Denzin, 2001) during the 4IR regime.

In addition, this historical moment also enables the researcher to take a political bricoleur's stance, which states that knowledge and power are connected and that science is power, for all research findings have political implications (Freathy, Doney, Freathy, Walshe & Teece, 2017; Rogers, 2012; Denzin & Lincoln, 1999). This allowed the researcher to respond to the challenges facing the misrepresented group, the marginalised learners, as well as teachers. Bricolage, as a qualitative research, enables researchers to reveal the historical, political and social construction of knowledge and the importance of teaching BOCS, the entrepreneurial skills on live share trading using ICT. Moreover, the format of a political bricoleur's lens allowed and helped the researcher to formulate the strategies and/or solutions to define the teaching techniques and strategies that teachers could utilise to produce BOCS's knowledge, using ICT that profits marginalised learners from rural areas. This gives them an opportunity to partake meaningfully in economic activities for self-fulfilment, thus allowing them to be economically productively and partake in a free democratic society (DBE, 2011) and emancipate them from the mechanisms of capitalist and White social structures (Freathy *et al*., 2017; Rogers, 2012). Thus, it addresses the principles of bricolage of equity and social justice, related to representation of the foresaid group (Kellner & Share, 2007). By so doing, the current study aimed to depower the scientific ways of constructing knowledge, used in the scientific research through the democratisation and decolonisation of the education system, thus enhancing learners' ability to trade shares practically, infusing theory with practice in the teaching of BOCS.

Also, Denzin (2010) contends that a properly conceptualised qualitative research becomes a public, participatory, and collaborative project, an undertaking that combines the researcher with the researched in an on-going moral dialogue, which forms a participatory action research. Thus, in the current study, the seventh moment assists the researcher to work with the co-researchers, considering their multiple experiences, knowledge and skills during the on-going moral dialogue, in determining teaching methods that would effectively infuse theory and practice when teaching BOCS, the entrepreneurial skills on live share trading using ICT. It should be noted that during the discussion (on-going moral dialogue) with the co-researchers, there were other businesses from the agricultural sector (farmers) when the decision to (research) BOCS, the entrepreneurial skills on live share trading using ICT, was taken. This was done to ensure transparency, democracy and social inclusion; hence the researcher avoided the imposition of ideas to co-researchers, but maintained the role of a co-ordinator and not a dictator in the research project.

Furthermore, this historical moment allowed the researcher to realise what Kellner and Share (2007) argue to be a student-centred, bottom-up approach in the collaborative inquiry that supports each learner's own culture, knowledge, and experiences, ensuring that other co-researchers do not undermine and undervalue learners as minors, but value and recognise them, allowing them to voice their discoveries in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. Moreover, Kellner and Share (2007) maintain that the methodologically contested moment involves a multi-perspective, critical inquiry approach that addresses issues of class, race, gender, sexuality and power, as encouraged by PAR. For example, the current study does not categorise the co-researchers, based on their historical, social, political and cultural background, but involves both co-researchers from rural areas, who are always and generally perceived as primitive, and from urban areas, who are perceived as better and modernised by the positivists in the first traditional moment of qualitative research. It also involves both males and females and ensures that both genders are included. This guarantees that knowledge and skills required for the creation of business opportunities for students who are currently in the classroom are crafted, stitched and achieved from complex and diverse perspectives of co-researchers, thus enabling learners to apply and implement them in their real-life world after exiting the school.

The methodologically contested moment further warns the researcher that media and ICT (Kellner & Share, 2007) can be utilised as tools for empowering the marginalised or misrepresented learners in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. This further ensures learners are cognisant of the prediction of the PESTLE situation (environment), as it always positively and negatively affects the entrepreneurial skills, the live share trading using ICT.

### 2.2.9 Eighth moment: The fractured future, which is now (2005–)

The eighth moment is represented by the present and the fractured future. The moment started between late 2004 and early 2005 and spanned to the present day. The researchers from this moment utilised multiple methodologies, pluralism of theories and multiple data generation tools when conducting their studies, making sure that various findings are obtained from complex and diverse social audiences (Mosia, 2016; Denzin & Lincoln, 2005).

The fractured future moment began to blend both sociologies and humanities leading to basic conversations about democracy, race, gender, class, nation-states, globalisation, freedom and

community (Mosia, 2016; Denzin & Lincoln, 2005). For instance, Denzin and Lincoln (2005) contend that in the fractured future moment, the new participatory, feminist and democratic values of interpretive qualitative research dictate a democratic, reciprocal, and reciprocating stance, rather than an objective and objectifying one. This includes a moral obligation on the part of the qualitative researchers, as well as their responsibility and obligation to co-researchers, and themselves as qualitative field-workers (Denzin & Lincoln, 2005). Thus, in the current study, the eighth moment encouraged the researcher to abandon using a single method of conducting a study where the researcher becomes the most knowledgeable being, taking the co-researchers as objects towards a teamwork approach where the challenges, possible solutions, conducive conditions, plausible threats and indicators of success are collaboratively identified by the researcher, a bricoleur, together with the co-researchers, in designing a strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT.

Mahlomaholo (2013) states that the fractured futures clearly signify that bricolage ensures that all stakeholders bring their own theories and appropriate participatory methodologies that allow the collection of various data, utilising different methods, like interviews, minutes of meetings, pictures, workshops and observation, considering various languages, cultural and historical backgrounds to accommodate multiple voices, which are occasionally complex and contradictory in designing a strategy that could be used to teach BOCS using ICT. This is done to ensure that the democratic values of the interpretive qualitative research stance of being democratic, reciprocal and reciprocating, rather than being objective and objectifying, are authentically practiced by all stakeholders (Mahlomaholo, 2013a; Denzin & Lincoln, 2005). The following section presents the formats of bricolage.

## 2.3 FORMATS OF BRICOLAGE

Bricolage takes five formats, which are interpretive, political, methodological, theoretical and narrative bricoleurs (Rogers, 2012). These formats are discussed individually and the way they strengthened the study and became lenses through which to interrogate the teaching of BOCS using ICT are also explained.

### 2.3.1 Interpretive bricoleur

Interpretive bricoleurs, as stated by Rogers (2012), are tasked to reflexively piece together their research, which means that they have to be thoughtful and be so consciously self-aware that when scrutinising an object of inquiry, they also have to examine how their positioning affects their processes. Thus, they have to recognise that knowledge is never free from subjective positioning or political interpretations when implementing post-positivist epistemologies (Freathy *et al*., 2017; Rogers, 2012). Therefore, interpretive bricoleurs, when collecting data, comprehend that they have to shift from a target that is refined through segregated examination of what they know and how they know it, to recognising how "they", as a team, actively construct their knowledge. Furthermore, they should interpret the object of the enquiry from multiple vantage points to reflexively add depth and plurality to the research process (Freathy *et al*., 2017; Rogers, 2012).

Therefore, interpretive bricoleurs' lenses help us investigate and recognise the challenges confronting teachers in the application and integration of ICT with the content of BOCS during the teaching and learning process. It further helps in the discovery and development of strategies that enhance the skills needed in the application and integration of ICT with the content of BOCS and conditions that make such strategies work; this involves the discovery of threats to, and indicators of, the successes of these strategies moulded by our very own set of experiences, memoirs, sexual orientation, social class, race and nationality and by those of instructors and students to which the investigation is directed (Freathy*et al.,* 2017; Rogers, 2012).

### 2.3.2 Political bricoleur

Political bricoleurs are clarified as researchers who are knowledgeable about how knowledge and power are connected and are aware that science is power for all research findings and has political implications (Rogers, 2012; Denzin & Lincoln, 1999). Kincheloe (2005b), as cited in Rogers (2012), asserts that to ensure confrontation with a difference, bricoleurs should create more democratic space and new forms of knowledge production by embracing subjugated knowledge that informs policy decisions and political action in general. Therefore, in their research praxis, political bricoleurs should interrupt the broader social structures, discourses and institutions responsible for the imbalances and inequitable social conditions, to develop an awareness of power and embrace subjugated knowledge in the society (Rogers, 2012).

The aim of the political bricoleur is to create knowledge that benefits the individuals who are disenfranchised by the taken-for-granted daily workings, of neoliberal capitalist and White social structures (Freathy *et al*., 2017; Rogers, 2012). The utilisation of the political bricoleur's lens enables the research team to draw on a collection of inquiry methods and strategies to understand the roots of challenges in the teaching of BOCS using ICT and assist them to interact within and negotiate the politics of education (Jenlick, 2006).

### 2.3.3 Methodological bricoleur

Freathy *et al*. (2017) and Rogers (2012) describe methodological bricoleurs as researchers that accomplish a meaning-making task by combining and utilising multiple research tools, allowing them to engage in fluid, eclectic, and creative approaches to inquiry. The methodological bricolage is an approach that explores power networks and broad ideological perspectives utilised within the context of an inquiry, thus allowing for a deep, rich, yet fluid analysis which is more than just an eclectic approach. Furthermore, Rogers (2012) asserts that methodological bricoleur allows and respects the complexity of the meaning-making process, which allows for contextual contingencies in dictating the data-gathering and analysis methods and tools and means "at hand", which ensure that their knowledge and work are accomplished. This means that, making use of the aesthetic and material tools of his or her craft, the qualitative researcher as a methodological bricoleur could make use of whatever strategies, methods and empirical materials at hand to ensure the multiplicity and complexity of the results of the inquiry (Rogers, 2012).

For example, the current study utilised participatory action research (PAR) where one-on-one interviews, meetings, workshops and observations are used followed by critical discourse analysis (CDA) where generated data are analysed textually, socially and discursively to develop a more complex portrait of a phenomenon (Freathy *et al*., 2017; Rogers, 2012). In addition, with an aptness of creativity, methodological bricoleur artistically combines theories, techniques and methods that allow for multidimensional contexts to dictate which questions get asked, and interpretive perspectives to use when needed (Freathy *et al*., 2017; Rogers, 2012). Methodological bricolage helps researchers to get down to the crux of the research problem utilising, making and observing multidisciplinary research strategies of data collection and analysis (Kincheloe, 2005), such as ethnography, textual analysis, semiotics, hermeneutics, psychoanalysis, phenomenology, historiography, discourse analysis in

combintion with philosophical analysis, literary analysis, aesthetic criticism, and theatrical and dramatic ways of observing and making meaning.

### 2.3.4 Theoretical bricoleur

Theoretical bricolage evolved from the blurred genres, the third historical moment of qualitative research. Denzin and Lincoln (1999), as cited in Rogers (2012), assert that theoretical bricoleurs work through and between multiple theoretical paradigms, which means that they read widely, which therefore allows them to become knowledgeable about the many interpretive paradigms, such as feminism, Marxism, cultural studies, constructivism and the Queer Theory. Theoretical bricoleurs may achieve multiple readings from different, sometimes conflicting, perspectives on an artefact, text or phenomenon, allowing them to comprehend the various theoretical contexts in which an object can be interpreted. This provides the theoretical bricoleur with a multi-perspectival or post-structuralist perspective that shows the plurality of complexities, which has an effect on a phenomenon thus adding depth, rigour and multiplicity to the issue (Freathy *et al*., 2017; Rogers, 2012).

### 2.3.5 Narrative bricoluer

Rogers (2012) and Denzin and Lincoln (1999) state that narrative bricoleurs appreciate that an inquiry is a representation (that is, it is a narrative). This is so because objective reality can never be "captured", as research texts can only represent certain interpretations of a phenomenon as they are always positioned from specific contextual perspectives. Furthermore, the gendered, narrative bricoleur recognises the notion that all researchers tell stories about the world they have studied, whereas scientists tell their narratives or stories as coached and framed within a certain and specific storytelling tradition or paradigm (for example, positivism, post-positivism, constructivism, etcetera) (Freathy *et al*., 2017; Rogers, 2012). Contrary to scientists, narrative bricoleurs appreciate how ideologies and discourses shape the way in which knowledge is produced and they strive to understand their influence on research processes and texts. In addition, narrative bricoleurs avoid univocal research representation by ensuring that they draw their techniques from multiple perspectives, voices, and sources (Freathy *et al*., 2017; Rogers, 2012). Rather than assuming a univocal positioning in the current study, the researcher used the narrative bricolage approach to employ the

multiple, complex and fragmented voices to achieve the objectives of the study. For example, the study's complex narrative representations are drawn from the multiple perspectives and voices of the experienced co-researchers that are practically involved in the teaching and learning of BOCS, the entrepreneurship skills on live share trading using ICT. Furthermore, the complex narrative employed in this study is derived from the interviews, workshops, observation, research journals and scholarly literature which enabled the researcher to present a bricolage of ideas that pertain to the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT.

### 2.3.6 Critical bricoleur

Rogers (2012) stated that Kincheloe's critical bricoleurs confirm that they dismantle the positivist hegemony in research, which unknowingly supports oppressive, marginalising and violent social conditions. Moreover, critical bricoleurs should permeate critical hermeneutics, knowledge and political action in all bricolage projects. Critical hermeneutics, the interpretive process used to explore how power tacitly forms phenomena, texts, knowledge and subjects, warn critical bricoleurs of the various ways in which power helps to construct the social, cultural and economic conditions under which meaning is made. Bricoleurs utilise this process to decide and understand the historical and social ways in which power operates, thus shaping meaning and its lived results.

Furthermore, critical bricoleurs make sure that they question, learn and strive for knowledge of the "silenced" and the "excluded", who represent groups like "the learners" where knowledge is constructed and controlled by the elite in spaces like schools. Foucault, Bertani, Ewald, and Macey (2003 as cited in Rogers, 2012), conceptualised knowledge of the silenced and excluded, as subjugated knowledge, a series of knowledge that has been disqualified as non-conceptual, insufficiently elaborated, naïve, and hierarchically inferior knowledge that is below the required level of erudition or scientificity. Critical bricoleurs, therefore, politically disturb and eliminate the control of the elite and authoritative control group over knowledge production to better understand both the forces of domination that affect the lives of individuals from racial, class, gender, sexual, ethnic and religious backgrounds of dominant culture(s) and the worldviews of such diverse people to contribute to the social transformation (Rogers, 2012). In this way, the bricoleur challenges the difference, which enables them to produce new forms of knowledge that notify policy decisions and political

action in general (Rogers, 2012). This is done by drawing from a variety of critical theories, such as feminism, Marxism and post-colonialism. Thus, it explores the taken-for-granted ways in which power shapes knowledge and objects of inquiry. For example, as a critical bricoleur, to disrupt and remove the control of the elite and authoritative control group over knowledge production in the current study, the objectives of the present study were acknowledged by the research team. To ensure the multiplicity, complexity and the criticality of the inquiry, the knowledge, experiences and skills of both the internal stakeholders, for instance, students and teachers, as well as the external stakeholders, for instance, business people, are taken into cognisance to achieve the objectives of the study. Rogers (2012) assets that this is done to better understand both the forces of domination that affect the lives of individuals from race, class, gender, sexual, ethnic, and religious backgrounds of dominant culture(s) and the worldviews of such diverse people to contribute to the social transformation occurring in the teaching and learning of BOCS, the entrepreneurship skills on live share trading using ICT.

## 2.4 THE ONTOLOGICAL POSITION OF BRICOLAGE

Bricolage acts against positivistic ontology, which states that there is only one objective reality (Kincheloe, 2005). Furthermore, Conway (2008) recognises the thought of bricolage as basically metaphysical, where bricoleurs endeavour to comprehend the multifaceted nature of reality without falling into the trap of triangulation or reductionism. Thus, bricolage ensures that all physical, social, mental, and instructive elements are associated in a 'bigger texture' and produce various portrayals of an object of request, contingent upon what part of the 'texture' researchers have zeroed in on (Conway, 2008). Also, the bricolage approach states that the idea of the truth is not outside people’s impression, be they specialists or members; henceforth, it is significant that their perspectives, voices, and data sources should guide the investigation from start to finish (Mahlomaholo, 2013a; 2013b).

In addition, Kincheloe (2005b as cited in Rogers, 2012), posits that the object of the research is ontologically complex, which means that it cannot be described as an encapsulated entity. Bricoleurs, therefore, ontologically examine how socio-historical dynamics influence and shape the object of inquiry. Furthermore, Mahlomaholo (2013a) asserts that bricolage, as a theoretical approach, ensures that a democratic and honest real-life situation is created, promoted, advanced and enhanced to accommodate the entire group of co-researchers

originating from various backgrounds. He further states that these real-life settings should not be predictable, uni-linear, and monolithic, and cannot be evaluated where all-inclusive laws cannot be planned, where the result of the exploration (study) cannot be appraised as dependable, level-headed, undisputable and repeatable, as positivism would contend (Mahlomaholo, 2013a; 2013b).

Therefore, bricolage permitted the research team to acknowledge the multiple realities and multiple interpretations cited by multiple and relevant stakeholders in detecting the challenges impeding the designing of a strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT, as well as finding suitable answers, determining favourable conditions, identifying the plausible threats and determining the indicators of victory and/or failures in designing such a strategy. This ensures and allows co-researchers, as human beings, to join and freely fuel the power they possess in the process of converting and creating knowledge in the real-life situation strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT.

## 2.5 THE EPISTEMOLOGICAL POSITION OF BRICOLAGE

In his pursuance of knowledge construction using his structuralist analysis, Lévi-Strauss (1966) conceptualised bricoleur as a kind of researcher who understands knowledge as being created through different modes of orientation towards the world (Rogers, 2012; Given, 2008; Jenlick, 2006). He dubbed these meaning-making processes “intellectual bricolage” utilised by mythical-knowers who piece and bring together their life-experiences and history with artefacts, like texts, discourses and social practices, happening in a cultural context to construct meaning (Rogers, 2012). This means meaning-making bricoleurs do not have approaches, procedures, plans, methods, tools, or a checklist of criteria of knowledge-construction like the engineers, but they use their flexible, fluid, and open-ended processes that qualify them to be adept at performing vast and diverse tasks (Rogers, 2012). Furthermore, the mythical-meaning making bricoleurs use whatever materials they have at hand, for instance, knowledge, skills and experiences in mind, repertoires like rituals, observation, and social practices with whatever artefacts available in their given context, namely discourses, institutions and dominant knowledge to create and replicate new knowledge.

For instance, Lévi-Strauss, 1962 described how indigenous people (primitive) lived and utilised their resources and artefacts and civilised ways of knowing, as both of them are equally shaped by their ontological view of the world (Houtbeckers, 2013; Duymedjian & Rüling, 2010). He did not regard the indigenous people's ways of thinking as inferior and those of the civilised as superior, respectively. According to Lévi-Strauss (1966), these individuals did not approach logical devices to empower themselves to obtain information, yet they collected their own information with the myths, legends and superstitions to construe the world in which they lived (Houtbeckers, 2013; Duymedjian & Rüling, 2010).

Mahlomaholo (2013), who builds on the work of Wibberley (2012), maintains that bricolage's epistemological stance argues that truth is not a single aspect. It is characterised by intimate knowledge and versatility (Houtbeckers, 2013). Thus, the epistemology of bricolage is created through discussions that are taking place between and among individuals from the examination group or the epistemic local area, relying upon the most impressive debate that has been cooperatively sorted out by all, and not on the status of the specialists or potential members (Mahlomaholo, 2013a; 2013b).

Therefore, using the bricolage's lens ensured that knowledge production in designing the strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT, is created from the critical, multi-layered, multi-perspectival and multi-methodological dimensions of all the team members. This ensures that multiple and various skills, knowledge and experiences emanating from and within different historical, social, economic, political, cultural, technological and educational backgrounds of the team are productively and effectively used to identify challenges, formulate strategies, investigate the conditions, anticipate possible threats and identify possible indicators to effectively and efficiently design a tactic to teach BOCS, which are the entrepreneurial skills on live share trading using ICT.

Furthermore, this ensures that all the co-researchers' multi-voices are heard and recognised from the first until the final layer of the research team's meetings, discussions, debates, observations and presentations where they share each others' experiences and support one another. This helped the researcher to ensure that the marginalised and silenced indigenous knowledge group is considered to achieve the aims of the study (Jenlick, 2006). It made the researcher to direct the exploration of oppressed familiarities, which the researcher can bend through an assortment of talks to weave a multi-intelligent, hypothetical and experimental embroidered artwork (Jenlick, 2006). Moreover, Ali and Bailur (2007) assert that bricolage

aids and allows researchers and co-researchers at the local level to apply and utilise the known and available tools and routines available at their disposal in the context to recreate new knowledge or to solve new problems. This allows local people to realise the power they have to acknowledge and work with the contradictions and complexities to govern and weave a complex text of solutions to the identified problems in the teaching and learning of BOCS, the entrepreneurial skills on share trading using ICT (Mahlomaholo, 2013a; 2013b).

The bricolage's epistemology ensures that the insights gained and the knowledge produced move the researcher and the co-researchers to new levels of epistemological and ontological awareness (Jenlick, 2006). Eventually, this ensures that the truthfulness of knowledge depends on its usefulness and is assessed in terms of the extent to which it advances the agenda of equity, social justice, freedom, peace and hope (Mahlomaholo, 2013a). Therefore, the use of bricolage, as the current study's theoretical approach, determined to be relevant for change and transformation in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT, ensuring that students are able to infuse theory and practice in their real-life or world situations.

## 2.6 THE ROLE OF THE BRICOLEUR

The researcher's role in this study is to 'bring the world into play' by coordinating a team of co-researchers that are relevant in designing a real-life strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT. Rogers (2012) argues that this ought to be done to upset and incapacitate the uneven characters of force, social treachery, underestimation and mistreatment effected through the customary significance-making rehearses. This guarantees that the researchers are consistently aware of the organised cycles that make race, sex and class harsh in day-by-day life (Jenlick, 2006). In this manner, the researcher guaranteed that as a group, the research team, by and large, cooperatively tackles essentially complex difficulties and issues, illuminate choices, build answers to recognised issues, and make information impartial, as fundamentally inspect information (market analysis before the execution of trade) in relation to its utilisation, points to the accomplishment of the objectives set out under the target of the examination (Jenlick, 2006). This is done to guarantee that there is consistently 'solidarity in variety', as the researcher sees herself as a co-analyst, since she does not have answers to the difficulties experienced by teachers and students in the teaching and learning of BOCS, the enterprising abilities on live

share trading utilising ICT. Therefore, the use of bricolage lenses ensures that the researcher meets and suits the demand of the dynamic and ever-changing PESTLE environment for learners, teachers, the community and the country at large, thus achieving the objectives of the study.

## 2.7 THE RELATIONSHIP BETWEEN THE BRICOLEUR AND THE CO-RESEARCHERS

This study is in line with the objectives of bricolage, which values co-researchers as being equal to researcher. Kobus (2007) states that bricolage, as qualitative research, acknowledges an interactive relationship between the researcher and co-researchers and between co-researchers and their own experiences and how they have created reality, based on those encounters. Bricolage research urges the researcher to regard co-researchers as natural beings and not as items. Denzin and Lincoln (1999) have declared that to add to social change, bricoleurs strive to better comprehend both the powers of control that influence the lives of people from racial, class, gender, sexual, ethnic and religious backgrounds outside dominant culture(s) and the perspectives of such diverse people groups. Therefore, to perfectly practice that, the researcher was a co-researcher, the same as other co-researchers and did not conduct the research to have power over this study, as the researcher very often has no knowledge of the problem from an informed perspective of the research. The aspect of epistemological multiplicity, complexity and diversity, grounded from the eighth moments of qualitative research, enforce us to remove knowledge production and its benefits from the control of elite groups by ensuring that the society and the co-researchers are collaboratively involved in knowledge production.

Mahlomaholo (2013) states that, as a co-researcher, the researcher should be ethical and professional in their practice of knowledge production, demonstrating the ability to identify, address and manage emerging ethical issues and to advance the process of ethical decision-making. According to him, this means knowing precisely the power the researcher would have in the traditional moment; hence, the researcher should be cautious and depower himself or herself when interacting with the co-researchers and other people in the community who are less privileged than him or her. This guarantees that these co-researchers freely participate in the creation of knowledge in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT, knowing that they are fully respected and are not taken as research

'subjects' (Mahlomaholo, 2013a; 2013b). Moreover, this further creates and brings psychological and emotional unity between the researcher and co-researchers and that builds trust, humility and mutual respect, which are achieved through openness in communication (Qhosola, 2016). Bricolage affirms that the research team works collaboratively, negotiating and communicating the strengths, weaknesses, opportunities and threats, after the objectives of the study have been identified in designing a strategy that enhances the teaching of BOCS, the entrepreneurial skills on live share trading using ICT.

## 2.8 RHETORIC: THE LANGUAGE USED IN BRICOLAGE

The researchers considered the objectives of bricolage as the theoretical framework used for the study to ensure the research is conducted smoothly. The study reflects on the voices of all stakeholders and their divergences in terms of their historical, cultural and social backgrounds (Kincheloe, 2005) when detecting the challenges affecting the teaching and learning of BOCS using ICT. By using the bricolage lens, the study affirms the multiplicity of voices in all spheres of the study, in this manner deconstructing the solid perspective on the predominant and standard methodology where the voices and interests of poor people and marginalised students, instructors and networks are prohibited against the more impressive groups (Kincheloe, 2005). The researchers expanded the zone of activity by remembering different analysts and members for distinguishing difficulties, detailing systems and thinking about all the goals of the investigation in planning a methodology to show BOCS, the enterprising abilities on live share trading utilising ICT.

To guarantee power, social equity, empowerment and freedom as principles of bricolage, the researchers ensured that the other co-researchers do not only remain on the periphery, but become accomplished co-researchers who even determine the whole agenda of achieving the objectives of the study, for the identification of the challenges, formulation of strategies, anticipation of possible threats and formulation of indicators for the successful designing of the real-life strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT (Kincheloe, 2005). The rationale for doing this is to allow the multiplicity of voices thus ensuring a better explanation of the study in a communicative and participatory action approach. Using the bricolage lens enables the researchers to improvise and make use of different resource repertoires at hand (Kincheloe, 2005) like the skills, knowledge and

experiences of the researcher and co-researchers, ensuring that learners are able to impart the theory and practice in their real-life world.

## 2.9 THE PRINCIPLES/OBJECTIVES (ASSETS) OF BRICOLAGE

One of the objectives of bricolage, as an approach, is **multidimensional** because of it being closer to real-life situations. Claude Levi Strauss (1962) as discussed above, had the notion of a handyman when conceptualising bricolage; because he did not have the tools and instruments required, he used whatever was at his disposal for the production of products (Mahlomaholo, 2013b; Kincheloe, 2005). Bricoleurs' greatest contributions are that they reuse leftover materials to respond to new questions and they do not only speak to the rejected materials but also speak through them to recreate, retransform and reproduce new life, new meaning and new understanding. Moreover, some of the greatest assets (principles) of bricolage are that it is **multi-perspectival, multi-layered, multi-vocal, multi-methodological, multi-theoretical and multi-disciplinary,** which are used in the resolution of the identified problem under given conditions (Mahlomaholo, 2013b; Kincheloe, 2005). Bricoleurs realise that bits of knowledge transformed into answers to the issues facing the global community and its people, rests on variety (Kincheloe, 2005). Occasionally, bricoleurs utilise opposing hypotheses to accomplish their objectives and further blend and stitch assorted points of view together into a sound and consistent story, ensuring that the best goal is achieved (Mahlomaholo, 2013a; 2013a; Kincheloe, 2005). Bricolage, likewise, thrives on complexity, which reflects the untidiness of real-life circumstances. Mahlomaholo (2013) stated that science makes something from nothing, as it is action-orientated and hands-on. Kincheloe (2005) further reveals that amazing things can happen when unconsidered points of view and versions of the surrounding world are experienced. Indeed, when things are seen differently and new connections are developed between already unconnected phenomena, individuals' sense of who they are undergoes a process of transformation.

Because of the differences being encountered, the researcher felt it convenient for the research team to understand the need to formulate a strategy that could be applied in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. The team then takes the knowledge developed in the context of difference and synergy as researchers and runs it through the filter of a literacy of power. Such an act helps disclose the interests (of both the researchers and co-researchers) and particular knowledge, which will serve, as well

as expose, the interests complicit with knowledge production (Kincheloe, 2005). To further illustrate the importance of the usage of bricolage in the current study, the principles and processes of "social bricolage", in relation to the teaching of BOCS, the entrepreneurial skills on live share trading, is discussed in the following table. This is because education (the teaching of BOCS) is a critical social aspect that aims to enhance the entrepreneurial skills and knowledge of learners, as required in the current 4IR regime.

***Table 2.1: A conceptual framework of social bricolage in the context of social entrepreneurship***

| **Proposed principles and processes of social bricolage** | | **Explanation** |
|---|---|---|
| **1** | *Making do with limited resources available and creating something new from nothing for a social end:*<br>The limited resources in the current study are represented by the limited resources, such as school books and an data projector, as well as a desktop computer that are available at school. However, utilising the bricolage lens enabled the researcher to realise the need to utilise the available stakeholders such as business people, the local economic development (LED) manager, NAFCOC, as well as the Business Studies specialist to infuse theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. Bricolage enables the researcher to use the "hidden" or untapped local resources, which are the external stakeholders who have the resources, such as resourceful venues that can be useful in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. These resources have never been recognised or thought of by any person, whether internally at schools or externally in the district and in the community. Being a bricoleur enabled the researcher to know that schools do not operate in isolation, but form part of the entire society. This requires them (schools) to produce the workforce that will be able to serve them. | Combination of resources/making do with the limited resources at hand:<br>• Making something new from nothing; for example, creating a new market or providing a new service where none existed beforehand. The current study intends to create and recreate the type of students that are able to apply and implement the entrepreneurial skills and knowledge in their real-life situations while they are still in school and when they have exited the school. This involves the creation of a new type of workforce (learners) as determined in the labour "market". The only difference with the type of workforce that will be produced in the current study is that they will not wait for being employed in the mainstream labour market, but will be running their own "businesses" (live share trading accounts);<br>• Using disposed of, neglected, or undesirable assets for new purposes;<br>• Utilising "covered-up" or undiscovered nearby assets that different associations neglect to perceive or utilise. The hidden or untapped local resources in the current study refer to other stakeholders (LED manager, professional traders, etcetera), as well as their resources, like the professional business structure and its resources that |

| | | |
|---|---|---|
| | | existed, but have never been used in the teaching and learning situations before. Therefore, the use of the social bricolage in the current study aimed at tapping into the hidden and untapped local resources to recreate things (knowledgeable and skilled entrepreneurs); |
| **2** | *Refusal to be obliged by limitations imposed by pervading environmental constraints in pursuit of a social goal for social objective:* The research team in the current study refused to be constrained by the limits of the textbooks; classroom and the school boarders, in order to enable students to infuse theory and practice. This was done by teaching BOCS, the entrepreneurial skills on live share trading using ICT, thereby fulfilling the social goal of letting students become entrepreneurs while they are still in school and after exiting the school system. | • Refusing to be constrained by restrictions (textbooks and classrooms only) by trying out solutions as tactical responses to pervading institutional structures/rules;<br>• Subverting the limitations imposed by available resource environments, particularly in their ability to create social value. The current study aimed at stretching out to the external stakeholders and their resources; |
| **3** | *Improvisation to enable active pursuit of social goals:*<br>The current investigation expects to extemporize through "best-fit" approaches inside the requirements of the restricted assets accessible to guarantee the mixture of hypotheses and practice. | • Improvising through "best-fit" approaches inside the limitations of the restricted resources that are accessible;<br>• The process of trial and error; |
| **4** | *Creation of social value:*<br>Social value in the current study is created when the proposed strategy of teaching BOCS, the entrepreneurial skill on live share trading using ICT, is successful. The strategy fuels the entrepreneurial live | • Creating business opportunities, work incorporation, skills development, training and development, social capital, and community cohesion; |

| | | |
|---|---|---|
| | share trading skills and knowledge where students practically apply to their real-life situation, what they have theoretically learnt in the classroom. In this way, learners, who comprise the social capital of the country, are equipped with the current and significant skills required during the current 4IR epoch. Consequently, the strategy also promotes community unity where internal and external stakeholders collaboratively work together to ensure the mingling of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. | |
| **5** | *Stakeholder participation:* Stakeholder participation in the current study occurs when external stakeholders like business people (professional trader), NAFCOC representation, the local economic development (LED) manager from the municipality and the internal stakeholders from the Department of Education, like Business Studies teachers, students and the Business Studies subject specialist mingle to ensure the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. | • Governance structures and decision-making, board membership, strategy determination (hence the design of the real-life situation strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT), and implementation; |
| **6** | *Persuasion of other significant actors:* (LED manager, professional trader, NAFCOC representative, Business Studies specialist), to leverage on acquisition of new resources and support | • Persuading other actors within the resource environment of the business case for social value creation. |

**Source: Di Domenico *et al.* (2010)**

## 2.10 SIGNIFICANCE OF BRICOLAGE TO THE STUDY

In this section I discuss the suitability of utilising bricolage as a theoretical framework relevant to this study. Bricolage, as a theoretical framework, helps researchers to achieve the goal of designing a real-life-situation strategy of teaching BOCS using ICT software. Bricolage helped the researcher to recognise and investigate the difficulties looked upon by the two instructors and students in the teaching and learning of BOCS, the pioneering abilities and information utilising ICT. One's intellectual improvement as a specialist using the bricolage would consequently look for distinction in various authentic, social, mental, philosophical, political, financial and instructive settings (Jenlick, 2006). The bricolage approach adds thoroughness, expansiveness, intricacy, lavishness and understanding to the current investigation (Rogers, 2012).

Bricolage enables the researchers to compare multi-voices of learners, teachers and other external stakeholders emanating from diverse political, economic, social, technological, legal and environmental aspects of life to achieve the objectives of the study. Through the use of bricolage, bricoleurs consider the previously subjugated knowledge of the historically marginalised groups in the meaning-making with regard to why teachers and students experience challenges in the teaching and learning of BOCS using ICT. Further, bricoleurs understand that the challenges facing teachers using, for example, static and standardised assessments and textbook methods in the teaching of BOCS, the entrepreneurial skills on live share trading, originate from the training experiences the teachers have undergone. Thus, bricoleurs understand that in order to respond to those challenges, there is a need to develop a strategy that is not one-dimensional, linear, monological, hierarchical, empirical and applicable to structuralist forms (Mosia, 2016; Rogers, 2012; Kincheloe, 2011). Bricoleurs understand the need to adopt a critical, multi-perspectival, multi-theoretical and multi-methodological strategy (Mosia, 2016; Mahlomaholo, 2013a; Rogers 2012) that seeks to make meaning of the complexity of live experiences linked to the phenomena being studied (Mosia, 2016; Mahlomaholo, 2013a; Rogers, 2012; Kincheloe, 2011).

The epistemological and ontological stance of bricolage assumes that the physical, social, psychological, cultural and educational domains comprise the interaction of a multitude of factors that seek various ways of uncovering contextual factors in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT (Mosia, 2016; Kincheloe, 2005). This enables researchers to bring together diverse learners, teachers and the community members,

keeping in mind their traditions for the purpose of producing a synergistic conversation between them (Jenlick, 2006). Also, a bricoleur understands that the solution to their problems lies within both the internal and external stakeholders themselves as community members (Mahlomaholo, 2013a; 2013b). Therefore, the use of bricolage enabled the team of researchers to embrace the multiplicity of epistemological and political dimensions through their enquiry (Rogers, 2012). Rogers (2012) further expresses the view that methodological approaches based on multiplicity, when utilising bricolage, not only provide unique prospects for knowledge construction, but also create opportunities for informed political action.

Bricolage builds a sound relationship in its contemplation of trust, a caring attitude, humility, cohesion and oneness. The language of respect is used for other co-researchers to feel being part of the research thus promoting equity, equality, solidarity, oneness, humanity and unity (Masondo, 2017). Moreover, Baker and Nelson (2005) assert that bricolage is connected to value creation rather than value appropriation (Houtbeckers, 2013). In this instance, the value in the proposed strategy of teaching BOCS is created when students obtain the highest pass percentage, in conjunction with the entrepreneurial skills on live share trading using ICT. Furthermore, as bricolage includes the processes of creating things with whatever one has, it enables students to utilise the applications they have on their smart phones, as well as other "hidden or untapped local resources" from local stakeholders (Houtbeckers, 2013). Thus, students are able to find entrepreneurial skills on live share trading to make money with the resources they have at their disposal while in school or upon exiting the school. By so doing, value is created when students are actively and practically participating educationally, economically, socially and politically in the country's productive activities. On the other side, value appropriation in this context occurs when students obtain excellent and high quality results that could allow some of them to obtain degrees from universities. Value appropriation further occurs when both students who obtained good results, but could not get the opportunity to go to tertiary institutions and those who had already obtained their degrees could produce their own employment opportunities.

## 2.11 DEFINITION AND DISCUSSION OF OPERATIONAL CONCEPTS

In order to understand the concepts and develop constructs using the study, it is significant for the researcher to define and discuss the following operational concepts:

### 2.11.1 Real-life situation strategy (RLSS)

The Oxford Advanced Learners' Dictionary (2010) indicates that the word 'real' means actually existing or happening in the physical world, which is not imaginary, fictitious or pretended. The word 'life' means a person's experiences and activities that form a particular part of his or her life. On the other hand, the word 'situation' means all the circumstances and things that are occurring at a particular time and in a specific place.

The Collins English Dictionary and Thesaurus (2005) define the word 'strategy' as an overall plan of action which summaries how the vision of a business and in this case, the infusion of theory and practice in the teaching of BOCS using ICT will be achieved in line with the objectives of the study. On the other hand, the New Choice English Dictionary (1999) defines 'strategy' as " a political, economic, or business policy". This indicates that in every aspects of life, there should be strategic decisions that have to be thoroughly thought out and skilfully designed in pursuit of set objectives. For example, economically, every country has to decide which economic system (centrally planned economy, free market economy or mixed economy) to be adopted. This would depend on the economic questions like, who makes decisions, what to produce, how to produce, for whom to produce and who determines the prices of goods and services. This means that a country should come up with an idea of how it will execute and operationalise those economic strategies depending on its responses to the above-mentioned economic questions.

Additionally, James (2013) considered a strategy in the business world, as task-bound and/or goal-orientated whereby an organisation utilises its financial, natural, physical, human, informational and technological resources to achieve the targeted productivity and feasibility.

The above clarification suggests that different strategies would be employed in different situations to attain diverse objectives (Umukoro, Kuye & Sulaimon, 2009). The implementation of a strategy depends on how well it is applied in order to attain the set objectives, more than how well it is formulated (Umukoro *et al.*, 2009). This tallies well with what this study aims to achieve: a real-life-situation strategy of teaching BOCS using ICT. Nenkova and McKeown (2011) point out that a strategy is about shaping the future and involves the human effort meant to get to desirable ends using available means. This thought is complemented by Yarger (2006), who indicates that strategy assumes that while the future is hardly predictable, the strategic situation can be studied, assessed, and to varying degrees, it can be anticipated and manipulated.

A strategy can therefore be understood as enabling those involved in its development and implementation to critically consider the advantages and disadvantages, benefits and risks of their plan. It thus provides a framework within which the current realities can be used to design the aspired future through lateral thinking (Yarger, 2006).

### 2.11.2 Business opportunities creation skills (BOCS)

According to Oxford Advanced Learners' Dictionary (2010), the word 'business' involves the activity of making, buying, selling or supplying goods and services for money. The Encyclopaedia Britannica also defines business as an entity formed for the purpose of carrying on commercial enterprise. On the other hand, opportunity means a time when a particular circumstance makes it possible to do or achieve something. The word 'creation' is defined by Oxford Advanced Learners' Dictionary (2010) as the act or process of making something new, or of causing the existence of something that did not exist before. In addition, the Oxford Advanced Learners' Dictionary (2010) defines the word 'skills' as the capability to do something well through training. In this way, BOCS involves giving students instructive conditions that empower them to secure abilities to consistently add value to their current group of information (Jones, 2007). BOCS is additionally depicted as showing students how to realise, how to look for new data, how to use it and assess its significance, how to settle novel, non-course books into proficient issues (Biggs, 2003).

### 2.11.3 Entrepreneurial skills and knowledge

Sopandi (2019) epistemologically characterises *entrepreneurship* as an essential ability in creative thinking and innovative behaviour, used as the basis, resources, driving force, goals tactics, and tips in facing life's challenges. He further states that entrepreneurs cannot only plan and speak, but have to realise their plans in their minds, leading to an action-oriented mind-set of producing something new. This can only manifest through entrepreneurial holistic education, which aims at developing the individual potential of learners, which may occur in a more pleasant, democratic, and humanistic-learning environment (Sopandi, 2019), an entrepreneurially supportive environment, which inspires entrepreneurial activity, helping in developing an enterprise culture among learners as tomorrow's entrepreneurs (Keat, Selvarajah, & Meyer, 2011). In the context of the current study, these environments are called

Rich Environment and Active Learning (REAL). In order to foster a culture of entrepreneurship, *entrepreneurial values*, such as independency, creativity, dare-to-take risks, action-oriented, leadership and hard work, amongst other things, have to be inculcated in students to nurture an entrepreneurial character, through imparting knowledge and skills (Sopandi, 2019; Keat *et al.*, 2011) that will be useful to learners' future career-oriented endeavours (Keat *et al.*, 2011).

Furthermore, when the culture has been cultivated, entrepreneurs have to acquire or obtain certain *entrepreneurial skills* that are significant for the success of their business. Various scholars define skills differently; for example, Ibrahim and Lucky (2014) describe 'skill' as the ability and capacity to do something; as knowledge that is best defined by an action and as the ability and capacity to do certain things. In addition, the word 'skill' is synonymous with various words like: ability, competence, knack, aptitude and talent and it is interpreted according to languages and is used in many different contexts and disciplines (Ibrahim & Lucky, 2014). It should also be noted that a skill can be applied in different contexts and disciplines, for example, entrepreneurial skill, teaching skill, football skill, and etcetera. Therefore, the present study refers to the entrepreneurship context where a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT, is designed to impart entrepreneurship skills in learners. Students are taught entrepreneurial skills on live share trading using ICT where their trading accounts resemble their "businesses". In addition, there are various entrepreneurial skills that students have to acquire to enable them to become successful entrepreneurs when trading their accounts. Some entrepreneurial skills include cognitive skills (critical and creative thinking, problem-solving, decision-making and initiative, etcetera); social and relational skills (self-motivation, communication, capacity for teamwork, adaptive skills, etcetera); technical skills (integrate concepts of technical expertise, technological, working techniques, processes and context, etcetera) and management skills (administrative, sales and marketing, integrating knowledge about potential strategies, etcetera), which enable entrepreneurs to realise their entrepreneurial goals (Ibrahim & Lucky, 2014; Sousa & Almeida, 2014; Loué & Baronet, 2012). Therefore, it should be noted that not all the above-mentioned entrepreneurial skills are used on live share trading using ICT. The researcher had to explicitly discuss them for the readers to know and understand that they are used individually or simultaneously, depending on the type of the business.

Having discussed the multiple entrepreneurial skills, it should be noted that these skills can only be applied concurrently with the knowledge. Knowledge that is imperative and

indispensable includes general business knowledge, venture-specific knowledge, opportunity-specific knowledge and entrepreneurial knowledge. For this study, only the *entrepreneurial knowledge* will be discussed, as it is multidisciplinary, which includes various skills, concepts, technical factors, attitudes, personality traits and mentality the entrepreneur should have for entrepreneurship to prosper, which can be transferred through learning (Gamage & Weerakoon, 2017). The main objectives of entrepreneurial knowledge are that they develop wide understanding, and acquire an entrepreneurial mind-set on how to start and operate a business (Gamage & Weerakoon, 2017). Entrepreneurial knowledge and skills can be taught and developed and are acquired through experience, culture, personality and emotions (Gamage & Weerakoon, 2017). Therefore, in the context of the current study, students should be acquainted with the *trading skills and concepts* used in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. For example, they should be able to analyse the trading market, utilising the *fundamentals* and *technical analysis tools*. The fundamentals include political, economic, social, technological, legal and environmental (PESTLE) news and technical tools include, amongst other things, candle sticks, stochastic, Moving average convergence divergence MACD trading strategy, etcetera, which students must be able to analyse before they venture into the trade. These, amongst other things, form part of the entrepreneurial knowledge in the context of the study.

In this sense, students have to apply both cognitive skills, for instance, critical and creative thinking skills, and entrepreneurial knowledge when analysing the trading market, using both fundamentals and technical analysis tools before performing trading activities. This should be done to minimise the risk of incurring losses by managing (management skills) the trading accounts (businesses). Thus, entrepreneurial skills and knowledge should be applied simultaneously when teaching BOCS, the live share trading using ICT.

### 2.11.4 Information and Communication Technology (ICT)

According to the Oxford Advanced Learners' Dictionary (2010), the word 'information' means knowledge acquired through experience or study. On the other hand, the word 'communication' is defined as the activity or process of expressing ideas and feelings to people or the imparting or exchange of information (Oxford Advanced Learners' Dictionary, 2010). The word 'technology' is also defined as the scientific knowledge used in practical ways in industry or commerce (Oxford Advanced Learners' Dictionary, 2010). ICT is an

umbrella term that incorporates any communication device or applications; it encompasses radio, television, cellular phones, computer and network hardware and software, satellite systems, among others, as well as the various services and applications associated with them, such as video-conferencing and distance learning (Chikati, Mpofu, Muchuchuti & Sidume, 2013).

ICT is viewed as a significant instrument required to support new ways of teaching and learning and is used to develop students' skills for cooperation, communication, problem-solving and lifelong learning (Uluyol & Şahin, 2016). ICT enhances the presentation of content, drawing in learners, displaying skills, and assessing students' progress (Care *et al.,* 2017). Subsequently, the use of ICT in the current study, for example, the use of technological tools, gadgets and software programmes, entails the need to develop human capital resources towards its acquisition and utilisation in the teaching and learning of BOCS, the live trading of shares using ICT (James, 2013). Furthermore, the use of ICT in the teaching and learning of BOCS, the live trading of shares involves the application of networks, expert systems, and artificial intelligence in electronic commerce (e-commerce) or electronic business (e-communication business) (James, 2013). It facilitates the interaction between teachers, students and other stakeholders, enhances convenience and effective storage, access to and retrieval of information in the teaching and learning of BOCS, the live trading of shares.

### 2.11.5 Adult Education and Training (AET)

Mokotedi (2017) operationally explains adult education as the process of teaching and learning that is institutionalised and intended for individuals that are regarded as adults, irrespective of the sector of society in which it transpires. Thus, adult education does not have boundaries, but can occur in blurred societal sectors, which mirrors its social realities. The complexities of the societies occur due to growth in technological developments (skills and knowledge), the division of labour and the subsequent creation of pluralism. Therefore, adult education has expanded to perform educative functions in each of the social institutions.

Furthermore, one should differentiate between Adult-Based Education (ABE) and Adult-Based Training (ABT) (McKay, 2007). ABE refers to the educational base that individuals require to improve their chances in life, while ABT refers to the foundational income-

generating or occupational skills that individuals require to improve their livelihoods and living conditions.

A combination of these two forms AET which, through programmes, supplies the foundational knowledge, skills, understanding and abilities that are essential for improved socio-economic life. In addition, the 'T' in AET refers to more than technical or employment skills (McKay, 2007). The 'T' refers to a wide range of skills and expertise, including technical skills such as plumbing, dressmaking, beadwork and other crafts, together with specialised skills, such as conflict management and negotiation, as well as creative skills, such as dance and praise, poetry or the ritual chanting and singing of verses of praise for esteemed people (McKay, 2007). AET, previously known as AET, was introduced, as discussed in McKay (2007), because it envisioned to serve a multiple of social, economic and developmental needs, which was constitutionally enshrined as a basic right of all citizens and every person's legal entitlement or right.

AET is considered critical by the post-apartheid government. It is propounded in the government policies as programmes that address the basic social, economic and developmental imperatives of the majority of the poor South Africans. It is a constitutional right for all citizens and potrayed by the South African legislation. AET is portrayed as the foundation for justice and equality and adds to the core values, such as democracy (active participation), access (redressing historical imbalances), and development South Africa adopted (McKay, 2007). AET is promoted in specific government acts and policy documents that relate to and promote adult education. Therefore, the current study, intends to fill the entrepreneurial knowledge and skills gap on live share trading, using ICT to ensure that the process of social change and human resource development contributes to the country's economic growth and development.

## 2.12 CHAPTER SUMMARY

This chapter discussed the theoretical framework, which is bricolage. It discussed the historical origin of bricolage, the chronological evolution of eight moments of bricolage, formats of bricolage, and the ontological and epistemological position of bricolage. Further, it discussed the role of a bricoleur, the relationship between the bricoleur and the co-researchers, rhetoric: the language used in bricolage, the principle/objectives bricolage of significance of bricolage and the definition and discussion of operational concepts.

# CHAPTER 3
# LITERATURE REVIEW ON DESIGNING THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION AND COMMUNICATION TECHNOLOGY

## 3.1 INTRODUCTION

The study aims to design a strategy of teaching business opportunities creation skills (BOCS), the entrepreneurial skills on live share trading using ICT. This chapter reviews literature related to the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT by examining the need to formulate a real-life-situation strategy that could be used to teach BOCS using ICT, where the following constructs are discussed: a) an inter-sectoral collaborative and coordinated team; b) collaborative planning and preparation; c) need to adapt to rich environmental and active learning, using ICT; d) use of a static and standardised assessment; and e) need for continuous and professional teacher development. In addition, the conditions affecting the teaching of BOCS will be discussed and include: a) conditions conducive for the inter-sectoral and coordinated team; b) conditions conducive to a shared vision; c) conditions that support the effective use of REAL. In addition to that, threats which include: teachers' resistance to change to REAL and a lack of infrastructure and resources will be discussed. Evidence of the applicability of the strategy of teaching BOCS using ICT will also be discussed, including: a) the scope of content knowledge; b) live share trading skills and technological content knowledge. When examining the literature, the best practices from the international context, Africa, SADC and South Africa will be discussed, based on the objectives of the study, built on the teaching and learning of BOCS using ICT. The purpose is to develop constructs that helps the study to interpret the empirical data gathered in Chapter 4 and are presented in a meaningful and logical manner in Chapter 5. Finally, the conclusion drawn sums up the chapter by restating the aim of the study and chapter, as well as highlighting important points.

## 3.2 THE NEED FOR FORMULATING A REAL-LIFE SITUATION STRATEGY TO TEACH BOCS USING ICT

This section identifies, interrogates and discusses the challenges that confront the teaching and learning of creating and developing opportunities on entrepreneurial skills on live share trading using ICTs. This was done in order to justify the urgent need to develop a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT. The intended strategy seeks to bridge the gap between the teaching of theory and practice, specifically on implementing and/or applying the entrepreneurial skills and knowledge on live share trading using ICT by students in their real-life situations. This is applicable to the teaching of BOCS, but can also be transferrable and be used in other areas facing similar challenges. Literature is reviewed under the following headings: inter-sectorial collaborative dedicated team; collaborative planning and preparation; need to adapt to Rich Environment and Active Learning (REAL), using ICT; use of a static and standardised assessment and the need for implementing continuous and professional teacher development (CPTD) as captured in related literature.

### 3.2.1 Inter-sectoral collaborative and coordinated team

Teamwork has been described as a cooperative process, which allows ordinary people to achieve extraordinary results (Dhurup *et al.,* 2016). These extraordinary results depend largely on far more diverse, dispersed, digital and dynamic (4-D) teams, which are hinged on a core set of fundamentals guiding group collaboration (Haas & Mortensen, 2016). The basics for high-performance teams include members with balanced skills (which does not mean that every individual should have superlative technical and social skills but a healthy dose of both), diversified knowledge, views and perspectives, as well as age, gender and race, which enhances the creativity of the team (Haas & Mortensen, 2016). However, Haas and Mortensen (2016) assert that 4-D teams have more prevalence of destructive dynamics, like incomplete information where members withhold information from other team members, which leads to poor communication and fragmentation, due to their various specialised areas of expertise, skills, knowledge and abilities. Thus, the information possessed by each member yields no value if not thoroughly communicated to the rest of the team members (Haas & Mortensen, 2016). Destructive dynamics occur when team members force people to conform, avoid responsibility, cast blame, etcetera, thus hindering collaborative teams.

In addition, team collaboration and networks could also be digital-dependent or technology-facilitated where various stakeholders operate through electronic group communication with the use of, for example, cell phones, laptops and the internet (Egoeze *et al.*, 2018; Wilson & Stacey, 2004), where WhatsApp groups, emails, Facebook pages, podcasts, etcetera are utilised. It should be noted that the dependence on digital technology without face-to-face teams impedes information exchange between and amongst members, forcing teams to mingle both digitally and face-to-face. Face-to-face teams rely on non-verbal and contextual cues to provide insight into what is prevailing, for example, walking into the face-to-face meeting triggers individual and collective moods of the people in the room (crucial type of intelligence). This provides the team with the information that could be used consciously or otherwise to tailor subsequent interactions which cannot be attained through the use of digital communication only (Haas & Mortensen, 2016).

Moreover, teamwork could be introduced by any societal business organisation, economic sectors, governments, schools, countries, etcetera to strive for success and competitiveness and to guarantee that they effectively achieve their desired outcomes. However, research shows that the absence of an inter-sectorial, dedicated, and collaborative team denies organisations (such as schools), as well as beneficiaries, opportunities to acquire multiple skills, competencies, resources and knowledge from various external stakeholders (Dhurup*et al.*, 2016; Qhosola, 2016). For instance, Johnson and Schaltegger (2016) suggest that SME owner-managers are much less able to influence their competitive environment than big firms, until they cooperate with their peers and other stakeholders. This depicts that SMEs' competitiveness is strongly dependent on the "inter-firm" collaboration and networks where information is shared and new skills are acquired. This enables the SMEs to co-produce, co-market, co-purchase and be co-operative in the development of new product or service, leading to the success of the business (Johnson & Schaltegger, 2016). This could promote a positive interdependence, a joint effort, and different contributions between team members (Li & Lam, 2013).

Furthermore, the absence of a dedicated collaborative team triumphs when two principal societal institutions, namely the government and the traditional business entity, are incapable of addressing the issue of wealth inequality (Lyons, Hamlin & Hamlin, 2018). For this reason, wealth inequality, as a societal "wicked" social problem, through entrepreneurship, increases the gap between the "haves" and the "have nots." This signifies that governments lack innovative approaches and traditional businesses are not aware of the work plans that

may be successful unless they permeate other societal stakeholders in trying to determine an approach that helps stimulate the entrepreneurial spirit as a new solution (Lyons *et al.*, 2018).

Moreover, it is believed that a team that has strong involvement of community-based stakeholders creates a positive environment (Qhosola, 2016). It furnishes the school with a specific circumstance and climate that can supplement or strengthen positive qualities. The school's culture and learning environment accommodate the students or refute everything the school endeavours to achieve (Qhosola, 2016). As declared by the National Education Policy Act (NEPA No. 27 of 1996), participative and cooperative decision-making, taken through team-teaching by teachers and other related practitioners, stimulates teachers' acquisition of skills, knowledge and experiences in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT (ELRC, 2003). The current study, which intends to design a strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT, therefore strives to determine ways of successfully formulating dedicated and collaborative teams of both internal and external stakeholders. This ensures the infusion of theory and practice where students would be able to implement classroom-acquired skills in their real-life situations using ICT.

### 3.2.2 Collaborative planning and preparation

Planning is as an economic action intended to enhance the management of time and the necessary resources (human and non-human), aimed at attaining an identified set of objectives, goals and/or a vision, using the specific, measurable, attainable, realistic, time-bound, ethical and recordable (SMARTER) approach (Matoetoe, 2017; Bean, Kleyn, Kotze, Llewellyn, Maliehe & Marx, 2013). Basically, with regard to planning as an intellectually demanding procedure that requires the conscious determination of action courses and basic decisions on purpose, knowledge and considered estimates, the planner has to thoroughly examine the internal and external situations (Adesina, 2011). Therefore, in the teaching and learning situation, a good lesson plan, which is considered an important tool in a written form, infuses both theoretical and practical aspects of a subject (Matoetoe, 2017). It is further described as a roadmap used by teachers to ensure that students acquire the envisioned skills and knowledge as prescribed by the lesson's objectives (Matoetoe, 2017). Cooperative lesson planning should involve all the educational needs, such as lesson objectives, learners' and teachers' activities, content to be taught and resource materials to be used by teachers

(Matoetoe, 2017). In addition, NEPA states that Business Studies teachers, as learning mediators signifying practical competences, should prepare lesson plans thoroughly and thoughtfully by drawing on a variety of resources; knowledge, skills, and processes of Business Studies; learners' existing knowledge, skills and experience (ELRC, 2003).

However, teachers do not often collaboratively prepare lesson plans that incorporate lengthy and specifically practical teachers' and learners' activities that trigger and provoke their existing knowledge, skills and experiences, objectives of the lesson, as stipulated by NEPA, or the relationship between Business Studies and other subjects (Matoetoe, 2017; Sithole, 2012). In addition to that, Lamb *et al.* (2016) suggest that teachers usually develop their lesson plans following the rational and static model, as stipulated and obligated in policy documents. According to him, this rational model of lesson plans seems good and fine on paper, but irrational and not implementable in reality, as they inhibit teachers' flexibility to collaboratively plan their lessons. Furthermore, he states that the uncertainties that may encroach during lesson facilitation, for example, time pressures, organisational issues, teachers' and learners' attitudes, moods and emotions, are overlooked on the closed structures implied on the dominant, rational and linear model of lesson planning patterns (Lamb*et al.*, 2016).

Moreover, the unrecognised challenge impeding professional development is assisting teachers, policymakers, and local communities unlearn the beliefs, values, assumptions and cultures underlying a school's industrial-era operating practices, such as the 45-minute class periods that permit inadequate time for practice (Pearson, 2014). As a result, teachers have stated that some of the reasons that limit them from involving the aforesaid aspects, which include inadequate time allocation for a practical subject such as Business Studies. They view some of the aspects as time-consuming, which obstructs timeous completion of the syllabus as stipulated in the educational policy documents (Matoetoe, 2017; Sithole, 2012). For example, in South Africa, Business Studies is allocated four hours per week, which represents 8% of the formal teaching and learning time per every school week (Sithole, 2012; CAPS, 2011).

Additionally, in most African countries, Business Studies is allocated four periods per week, which are 40 minutes each, on a five-day timetable. This translates to about 11% of the total weekly teaching time, which comprises 45 periods, translating to 2.67 hours per week, which is slightly less than the time allocated to the same subjects in neighbouring countries (Sithole,

2012). This means that a topic like, “Investment in stocks”, which has to do with the trading of shares, should be taught in a manner that infuses both theory and practice to fully enlighten students and equip students them with the relevant practical skills and knowledge required for application in their real-life situations.

Moreover, due to bureaucracy and lack of flexibility in the DoE, there is a marginal collaborative partnership between the public and private sector and that leads to insufficient technical support in using ICT (Lamb *et al.*, 2016; Mosia, 2016; Sithole, 2012; Evoh, 2007). Mosia (2016) insists that the planning, facilitation and assessment should be done collaboratively and cooperatively by all the relevant internal and external stakeholders. This collaborative type of planning is noticeable in rich environments for actively learning (REAL) instructional strategies. To create REAL in the learning environment, teachers should always include students, parents, administrators and colleagues in the planning and implementation of teaching strategies that motivate students to actively participate in active knowledge construction and generative learning activities in a variety of methods and on a large scale (Grabinger & Dunlap, 1995).

The statements from both Mosia (2016) and Grabinger and Dunlap (1995) perfectly fit in with the current study, the reason being that teachers are able to teach the types of shares, which has to do with theory only. The current study aims at infusing both theory and practice, which can only be done by the professional trader using ICT as a resource. Consequently, collaborative planning by both internal and external stakeholders is crucial for the infusion of theory and practice, allowing students the practical implementation of the live share trading skills in their real-life situations.

### 3.2.3 Need to adapt to Rich Environment and Active Learning (REAL) using ICT

Grabinger and Dunlap (1995) declare that Rich Environment and Active Learning (REAL) represents environments comprehensive instructional systems that emanate from philosophies and theories where the teaching and learning process is advanced and encouraged within the meaningful, relevant, complex and information and technology-rich environment. In addition, REAL are comprehensive educational systems that promote studying and investigation occurring within authentic contexts. It also encourages and promotes students’ growth in participation and responsibility, decision-making and intentional learning. It furthermore cultivates collaboration and synergy among students and teachers; it utilises generative,

dynamic and interdisciplinary learning activities that promote and enhance higher-order thinking processes, which in turn help learners to develop rich and complex knowledge structures, while ensuring that students they are assessed progressively in content and learning-to-learn, using realistic tasks and performances within authentic contexts in using realistic tasks and performances (Aparicio *et al.,* 2016; Robinson *et al.,* 2015).

Furthermore, NEPA proclaims that the educator, as a learning mediator indicating practical competences, has to appropriately use media and everyday resources in teaching, including judicious use of common teaching resources like textbooks, chalkboards, and charts, as well as other useful instructional media like data projectors, computers, video and audio devices, etcetera and popular media resources, like newspapers and magazines, as well as other artefacts from everyday life (ELRC, 2003). NEPA also states that teachers should adjust teaching strategies to match learners' developmental stages; meet the knowledge requirements of a particular learning area; cater for diverse learners' different learning styles and preferences (ELRC, 2003). NEPA, likewise, announces that teachers ought to change instructional techniques to coordinate students' formative phases; meet the knowledge prerequisites of a specific learning territory; cater for various learning styles and inclinations for different students (ELRC, 2003).

The need to adapt to REAL is crucial as various countries' economic development and growth in human welfare depends largely on the type of education they afford for their inhabitants (Dessai & Kulkarni, 2012). A country's economic development and growth can only be enhanced through an education system that incorporates the Fourth Industrial Revolution's (4IR) skills and knowledge aimed at producing a highly skilled and globally competitive workforce (learners). Education is perceived as beneficial to society, as it leads to higher rates of returns that would far outweigh the initial investment in the education and training of their learners who, after years of education, tend to be a country's workforce (Sithole, 2012; Alam, 2008).

In addition, adapting to REAL, especially when teaching BOCS, the entrepreneurial skills on live share trading using ICT as the crux of the current study, was further noted on the 17$^{th}$ of March 2017, during the Global Entrepreneurship Week. On that day, the significance of the inclusion of entrepreneurship programmes in schools in the South African education curriculum was cited by the former Deputy President of South Africa, Cyril Ramaphosa (Malope, 2017). He stated that "there is much more we can do, entrepreneurship must be part

of the school curriculum so that young people must from an early age be encouraged to be problem solvers". For example, the Malaysian government and all its stakeholders ensure and promote entrepreneurship programmes in schools and universities, aiming at creating and inculcating the culture and habit of becoming entrepreneurs by learners (Ibrahim & Lucky, 2014). President Ramaphosa supported the inclusion and fostering of a culture of entrepreneurship in the school curriculum, viewing it as a viable career option that would create job creators rather than job seekers. That would also counteract the statement from the Global Entrepreneur Monitor GEM Report, which states that South Africa's national culture seems to discourage entrepreneurial risk-taking (The Portfolio Committee on Education, 2018).

Moreover, the importance of cultivating an entrepreneurial spirit for students while they are still at school is further noticed in the report of The Portfolio Committee on Basic Education, published on the 8th of May 2018, which obliged the Department of Basic Education to implement the Three Stream Model in the South African curriculum (The Portfolio Committee on Education, 2018). The Three Stream Model is discussed below under strategies to teach BOCS, the entrepreneurial skills on live share trading. Before discussing REAL in depth, it is prudent to start by discussing the 4IR to clarify why it is prominent that education systems should change from producing the white-collar workforce where teachers used the conventional method of teaching to adapting REAL.

The 4IR and/or the "Machine Age" stimulates the use of artificial intelligence (AI); digitalisation; big data; robotics, 3-D printing; autonomatic either of the two, that you think suits most Dr vehicles; nanotechnology; biotechnology; energy storage; material science; the internet of things and quantum computing that blur the lines between the physical, digital, and biological spheres used in the teaching and learning environment (Peters, 2017; Schwab, 2017; Martin, 2017; Jones & Pimdee, 2017). The 4IR will use the machines and robots to accomplish tasks that were previously undertaken by humans (Martin, 2017). Moreover, Brynjolfsson and McAfee (2014as cited in Martin, 2017) argued that during the Machine Age, the global society will experience an immense shift in the demands and supply of skills across occupations in the different structures of industries.

For example, Standard Bank of South Africa (SBSA) closed 104 branches around the country in June 2019 and a large number of its employees subsequently lost their jobs (Business Insider, 2019). This has resulted from the 4IR regime the world is currently experiencing.

This calls for the entrepreneurial curriculum with the teaching methodologies incorporating REAL, which will produce students who are capable of dealing with real entrepreneurial activities or to transform learners' entrepreneurial competencies (Keat *et al.,* 2011), infusing theory and practice in the current epoch of the 4IR. This ensures adequate supplies of students (the human capital) with a wide array of cognitive and non-cognitive entrepreneurial skills with "ICT-literacy and/or digital skills" to exploit new technologies, as well as create and diffuse new goods and services in a technology-rich environment (Martin, 2017).

In addition, the significance of adjusting to REAL was additionally stressed by President Cyril Ramaphosa during the state of the nation address (SONA) in 2018. He stated that at the focal point of the relative multitude of government's endeavours is the need to accomplish higher and more even-handed development, and to give youngsters work, as well as to set up the country for the computerised age; hence, there ought to be prioritisation of instruction and the improvement of abilities. This is in accordance with the current investigation's goal of planning a system to show BOCS, the pioneering abilities on live share trading utilising ICT. He further indicated that over the next six years, the government would provide each South African school child with digital workbooks and textbooks on a tablet device. In addition, he expressed the intention to extend the preparation of both teachers and students to the emerging technologies, which incorporate the internet of things, robotics and artificial intelligence as required in the current age of the 4IR (Mhlanga & Moloi, 2020).

The current study intends to introduce both students and educators to the use of the Internet of things, robotics and artificial intelligence that are used by the current traders in the 4IR, once they have mastered live share trading using ICT. The study intends to ensure that both teachers and students are introduced to and familiarised with the use of the internet of things, robotics and artificial intelligence when executing trading activities. This occurs when trading is performed by the "assets of the 4IR" (internet of things, robotics and artificial intelligence) whether they (students and educators) are there personally or not, thus familiarising students with the entrepreneurial skills on live share trading required during the 4IR. As a result, the 4IR machines and robots are set to accomplish tasks that were previously undertaken by humans (Martin, 2017).

It should further be noted that REAL are different from learning environments usually discussed in educational literature (Grabinger & Dunlop, 1995; 2002). REAL are not technologies like video, CD-ROM and audio tapes that draw on resources and media to

deliver instruction. They include media technologies, as well as an assortment of other methods and ideas that help in creating a technology-rich environment that enhances and encourages critical thinking in learners (Martin, 2017; Aparicio *et al.*, 2016). Furthermore, in using REAL, students obtain abilities that empower them to utilise digital technology, communication tools and networks to perform practical tasks (live share trading) in active learning that delivers results (Martin, 2017; Aparicio *et al.*, 2016). Similarly, Peters (2017) contends that digital technologies are doing for human brainpower what the steam engine and related technologies did for the human muscle power during the Industrial Revolution. Therefore, media technologies permit teachers and learners to overcome the limitations and to open up new frontiers with extraordinary speed in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT.

Moreover, REAL are not computer-based micro-worlds, which only allow students to acquire narrow digital skills, such as computer programmes that include, for example, case-based-applications, simulations, intentional learning environments and some hypermedia resources or software design (Martin, 2017; Aparicio *et al.*, 2016). REAL enable students to accumulate and apply information from computers and other digital devices, like cell phones to practically solve problems in their real-life situations (Martin, 2017; Aparicio *et al.*, 2016). In addition, REAL do not include the physical attributes of the classroom, like air conditioning, desks, lighting or ergonomics, although they are crucial in creating a smooth learning environment (Aparicio *et al.*, 2016).

The five attributes of the REAL model, which are significant for face-to-face and online learning, include:

**a) Student responsibility and initiative**

Learners, when participating in the online teaching and learning environment, position and manage their own learning very well by showing the initiative to plan their own time and involving themselves in selecting, coordinating and executing their own schoolwork (Robinson *et al.*, 2015). Participating in synchronous and asynchronous discussions aids students to be responsible and initiative when selecting and completing online projects or activities.

Robinson *et al.* (2015) suggest that learner responsibility and initiative involve the learner's right to take decisions, or accept responsibility for their own learning. Learners' responsibility and initiative lead to intentional and incidental learning where the former

enhances the learner's purpose, putting forth the effort and actively involving them. The former enables students to know themselves well enough so that they may make informed choices about their learning activities, thus taking responsibility and initiative, which is an achievement and not an automatic consequence of human development (Robinson *et al.,* 2015). On the other hand, incidental learning occurs when students learn through experience, which is in contrast with intentional learning where studentsinvolve themselves in making choices about their learning activities, thus making them feel in control of their learning. Responsible students in the teaching and learning of REAL want to know what it takes for them to learn, permitting them to take the initiative to discover knowledge, which leads to increased engagement, confidence and responsibility (Robinson *et al.*, 2015). This is opposed to a situation where students passively absorb what they are being taught in the traditional classroom.

**b) Generative learning activities**

Grabinger and Dunlop (1995) declared that generative learning, as the second attribute and the most exciting part of REAL, gives students the opportunity to research, investigate, and solve problems, thus enabling them to become investigators while teachers become facilitators. Students, through generative learning, absorb the data within existing cognitive structures and develop through past experience which gives students them the opportunity to investigate, research, and solve problems (Robinson *et al.,* 2015). Additionally, generative exercises help develop broader and widely transferable ideas through problem-solving tasks that allow students to create their own ideas, while working on the project that is valuable to them. Additionally, generative learning activities enhance learners' inventiveness students whereby their own goals and objectives are applied, which also allows them to recognise other learners' points of view through discourses in the teaching and learning environment.

**c) Authentic learning contexts**

The creation of authentic learning contexts is the third characteristic of REAL with realistic situations and conditions where the tasks given to students produce deeper and wider knowledge (Robinson *et al.*, 2015). This means that teachers guarantee that they create realistic, rich and appropriate learning contexts that focus on the learners' needs, which has significance to their future careers, using productivity and collaboration tools. It also assists in providing authentic learning activities that are significant, purposeful and logical, which allows students to work in groups to solve problems and therefore be able to attain deeper

knowledge and learning (Robinson*et al.*, 2015). In addition, authentic learning contexts enable students to relate a problem to their daily real-life situation, allowing them to take the initiative in gathering the information that solves the problem and enhances learning (Robinson*et al.*, 2015).

More than the authentic learning context, a secured instructional strategy can be used in the authentic learning environment to overcome the problem of transferring passive knowledge, which encourages students to recall what has been taught (Robinson *et al.,* 2015). This strategy permits supported exploration by both students and teachers, enabling them to understand the problems and opportunities experts use as tools. To accomplish that, incorporation and comprehensiveness as overall REAL defining features should also be considered, where integration is described by Hannafin (1992) as a method of infusing new and old knowledge to enhance the depth of learning and increase the number of entrance points to that information (Peters, 2017; Schwab, 2017; Aparicio *et al.*, 2016). This implies that in REAL knowledge is not the collected product, but a functioning and evolving process where the student endeavours to make sense out of the world by integrating new and old knowledge.

Furthermore, Grabinger and Dunlop (1995) state that comprehensiveness places the learning in broad, convincing contexts, rather than in a decontextualised and compartmentalised context, which broadens the perception that in REAL, students conditionalise and obtain their knowledge, which is called indexed knowledge. This allows students to utilise the indexed knowledge on the later and broader stage in their own personal ways (Aparicio *et al.*, 2016).

Therefore, integration and comprehensiveness, as REAL's features, ensure that teachers do not present problem-solving skills to students in an abstract form that is detached from their application of knowledge, which makes transfer to real-world conditions difficult (Fox *et al.*, 2018; Steenekamp, van der Merwe & Athayd, 2011). This is so because, if students are not comprehensively taught, they would attain inert knowledge with "factory skills" that hardly match the demands of the 4IR era, instead of being competency-driven skills, which they would easily apply and appreciate as valuable (Muskin, 2012). Therefore, the use of REAL should encourage the contexts where students are richly involved in a realistic and relevant problem-solving situation, helping them to apply more spontaneous knowledge in real-life situations (Aparicio *et al.*, 2016).

Therefore, in relation to the current study, when teaching BOCS, the entrepreneurial skills on live share trading, teachers cannot make use of, for example, an data projector to project hand-written notes on the wall and claim that they are using ICT in that particular learning situation. The use of the single-presentation tool is a decontextualised and compartmentalised learning context, which lacks comprehensiveness and integration, which then illuminates the importance of placing learning in extensive, realistic contexts (Grabinger & Dunlap, 1995). Consequently, the use of REAL in the 4IR paradigm is vital to ensure the infusion of theory and practice, which encourages the realistic learning context in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. Students could be theoretically taught about the shares that are bought and sold (traded) at the Johannesburg Securities Exchange (JSE), the types of shares, their advantages and disadvantages by teachers in a social learning context where there is a collective and social negotiation between internal and external stakeholders. This ensures the conceptual growth on entrepreneurial knowledge and skills on live share trading, stemming from the multiple and shared perspectives of global polity, as promoted by bricolage.

For example, bearing in mind that the current study bent on designing a strategy of teaching BOCS, the entrepreneurial skills on live share trading, emanated in Business Studies, multiple skills, knowledge, experiences and values, can be shared by various stakeholders. An Economics teacher could explain the fundamental analysis that has to do with global political, economic (inflation, interest rate, gross domestic product (GDP), unemployment rate, etcetera), social, technological, legal and environmental (PESTLE) environments, which have a significant impact on the markets. Moreover, a professional trader could explain the technical analysis of, for example, candle sticks, stochastics, MACD, etcetera by using a laptop and/or data projector to open the international trading broker platform and IG market to practically display and show us how live share trading is executed and all other stakeholders can participate by questioning and answering questions where possible and necessary. Thus, using REAL in the current study could enhance the use of robotic software, digital technologies and the internet of things that could enhance learners' brainpower to successfully execute live share trading after it has technologically evaluated the trading signals.

**d) Authentic assessment strategies**

Robinson *et al.* (2015) suggest that genuine assessment, the fourth attribute of REAL, builds on the authentic learning contexts discussed above. Robinson *et al.* (2015) and Grabinger, and Dunlop (1995) have stated that authentic assessments are realistic and ill-defined, which requires students to use the content knowledge in its context and emphasise "depth more than breadth". However, it should be noted that authentic learning activities are designed in a way that affords students to develop and practice skills while working with others, whereas authentic assessments are designed as a means of evaluation. Different from traditional and standardised assessments, which promote remembrance of facts or provision of basic skills as a summative measure, authentic assessments afford students insightful performance when faced with similar problems in real-life situations (Robinson *et al.,* 2015; Grabinger & Dunlop, 1995). Furthermore, the awarding of marks or scoring of guides for authentic assessments should be shared with students in advance, as it should contain more complex multi-faceted criteria than those used in the traditional assessment. This should be done as their design compels and gives students the chance to express their interest, views and work, using a variety of skills.

**e) Collaborative learning**

Collaborative learning is the last attribute of REAL as an instructional model. Dabbagh (2005) defines collaborative learning as an instructional strategy that encourages interaction between and among two or more students to maximise their own and each other's learning. Furthermore, collaborative learning, as ICT-supported learning, is part of Vygotskian's clarification of the zone of proximal development where students can solve problems in collaboration with their capable peers (Mosia, 2016; Robinson *et al.*, 2015). This means that there is meaningful social interaction and cooperation among learners, teachers, business people, and subject specialists, regardless of their backgrounds, which is the foundation of rich situations that promote active learning (Robinson *et al.*, 2015; Dabbagh, 2005; Wilson & Stacey, 2003).

Moore and Kearsley (2012 cited in Robinson *et al.,* 2015) identify three meaningful social interactions in a collaborative, ICT-supported learning, which are; student-to-student, teacher-to-students and students-to-content interactions. It is asserted that when teachers present students with a problem (project), in a problem-based environment, meaningful discussions during group-work and within a peer review, a student-to-student interaction occurs. Students may interact and work together using tools like discussion groups, emails, or

chat rooms, promoting the collection of activities that emphasise joint construction of knowledge, as well as joint negotiation of alternatives through argumentations (Dabbagh, 2005; Wilson & Stacey, 2003). Therefore, student-to-student interaction through collaborative online classes enhances learners' model of real-life interaction and allows students the chance to work with partners from different cultural and social backgrounds and perspectives, thereby enhancing learners' team and communication skills, as well as their global awareness.

For example, when teaching BOCS, the entrepreneurial skills on live share trading using ICT, students may set up an online discussion group that focuses on monitoring the markets using fundamental analyses before executing the trades, using asynchronous discussion forums like WhatsApp group chats to advance joint efforts and social negotiation (Dabbagh, 2005). Group areas can be open-ended and un-moderated, allowing students to solicit information from each other, while others can take the form of an organised online discussion (Dabbagh, 2005). In addition, a teacher-to-student interaction takes place when teachers provide meaningful feedback to students who reflect upon the feedback and are able to assess their own understanding of the learning context. Moreover, a student-to-content may also occur when students investigate and research on the content-related information and when they interact with the developer of the learning materials. Generally, an expanded learning space allows students to mingle with peers, mentors and experts from different fields (Egoeze *et al.,* 2018; Saidu *et al.,* 2014; Dessai & Kulkarni, 2012; Wilson & Stacey, 2003) (see 4.3.6). Moreover, technology-facilitated learning extends opportunities for expanding the pool of teachers from different fields; for example, workplace trainers, mentors, business specialists and others, as well as a pool of students from different spheres of life to interact and collaborate (Egoeze *et al.,* 2018).

In addition, when REAL use ICT, for example, Web 2.0, students are afforded extended learning spaces, which are beyond the classroom's walls (both physical and virtual), while bridging learning and instructional spaces across the school, home and the wider community (Jimoyiannis, Tsiotakis, Roussinos & Siorenta, 2013). Thus, the new learning environments offered by Web 2.0 allows the global polity of participative and social networking such as WhatsApp group chats, Facebook pages, informal and reflexive conversation, creation and sharing of multiple perspectives and representations on collaborative content generation in the teaching and learning circumstances (Jimoyiannis *et al*., 2013).

Furthermore, Jimoyiannis *et al*. (2013) and McLoughlin and Lee (2007) suggest that Web 2.0 applications and/or tools dubbed "social software" offer social aspects that promote autonomous communities of learning that occurs when the geographically dispersed stakeholders cooperate through social groups and networks, thus giving each other social feedback. In addition, Web 2.0 is equipped with flexibility and modularity that allows *collaborative remixability*, which allows individuals to co-create, reorganise and recombine what has been shared, recreating new concepts, ideas, forms and services (Jimoyiannis *et al*., 2013; McLoughlin & Lee, 2007). Moreover, the use of ICT, which includes Web2.0, promotes the development of digital communities with high connectivity and universal, demand-driven learning that enhances the need to increase the vision of pedagogy that creates co-producers in learners, teachers and experts, rather than passive customers (Jimoyiannis *et al*., 2013; Jones, 2007; McLoughlin & Lee, 2007).

*Collaborative remixability* promotes "the pronsumers" of content when learning tends to be a participatory, social process that supports learners' personal life, goals and needs (Jimoyiannis *et al*., 2013; Jones, 2007; McLoughlin & Lee, 2007). This is called '*collective intelligence*' *or* '*wisdom of the crowds*', which acknowledges cooperation and sharing of ideas where communities can become significantly more productive than individuals working in isolation (McLoughlin & Lee, 2007). Therefore, Web 2.0 applications address the requirements of current diverse learners, stimulating and enabling their learning experiences, skills and knowledge through customisation, personalisation, and enabling them with rich opportunities for collaboration, interaction and networking in REAL (Jimoyiannis *et al*., 2013; McLoughlin & Lee, 2007). In addition to social software, Web 2.0 also comprises remote desktops known as remote access or remote-control software, which allow an individual to control one computer from another, for example, TeamViewer, which supports creative exchange of ideas through live communication (text, video, and voice-over-IP). It furthermore allows remote printing, works with multiple monitors, can control a remote computer through a desktop programme, a mobile device, or an Internet browser and has a portable version that does not need any installation (Team Viewer, 2019). In the current study, TeamViewer can operate as a platform where trading professionals can teach and disseminate trading skills and knowledge by training and/or teaching students'what to learn (trade)', 'how to learn (trade)' and 'where and with whom students learn (trade)' (Jimoyiannis *et al*., 2013).

### 3.2.4 Use of static and standardised assessment

Assessment refers to methodical gathering of evidence relating to learner achievement and using this evidence to make a ruling about learning, which can be used for summative, formative as well as monitoring and evaluation (CAPS, 2011; Morris, 2011). A summative assessment refers to "assessment of learning" and includes high-stakes consequences, as it is used to judge learners' performance. In addition, formative assessment refers to an assessment for learning that supports teacher's instructional method to students in which its results are used in improving teaching strategies and identifying learning needs rather than judging learners' performance. On the other side, monitoring and evaluation is a process that refers the collection of evidence to judge systems, programmes and procedures that are followed in the education system (Morris, 2011).

Furthermore, Continuous Assessment Policy Statement (CAPS, 2011) defines assessment as a planned, continuous process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment. Moreover, an assessment of business studies when teaching BOCS using ICT must not only cover essential business knowledge, skills and principles, but should also encourage entrepreneurial initiatives, sustainable enterprises and economic growth (demo and live account (CAPS, 2011). Also, Employment of Educators Act suggests that teachers should use the assessment of students creatively so that it serves many constructive purposes, sets high, but attainable standards that are consistent with the levels and abilities of the studentsand that students receive constructive and frequent feedback as a consequence of continuous and varied assessment (ELRC, 2003).

Moreover, Hoadley and Muller (2016) and Ngendahayo and Askell-Williams (2016) assert that standardised and static assessments narrow the curriculum and encourage teachers to test for higher achievement scores. Such assessments compel teachers to teach merely for testing and as 'gaming' the system, which encourages unhealthy competition among schools (Hoadley & Muller, 2016; Ngendahayo & Askell-Williams, 2016). Standardised and static assessments further restrict the breadth and depth of learning where breath usually wins and stimulates a surface and an atomistic approach to learning, which hinders creativity (Aparicio *et al.*, 2016; Hoadley & Muller, 2016). Teachers do not evaluate students in authentic ways, but expect students them to remember, for example, dates, formulae, algorithms, quotations and whole poems without teaching them practical usage of that knowledge (Fox *et al.*, 2018;

Care *et al.*, 2017; Aparicio *et al.*, 2016). This leaves students facing difficulty transferring and applying raw knowledge, which is referred to as 'inert knowledge' to their real-life situation (Fox *et al.*, 2018; Care *et al.*, 2017; Aparicio *et al.*, 2016).

In some instances, standardised and static assessment practices, whether they focus on the monitoring and evaluation of the national education system, hold schools and teachers accountable or otherwise learner results negatively impact on teaching practices and teacher-learner relationships and in certain cases, can restrict learning and teaching (Morris, 2011). For example, high-stakes standardised testing or assessments negate effects on the morale and motivation of learners, as they are forced to compete and pass a grade, enrol in higher education and/or obtain a certificate for them to be labelled "excellent" (Aparicio *et al.*, 2016; Morris, 2011). Furthermore, as part of the 'audit culture', static and standardised assessments are unreasonably and wrongly utilised to correct the social inequities in societies where schools are situated (Hoadley & Muller, 2016). They threaten teacher professionalism, morale and motivation by driving out the 'humane relationship to knowledge', a relationship lying at the heart of genuine professionalism, which may be pedagogically restrictive (Hoadley & Muller, 2016; Kozma, 2009). Moreover, high-stakes assessments do not put only students on the spotlight, but teachers as well; they (high-stakes assessments) promote rewards and punishment for teachers, and they make teachers feel exposed, vulnerable, threatened and defensive, which leads to students not always being put first (Hoadley & Muller, 2016; Kozma, 2009). Teachers then teach for testing, aiming at obtaining a 100% pass rate, following repetitive scripts testing using textbooks (Qhosola, 2016).

Moreover, when teachers assess technologically-based learning tasks, they encounter difficulties preparing and managing them, because they use ICT tools and applications in an automated way, which leads to a static assessment (Jimoyiannis *et al*., 2013). Therefore, it is crucial for teachers to ensure that when assessing, whether at the summative, formative and/or monitoring and evaluation stage, the acquired skills, knowledge and experiences from the assessment given to learners, enable and afford them the platform for the application and implementation in their real-life circumstances within the context of the 4IR era. This means that teachers should refrain from using static and standardised assessments that do not measure the capabilities and skills of 4IR workplace and society (Kozma, 2009). This ensures that teachers do not create a huge gap between school assessments (theory) and the outside world (practice), which may impair the skills learners should use in the technology-enhanced environments required in the 4IR epoch (Kozma, 2009).

### 3.2.5 Need for continuous and professional teacher development

There is a difference between professional development (PD) and continuous professional teachers' development (CPTD). Amadi (2013) describes PD as a process of engaging and establishing teachers with the knowledge, skills and attitudes, aiming at creating, preserving, evaluating and transmitting knowledge through continuous learning. On the other hand, CPTD is a required element in the advancement of the quality and professionalism of teachers (Nzarirwehi & Atuhumuze, 2019; Macheng, 2016). The Department of Basic Education (DoE) and South African Council of Educators Act (SACE) 31 of 2000 declared that professional development has to do with activities that are undertaken by teachers with an aim of enhancing their professional knowledge, understanding, competencies and leadership capacity (Tsotetsi, 2013). Their aim is particularly encapsulated in the mastery of the curriculum and teaching areas, the teaching and facilitating skills, chemistry between and amongst them and learners, as well as other young people (Tsotetsi, 2013). Furthermore, the interest of teachers is in their personal developmental needs and their commitment to their schools, learners' best interests and the well-being of their communities and educational and professional ethics (Tsotetsi, 2013).

Moreover, the Employment of Educators Act 76 of 1998 (EEA) states that teachers should acquire new skills and expertise in, not in one subject only, but more particularly in educational thinking, administration, management, vocational and/or technical areas (ELRC, 2003). It further states that teachers should have a craving for the acquisition of new knowledge and additional skills if they are to make the departmental policy successful and make full utilisation of all the opportunities to become familiar with fresh and further thinking in a number of educational areas. Teachers should use the experience of implementing new thinking to report to colleagues and the DoE on the effects of such new approaches (professional development communities) in education in actual school situations (ELRC, 2003). Furthermore, NEPA asserts that as interpreters and designers of learning programmes and materials, demonstrating their foundational competences, teachers should understand the appropriate content knowledge (CK), pedagogical content knowledge (PCK) and how to integrate this knowledge with other subjects (ELRC, 2003).

However, Mavhunga and Rollnick (2016) state that the lack of CPTD is entrenched in the fact that the DoE adopted and relied on the cascade and "multiplier" approach or training

model when training teachers. Mavhunga and Rollnick (2016) and Darling-Hammond and Richardson (2009) suggest that these "one-shot", "sit-and-get" and train-the-trainer instructional approaches and/or workshops are not sufficient, as they leave teachers confused and frustrated, owing to the huge amount of work that is given from the top to the bottom (that is, national, provincial and district levels). This model promotes conventional ways of teacher development, which makes teachers passive receivers of knowledge (Mavhunga & Rollnick, 2016). Teachers have confessed that irrespective of the thousands of workshops they have attended, as long as the approach has not changed, there would be no change in the classroom (Mavhunga & Rollnick, 2016; Du Plessis & Webb, 2012).

Moreover, due to the ever-changing digital and knowledge era, it is imperative that the CPTD programmes include the integration of ICT into the teaching and learning situation. However, extant literature shows that conventional tools, like office application, multimedia, educational software, etcetera, are in most cases applied only slightly and as an isolated 'add-on' effect in educational settings by teachers, rather than as a learning instrument that supports learners' active and flexible learning (Tsiotakis & Jimoyiannis, 2016). This means that when teaching, teachers heavily rely on "teaching the tools" and put light emphasis on "using the tools", which is another obstacle to the adoption of ICT (Aghaee & Keller, 2016; Tinio, 2003). This reveals the fact that teachers' lack of confidence and competence in ICT largely hampers its use in the classroom (Sithole, 2012). It is therefore rational to assert that when learning opportunities offered by Web 2.0 tools prevail, teachers become less receptive than learners, which makes it difficult for them to offer students learning activities that are directed by and related to Web 2.0, which requires more time as its design and preparation involve much work, at both technical and at pedagogical levels (Tsiotakis & Jimoyiannis, 2016).

Moreover, the CPTD is further impaired by several factors, like inadequate resources experienced by most of the states, time limitation and tight schedules. These barriers hinder teachers from attending CPTD programmes. In addition, teachers do not attend CPTD programmes because they do not get sufficient support from school leadership and do not receive any reward from the state for participating in the programmes, thus they lack motivation (Egoeze *et al.,* 2018; Dintoe, 2017; Macheng, 2016; Mavhunga & Rollnick, 2016). Therefore, literature explicitly states that teachers are sometimes denied the right to learn in a way that they view as most effective in supporting student learning and they participate in a primarily passive manner, with minimal or denied opportunities to reveal and

exercise their experience to share their thoughts or understandings of the teaching and learning materials (Aghaee & Keller, 2016; Tinio, 2003). It should then be noted that teachers can best absorb knowledge by studying, performing, and reflecting; cooperating with other teachers; looking closely at students and their work; and sharing experiences (Rock & Wilson, 2005). Therefore, it is imperative that when teachers are professionally developed, new, dynamic and collaborative methods of development are used to ensure that an effective and efficient teaching and learning environment is created for both themselves and students when teaching BOCS, the entrepreneurial skills on live trading of shares using ICT.

## 3.3 COMPONENTS FOR THE USE OF A STRATEGY TO TEACH BOCS USING ICT

### 3.3.1 Establishing a coordinating, collaborative and dedicated inter-sectorial team

The establishment of the team is crucial for the infusion of both theory and practice and for the effective and efficient teaching of BOCS, the live trading of shares using ICT. Dhurup *et al.* (2016) declare that teamwork promotes a deep learning approach that occurs through communication, problem-solving, cooperation and collaboration. Furthermore, Powell (2008) declares that the success of the team transpires only from the correct collaborations, which promote teamwork and co-creation with the complex and richest diversity of skills, knowledge and competences, which is the key aspect in the teaching of BOCS, the live trading of shares using ICT. For instance, Wilson and Stacey (2004) theorise that the students' learning process is attained through collaborative behaviours, from their sharing the diverse perspectives of the other group members to being able to seek feedback and clarify ideas through the group's communication, either electronically or other forms of communication, stimulated by the electronic group communication. Moreover, a professional learning communities (PLCs) is one of the team's approaches that is defined by Dogan, Tatik and Yurtseven (2017) as a group of professionals who share and discuss their practice and student learning in a systemic, uninterrupted, collaborative and thoughtful manner. They further viewed PLCs as a strategy that has gathered interest from both practitioners and policymakers internally and externally to promote peer coaching teams that would match the complexity or newness of the desired output which, in this context, is the teacher-learning and/or training designed to meet learners' needs. This is called social capital, which epitomises collective knowledge, cultural assets, skills, competences and networks of a civic

society (Carland & Carland, 2004; Joyce & Showers, 2002) that can be used to enhance the infusion of theory and practice in the teaching of BOCS, the live trading of shares using ICT. Additionally, Dogan *et al.* (2017) suggest that literature suggests six dimensions of PLCs, which are:

- **Shared and supportive leadership**: This dimension promotes interaction, mutual participation and the making of collective and shared decisions between principals and teachers in a safe environment in the teaching and learning of BOCS, the live trading of shares using ICT. When principals distribute their power, authority and decision-making equally, leadership becomes supportive and shared. Supportive principals listen and lead from the centre, not from the top with more learning, orchestrating, and leading than controlling and championing teachers for professional development efforts towards improving student learning of BOCS, the live trading of shares using ICT in the school.
- **Shared values and vision**: The dimension stipulates that there should be a sense of common purpose, practices, behaviours, beliefs, values, and/or mission among the co-researchers in the teaching and learning of BOCS, using ICT. They argue that a lack of a common purpose may lead to misunderstanding, conflict and mistrust among the co-researchers thus imploring for an undeviating focus on learner learning.
- **Collective learning and application**: This is imperative for all co-researchers to collectively network, discuss, deliberate on data, and deduce findings in the teaching and learning of BOCS, the live trading of shares using ICT. Collective learning includes partnership and PLCs further share by producing knowledge for both the individual and the common good.
- **Shared personal practice**: This is a collective discussion between and among the members of PLCs, helps to precisely detect the challenges, and thus recommend prospective solutions, and can construct a design for the application of new skills and knowledge in the teaching of BOCS, the live trading of shares using ICT. The main aim is to look for answers in a community for a better understanding of what they can do. It also promotes regular class visits for individual teachers' professional behaviours to improve the teaching practice of teachers. These cooperative actions improve teachers' professional behaviour.
- **Relationship as supportive conditions**: Relationships as supportive conditions, involve PLCs members who respond and accept feedback from students' learning as

an important structure. It also involves trust among teachers' intellectual and emotional skills as human factors to support PLCs, and to maintain positive attitudes towards colleagues.

- **Physical factors as supportive conditions**: Structures, as supportive conditions refer to the physical factors that help PLCs function effectively, that is, time, places, physical proximity of teachers and instruments through which teachers communicate.

Moreover, McLoughlin and Lee (2007) assert that the establishment of a team is also possible and viable with the profound and multi-faceted growth in communication and interaction capability, through the use of ICT. This is further elucidated by McLoughlin and Lee (2007) who state that the use of ICT, particularly social software, ensures and allows the users (the team) to collaboratively and cooperatively mix, amend, re-combine and co-create with the use of concepts, practices and attitudes, as well as new and informed content knowledge. This, according to him, enables the team members to become the "prosumers" (both consumers and producers) of the content knowledge and skills. This "architecture of participation", the generation and sharing of digital artefacts by groups, teams and individuals ensure collective intelligence or "wisdom of crowds" (McLoughlin & Lee, 2007). It also acknowledges that when working cooperatively and sharing ideas, communities, the community of teachers in this case, students and other external stakeholders, can be significantly more productive than individuals working in isolation when teaching BOCS, the live trading of shares using ICT (McLoughlin & Lee, 2007). Likewise, NEPA asserts that Business Studies teachers as leaders, administrators and managers, demonstrate their practical capabilities in the teaching of BOCS using ICT, should be able to work with other practitioners in team-teaching and participative decision-making (ELRC, 2003). NEPA also asserts that they should access and work in partnership with professional services and other resources in order to offer support for students (ELRC, 2003).

### 3.3.2 Collaborative planning and preparation

Collaboration and teamwork begin in the planning process (Xiaofeng *et al.,* 2015) and this is where collaborative lessons could be planned. Collaborative lesson planning (CLP) is defined by Xiaofeng *et al.* (2015) as teachers' shared efforts in planning for their lessons in scheduled meetings, which are composed of three main steps, namely selecting the concept to be taught, lesson preparation and the subsequent interview. CLP involves a peer-coaching process

which amalgamates the co-constructions of knowledge, skills and experiences that reduce teacher isolation. Through the aid of CLP, teachers explore, engage and develop practical teaching and learning methods and strategies that provide and offer them a platform for professional curriculum development where assessment methods can also be tested (Xiaofeng *et al.*, 2015).

Proactive and productive use of peers for problem-solving observations, collaborative teaching and planning were more successful in transferring new skills to their own practice (Joyce & Showers, 2002). Similarly, NEPA also certifies that teachers, as leaders, administrators and managers, should ensure that they work with other practitioners in team-teaching and participative decision-making (ELRC, 2003). Further, they should also access and work in partnership with professional services and other resources to ensure the provision of constant support for students(ELRC, 2003). Hence, teachers should collaboratively draw up lesson plans with other stakeholders, considering all the activities involved and the resources to be used during the teaching and learning process.

Moreover, CLP is seen as being productive, effective and efficient when colleagues, who are teaching the same subject inside and outside the school environment with dynamic skills, knowledge and experience, cooperatively and collaboratively plan a lesson (Qhosola, 2016). This has a ripple effect on learner's content knowledge and skills and covers a wider scope of work, as parents get involved in their children's education. simultaneously students (Qhosola, 2016). For example, Finland, which is perceived to have the best education system, allows their teachers to collaboratively design the curriculum together with their municipalities to ensure that they produce students with the relevant skills and knowledge that would enable them to partake in self-employment or to be relevant for work in the municipality, as well as the whole country's employment needs (Ngendahayo & Askell-Williams, 2016).

In addition, the Japanese lesson study is one of the enquiry professional development models where CLP is executed and has been extensively and successfully used in Japan and has now captured the attention of various countries, like the United States of America (USA) (Mavhunga & Rollnick, 2016; Rock & Wilson, 2005). In fact, a lesson study entails a group of teachers meeting regularly over a period of time to design, implement test, and improve one or several "research lessons" (Jita & Mokhele, 2014; Rock & Wilson, 2005). Research lessons are actual classroom lessons taught to a teacher's own students. They focus on: (a) a specific teacher-generated problem, a goal or vision of pedagogical practice; (b) teachers'

collaborative planning; (c) lesson observation; (d) records for analysis and reflection, and (e) discussions by members of the study lesson, other colleagues, administrators, and/or an invited commentator. Rock and Wilson (2005) discovered that Japanese teachers were enabled to move from a "teaching-as-telling" approach to the "teaching-for-understanding" approach through intense studying and sharing during lesson study. They also regularly credit research lessons as the key to individual, school-wide and national improvement of teaching (Rock & Wilson, 2005). Through lesson study, Business Studies teachers, when teaching BOCS, the live trading of shares using ICT, learn best when they systematically study their subject in a way that permits verbalisation of the thoughts and knowledge of what they have learned (Rock & Wilson, 2005).

Further, CLP can also be conducted using the Internet through online community of practice (CoP), which is a platform where individuals and/or a group of like-minded people share resources, expertise, and working strategies; hence, there is collaboration in problem-solving, which enhances organisational performance (Xiaofeng *et al.*, 2015; Dabbagh, 2005). CLP, through online CoP, conveniently expands the breadth and depth of the lesson planning process (Xiaofeng *et al.*, 2015), with colleagues in one school, teachers from different schools but teaching the same subject, studentsand other relevant internal and external stakeholders through the use of the current social software tools, like WhatsApp group chats, Facebook pages and emails (McLoughlin & Lee, 2007). This suggests that ICT tools do not only enhance and support social interaction, discussing feedback and networking, but are also endowed with flexibility and modularity that permits what is called 'collaborative remix-ability' between and among different stakeholders. Given the above scenario, this means that the utilisation of ICT enriches the synergistic and collaborative interchangeable and transformative process where the information and skills acquired by numerous and relevant individuals (users), is shared and reorganised, recombined and reconstructed, ensuring that there is a recreation of new forms, concepts, ideas, mash-ups and services when CLP is executed (McLoughlin & Lee, 2007).

Although CLP is vital, its effectiveness is dependent on the fact that sufficient time is given to vocational subjects like Business Studies so that theory is infused with practice when teaching BOCS, the entrepreneurial skills on live share trading using ICT. For this reason, it is imperative that when the timetable is drafted, vocational subjects like Business Studies should be considered to ensure that the teachers do not produce students with high quality

academic results (marks) only, but well-balanced students who can practically apply what they have acquired from the classroom in their real-life situations.

For instance, to eliminate timetable-related constraints, the impact of ICT on schools: classroom design and curriculum delivery in Wellington, Samuel Mardson Collegiate School, and MLC school in Sydney have created a more flexible timetable to provide a "line-day" every second Tuesday of the month to mingle theory and practice. The "line-day" timetable requires every department in the school to give one period a week so as to obtain a full day every six weeks for particular subjects such as Business Studies (Eadie, 2000). However, Mathematics lessons are not scheduled for "line-day", due to the nature of their content (numbers) which does not need practicals. In addition, all exams are held on Tuesdays and there is no homework on that particular day. Moreover, line-day leads to more flexibility, thereby allowing more project-based study and extended time for teachers to plan and effectively and efficiently teach practical lessons (Eadie, 2000).

On the other hand, at the United Kingdom-based Leosowes School, every Friday is a flexi-Friday, where one subject is studied from 8.30 in the morning until 1.30 in the afternoon to ensure that theory is infused with practice (Eadie, 2000). For instance, in the current study, to eliminate the outcry on time constraints that curb the infusion of theory and practice, Business Studies teachers, for example, can teach theory (types of shares, advantages, disadvantages, the technical tools, fundamentals and any other theoretical information) for four days and practical (the live share trading) is taught for the whole of the 'line-day' and/or flexi-Friday earmarked for Business Studies. The practical "line-day" and/or flexi-Friday can always be done with the help of relevant external stakeholders (business people professional traders) to ensure the mingling of theory and practice. For this reason, students can have ample time to **analyse** share trading markets, practically **execute** trades (buy and sell) and **present** their portfolios (demo/live) trading accounts practically utilising computers, data projectors, the Internet/WiFi etcetera, for the whole class or the rest of the school. As a result, this automatically instils the culture and spirit of entrepreneurialism in learners, as required and suggested by different stakeholders.

### 3.3.3 Adapting to REAL using ICT

There are different strategies and/or approaches that may be utilised by teachers to adapt to REAL to mingle theory and practice to ensure that they produce students with skills that can

be implemented on the current 4IR era in their real-life situations. For instance, Babson College, which is a leading school of entrepreneurship in United States of America, makes its classrooms "living laboratories" where all the resources and equipment necessary for the creation of REAL are made available (DeJaeghere, 2017). This is done to ensure the infusion of theory and practice. These strategies and/or approaches include the Three Stream Model, mini-enterprises, prediction markets (PM), company visits, academic enterprise (AE) and practice firm (PF) or virtual firm (VF). In the next segment each strategy is discussed to clarify its practical implementation in the current study.

The Three Stream Model is a South African strategy that was established and recommended by the Portfolio Committee on Basic Education to cultivate entrepreneurial spirit in students while they are still at school. The committee commended the DBE to implement the Three Stream Model in the South African curriculum after meeting on the 8$^{th}$ of May 2018. The Three Stream Model is delineated into three pathways, namely the academic, technical-vocational and technical-occupational, which respond to the National Development Plan 2030 (NDP). This would ensure that students acquire and reflect on the skills and competencies that would mould them as effective and successful global citizens that could operate as entrepreneurs in the 4IR while they are still in the school and after exiting the school system. As a result, seeing that entrepreneurship could provide solutions to social and economic issues, the Human Resources Development Council of South Africa (HRDCSA) created a technical team mandated to set the national recommendations on entrepreneurship and social entrepreneurship to address youth unemployment. HRDCSA has identified the DBE as an implementing agent and as part of the sector's plan on entrepreneurship in schools and had proposed four key result areas (KRAs). KRA 1 involved collaborating with the Foundational Learning Task Team, KRA 2 introduced mandatory entrepreneurship education, KRA 3 sought to provide teacher training for new and existing teachers, and KRA 4 had to do with encouraging businesses to engage with local educational institutions (The Portfolio Committee on Education, 2018). These key result areas tally with what the proposed strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT, intends to do.

The DBE indicated its readiness in terms of the teaching and training of students to equip them with the skills and competences required for them to operate in the 4IR. Accordingly, it has begun with problematic advancements arising in three territories, namely the Eastern Cape, Gauteng and the Free State, which are currently chosen through the Lego Foundation.

The critical parts of the advanced abilities required were the data and information education, correspondence and cooperation, computerised content creation, security and critical thinking. To check the feasibility of the strategy, entrepreneurship is found to be alive in some parts of South Africa, even though it is not as fast as the DBE would like it to be (The Portfolio Committee on Education, 2018).

For instance, students from the Eastern Cape entered the Global Entrepreneurship competition competing with over 5 900 schools from 110 countries and they came first in the world. This shows that South Africa is ready to take off in the 4IR era. In addition, this indicates that the DBE has strengthened its relationship with industry, which helped in curriculum development and is now on board in sponsoring and funding subjects with activities that are preparing students for work. For example, the Manufacturing, Engineering and Related Sector Education and Training Authority (MERSETA) had adopted one school per province and have signed the memorandum of agreement with the DBE to work together (The Portfolio Committee on Education, 2018).

In addition, to adapt REAL, Botswana's Business Studies syllabus includes *mini-enterprises,* which are compulsory and simulated as co-curricular activities (Sithole, 2012). They are complemented by a non-profit organisation, Junior Achievement Botswana (JAB) with clubs in schools aiming at inculcating the spirit of entrepreneurship in learners, as well as enhancing work readiness in the world of work (Sithole, 2012). When using the mini-enterprise methodology, students contend in groups, thus advancing collaboration through business recreations in genuine business. Students accept the roles of corporate administrators, making weekly choices on value creation, promoting innovative work, and plant limit (Sithole, 2012). They examine industrial reports, monetary records, benefit and misfortune proclamations and economic situations, making their choices and submitting them on a weekly basis (Sithole, 2012). This ensures and promotes the use of REAL, ensuring that theory and practice are infused, that is, the entrepreneurial knowledge and skills acquired in the classroom are practically implemented in the learner's real-life world.

In addition, another strategy that might be used in REAL is the **Prediction Market** (PM), the educational process which is an innovative pedagogical tool that can create and enhance teaching and learning (Buckley, Garvey & McGrath, 2011; Gangur & Martinčík, 2011). PM is used as important technical activities that stimulate understanding and excitement and enhance interest in lessons for both teachers and students (Gangur & Martinčík, 2011).

Further, PM is designed to forecast excavate and combine information that is dispersed among the group of traders and successively utilising this data in the form of market values, enabling students to forecast on specific real-world future events (Buckley*et al.*, 2011; Gangur & Martinčík, 2011). In fact, the interest in using the new PM application is that it helps students to focus on forecasting (market analysis using fundamentals and technical analysis in the current study), decision-making (on whether to buy or sell shares), and risk management (using the stop/loss technical tool/do not invest/trade more than what you cannot afford to lose) before trades are executed (Wolfers & Zitzewitz, 2006).

For instance, one of the components of PM is free market, an electronic prediction market, which is an online simulation game (trading demo account), which has been running since November 2007 in the Faculty of Economics, at the University of West Bohemia, Czech Republic in Pilsen (Gangur & Martinčík, 2011). In the FM, shares are divided into four areas, namely politics, sport, entertainment and economics. When the co-researchers (students) register for the first time, they are allowed to have a *portfolio* (trading account) that is composed of an endowment of 5,000 credits (money units, points) (from R500000-R1000000 on a demo account). They are allowed to have 10,000 credits when passing their exam to become a FM broker and for them to receive an FM broker number. Co-researchers can simultaneously pass the exam with practical training of trading in an e-learning course, which supplements the FM system. In the current study, a free market could be a ***"demo" account*** from *Easyequities broker* where students are trading *Top 40* companies from the Johannesburg Securities Exchange (JSE). A demo trading account could be an online simulation game where live (infusion of theory and practice) share trading is executed. Easyequities is selected for the current study as no spread (the costs one pays to the broker for trading) is paid for the execution of trades (it is free), which is convenient for the learners. A demo account has an equity of R1000 000, which would allow students to freely learn how to trade until they fully master it without fear that money would disappear from the account. Instead of getting credits when passing their exam, students in the current study after they have fully mastered trading, would be allowed to trade on *"Live" accounts* for profits. This would enable students to get profit from their businesses, "live trading accounts", which would be the direct *"by-products"* of their entrepreneurial studies (BOCS) (DeJaeghere, 2017).

The portfolios of the FM and Easyequities differ dramatically while similarities can be noted here and there. Therefore, there is need to indicate the difference between the two for the current study. The FM portfolios of the co-researchers should have the following design:

1. Forecasting goal choice:
    a) Forecasting: technical analysis, fundamental and sentimental analysis (for example, Top 40 companies in JSE);
    b) Pay-off function: False assessment (0 points), true assessment (100 points);
    c) Duration: Continuously until they finish the course
2. Access to funding: Open to business studies students only;
3. Encouragements for participation and information revelation:
    a) Composition of initial portfolios: 10000 points (R10 000 equity);
    b) Provision of loans: Strictly no loans for students;
    c) Remuneration for learners: 5 % of learners' profits are withdraw- able;
    d) Non-monetary rewards: No rewards;
    e) Play money (tournament);
    f) Time interval: Period for theory and for trading practically;
    g) Incentive based on performance: Each time students made 75% profit, they may withdraw.
4. Financial market design:
    a) Action type: Double auction trading mechanism with open order book;
    b) Trading times: (During weekdays when at school);
    c) Short trading: (No long-term investment);
    d) Order types: Buy or sell (amount and price);
    e) Trading fee: Spread sheet (%);
    f) Position limits, price limits: 3 positions per day (buy/sell).

The students have an allowance login system to FM, controlled by the University to ensure that students have only one trading account. The FM system interconnects with the Learning Management System (LMS), which belongs to the scheme of incentives of FM, which allows students to transfer their earned points to the course credits t an announced rate,1:5,000 for inclusion and 1: 50,000 for the exam. Co-researchers manage the transfer of their credits themselves, which are moved into the LMS course as an evaluation of the off-line assignment, FM, which makes them eligible for inclusion. In addition, unused credits are also

added to the final results of the exam as additional credits. In order to motivate students to always participate in trading, the FM "inflation" system and the automatic issuance of new stock, which is beneficial to students, was implemented (Gangur & Martinčík, 2011). The use of the FM (Easyequities demo account) therefore, enriches and cultivates learners' entrepreneurial spirit and fosters the infusion of theory and practice, which enables students to acquire the skills and experiences of trading while they are still at school. As a result, the entrepreneurial knowledge, skills, experiences and values of students are stimulated in the teaching of BOCS, the live share trading using ICT. The use of this strategy would promote social transformation as students would become productive citizens who would be participating in the economic activities of the country, ensuring that the educational imbalances of the past are re-dressed (DBE, 2011).

Further, the Arcadia University of Applied Science, Helsinki, has a well-established tradition of making teaching as concrete as possible, which involves company visits by students and of inviting alumni guest lecturers to come and share their own entrepreneurial experiences with the students in the classroom (DeJaeghere, 2017). Therefore, during and after the visit, through activities, students simulate the creation of a venture; however, some students start their own live companies as a direct by-product of their entrepreneurial studies (DeJaeghere, 2017). For example, in the current study, students may visit trading companies where the actual live share trading occurs, to personally observe and practically execute trading. Alternatively, a professional trader may be invited to school and share their own entrepreneurial knowledge, skills and experiences with students during Business Studies lessons. This would help cultivate, instil and enhance the entrepreneurial spirit of the leaners through the application of the classroom-acquired trading skills to the real-life experiences of the learners; hence, the mingling of theory and practice in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT.

Moreover, to adapt to REAL, teachers may utilise a model that was established by Salford University in the United Kingdom, called Academic Enterprise (AE) (Powell, 2008). This model was created with the aim of enabling and enhancing the academics to creatively work in enterprise partnerships to transform novel yet robust ideas, inventions, approaches and technologies into actual improvements with practice partners, namely the local businesses, industries and the community (Powell, 2008). AE provides the platform where academics and their practice partners together share their daring insights, knowledge, skills and experiences for mutual benefit (Powell, 2008). For its prosperity, colleges give spaces and freedom to all

accomplices to think 'the inconceivable', thoroughly test thoughts, motivate and transform creative minds into practical hypotheses, which is at times depicted as 'ivory tower' thinking (Powell, 2008). Through AE, the worldwide information economy for all parties therefore increasingly work in a trans-disciplinary and synergistic way that advances innovative and cost-effective future enabled by technologies, products and processes. In addition, these parties work in intricate environments and systems where human wants and demands continually change (Powell, 2008).

The success of the AE model lies in the possession and engendering of the four crucial human enterprise skills by the academics. For this reason, the academics must possess the most indispensable human enterprise skill called the foresight enabling skill, which necessitates a swift change of their abstract to a re-formulated mind-set with regard to their findings or a theory development into something valuable and useable (Powell, 2008). A transformed academic's mind-set could lead to a practical reality in creating businesses that could help their external partners to understand what they are required to do (Powell, 2008). Moreover, the academic business acumen is the second human enterprise skill, which does not necessarily oblige academics to become business people. Rather, it enhances**,** nurtures and empowers them for creative, concrete and reasonable conversations and sensitive arguments with partners from business, industry or the community for meaningful and mutual understanding in any joint business (Powell, 2008). Furthermore, the third one is individual performance skill, which aimed at stimulating an academic's inward personal, individual performance to sharpen their skills to perfection. Through this skill, academics are rewarded through incentives or promoted by the university to sustain continuous professional improvement in their academic performance (Powell, 2008). Finally, the social network intelligence enterprising skills are also significant to induce teamwork skills to academics, enabling them to collaboratively work together with other team members with complementary skills. This skill binds and ties all other skills together and it enhances synergy and socialisation that develops creative teamwork, which leads to new and higher levels of innovation (Powell, 2008).

Therefore, relating AE to the current study means that teachers, as academics, should work in an enterprise partnership with the inter-sectorial stakeholders, who are professional traders, LED managers and other stakeholders to transform novel, yet robust ideas, innovations, teaching approaches and techniques to enhance their knowledge (theory) in the teaching of BOCS, the entrepreneurial skills on live share trading using information technologies in the

4IR. In the current study, this practice is called Real-Life Situation Strategy (RLSS) where teachers' entrepreneurial knowledge (theory) in BOCS is infused with practical entrepreneurial knowledge and live share trading skills using ICT. In addition, these inter-sectorial stakeholders work in REAL where teachers' teaching methods and techniques, as well as learners' way of learning continually change, if teachers possess the most indispensable human enterprise skills, as discussed above.

Moreover, to mingle theory and practice, Europe uses a strategy called practice firm (PF), also known as practice enterprise, a practical new learning system that enhances and stimulates the infusion of theoretical classroom-based learning and practice (Krasniqi, Topxhiu & Pula, 2011). PF also stimulates real business and entrepreneurial thinking and tackles the problem of "no job experiences, no experience without a job" (Krasniqi *et al*., 2011). In the United States of America, this learning method is known as virtual enterprise (VE) and virtual company (VC) in Asia. For the purpose of this study, the term 'practice firm' is used. PF, a practice-oriented learning system, ensures that students after the infusion of theory and practical entrepreneurial experience, skills and knowledge, can apply the real firms' business procedures and processes leading them to the acquiring of the sufficient qualifications for the modern labour market (Tampieri, 2016; Krasniqi *et al.,* 2011). Therefore, learning is replaced with the practice in businesses by "bringing the business enterprise at the school" (Krasniqi *et al*., 2011). Ample understanding for students in business processes and their feeling of being in a realistic workplace condition is enhanced although it remains primarily an educational institution and the most innovative didactical and pedagogical concepts (Krasniqi *et al.,* 2011).

For example, EUROPEN, a non-profit organisation (NPO), is a Europe-based PF that promotes life-long learning, practical business education, learning by doing, personalised training, soft skills training, flexible training methodology and education to meet the demands of the dynamic business world and quality imprint education (Tampieri, 2016; Krasniqi *et al.,* 2011). Again, in Austria, organisations such as PF have passed from input orientated (theory) to an output orientated approach (practical learning) and produces competences and skills learning outcomes that are demonstrated and evaluated (Krasniqi *et al*., 2011).

All the strategies discussed above are specific to the current study and could be utilised in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. For example, the four enterprising human skills are crucial for Business Studies teachers when

teaching BOCS as they hone, enhance and enable them to infuse their abstract knowledge with the insightful and practical knowledge, skills and real-life experience of the external stakeholders to mingle theory and practice, when implementing whichever strategy. Therefore, adapting to REAL in the 4IR epoch is crucial, ensuring and aligning students with the world of work rather than producing them merely for white collar employment.

### 3.3.4 Dynamic and practical assessment practices

Therefore, it is imperative that when assessing students on BOCS, entrepreneurial skills on live share trading, teachers teach and train them to use the investment software (IS) (Easiequities) to execute the live share trading as it (IS) is aligned with the 4IR. Thus, if teachers have to change from a conventional teaching environment to acquiring a new skill-set to teach in a contemporary learning environment, they also have to adapt to a new approach of "e-assessment" (Elliott, 2008). The NEPA notes that instructors should utilise distinctive appraisal practises, with a specific accentuation on ability-based evaluation and the developmental utilisation of evaluation, specifically consistent and symptomatic types of appraisal (ELRC, 2003). It expresses the notion that instructors ought to comprehend a scope of appraisal approaches and strategies suitable to the BOCS and that they ought to consider fittingness of evaluation choices made specifically for learning circumstances (the teaching of useful exchanging) and changing the evaluation assignments and approaches where it is essential. This ensures that assessments best suit REAL to enhance learners' existing and new skills and knowledge aligned with the 4IR model, forming part of their everyday activities. The following table (Table 3.1) contrasts conventional assessment with "modernised" assessment that best suits the REAL approach, which is aligned with the 4IR:

***Table 3.1: Contrasts of conventional assessment with "modernised" assessment***

| **Traditional** | **Modernised** |
|---|---|
| Pre-arranged | Discoursed |
| Done alone | Done cooperatively |
| Descriptive | Explored/Deep |
| Text | Text/audio/video |
| Closed book | Open web |

| | |
|---|---|
| Done in class | Done anywhere |
| Teacher evaluated | Self-and peer-assessed |

**(Adapted from: Elliot, 2008)**

REAL foster deep learning, as they ensure that students are collaboratively involved in all spheres of the teaching and learning process, including assessment. Elliot (2008) suggests that an assessment system should be; realistic**,** ensuring that it involves learner's real-world knowledge and skills; personalised such that knowledge and skills are tailored towards the best interests of each learner; negotiated and agreed upon between students and teachers; engaging to an extent that the personal interests of the learner are involved; recognising existing skills by infusing and accrediting learner's existing skills, knowledge and work; deep in a way that assesses deep knowledge and discourages memorisation; problem oriented, ensuring that students are given original tasks that require proper and genuine problem-solving skills; collaboratively produced in partnership with leaners; peer and self-assessed, involving self-reflection, as well as peer review; and tool supported, which promotes and encourages the use of ICT. These forms of assessment are best realised when they are naturally occurring out of personal interest or already in existence; obtained from multimedia in text, audio and video format; could be digital where email, instant message logs blog posts, wiki contributions, audio and video recordings and should be distributed and scattered across various sources (Elliot, 2008).

Furthermore, a realistic assessment (activities) requires students to perform realistic tasks (assignment) in a realistic context (Neely & Tucker, 2012), which is relevant to the learner's interests and goals and makes them see the direct implications of their actions and apply the knowledge gained in real-world situations (Dabbagh, 2005). Colleges and universities in the United States of America are compelled by the Title IV of the Higher Education Act of 1965, and the Higher Education Opportunity Act of 2008, to apply assessment methods, practices and outcomes at the institutional, programme and course levels that prepare students for gainful employment (Neely & Tucker, 2012). The emphasis was on filling the gap on the skills required by employers from the first-time job seekers and the skills provided by the classroom. This necessitated the re-designing of the curriculum such that it includes the application of problem-solving, communication and analytical skills (Neely & Tucker, 2012).

Additionally, calls for computer-based business simulations, as realistic assessment methods, were advocated after the reports from the survey done by the Altimeter Group, who found that real-world business experience was the skill that employers wanted from the business graduates (Neely & Tucker, 2012). Similarly, real-world scenarios, (simulations) perform activities that professionals execute in their everyday jobs when properly designed. For instance, the Arcadia University of Applied Science, Helsinki, through its tradition of initiating company visits by students and inviting alumni guest lecturers to share their own entrepreneurial experiences with students in class, simulate the creation of a venture where students start their own live companies as a direct by-product of their entrepreneurial studies (DeJaeghere, 2017).

Similarly, the University's administrators, advisory board members, and the Business Faculty through faculty committee, integrated realistic tasks that enhance real-life problem-solving skills in the course for business graduates as required by business leaders. More real-world tasks (computer-based testing and business simulations) were created and infused in the business programme. Even though it is challenging to evaluate the actual learning that occurs through simulations, they allow students to interact with complex systems and ideas and provide them with opportunities to practice real-life skills that they need to apply in the real-life workplace (see 4.3.6 and 4.3.7).

The importance of realistic assessment has spread amidst calls for greater accountability and criticisms of poorly prepared BOCS students exiting Grade 12 (Neely & Tucker, 2012). Furthermore, there is a need for various external constituencies regarding the skills students can demonstrate after graduating from school and in the workplace to solve realistic and often complex problems (Neely & Tucker, 2012). Barber, King and Buchanan (2015) state that realistic tasks and/or assessments should include the relevance of the real-world situations. Moreover, Kozma (2009) states that in authentic tasks in the outside world, BOCS knowledge is applied within and across disciplinary boundaries along with other skills to solve real-world problems, create cultural artefacts and generate new knowledge (see 4.3.7).

Given the above situation, the South African Education Portfolio Committee reported that to ensure dynamic and accessible assessment, the Teacher Assessment Resource for Monitoring and Improving Instruction (TARMII) had been piloted by the DBE in two provincial education departments (PEDs), which serves as an online platform for teacher and learner support in terms of assessment. Resultantly, the DBE has planned to change from the written

mode of assessments to modernised exams, called e-exams, the modernisation of the business intelligence system, the online registration system and online re-marking system, towards digital content development to match the 4IR. In addition, the DBE stated that projects which are realistic assessments, during the 4IR, could be used as an exam which is called performance assessment (The Portfolio Committee on Education, 2018).

### 3.3.5 Promoting continuous and professional teacher development programmes

Macheng (2016) and Amadi (2013) posit that Continuous Professional Teacher Development (CPTD) is one of the major elements required in the advancement of the quality and professionalism of a teacher. This suggests that teachers should not be regarded as finished products that are used up once produced, but they should constantly be developed and trained after they have undergone their first training (Nzarirwehi & Atuhumuze, 2019; Macheng, 2016). This would ensure that they do not become redundant but always align themselves with current eras. Further, Amadi (2013) states that (CPTD) is a process teachers engaged in to enhance the knowledge, skills and attitudes with an aim of creating, preserving, evaluating and transmitting knowledge through continuing learning.

Moreover, du Plessis and Webb (2012) suggest that for teachers to experience an enjoyable and useful CPTD, they should be encouraged to collaboratively recognise their needs and the assistance they require. Furthermore, during the CPTP, teachers should also solve their problems, share expertise and experiences. The use of specific instructional approaches and/or software within the classroom and training in real-life contexts should also be discussed (du Plessis & Webb, 2012). Further, EEA states that teachers should acquire further and new skills and expertise in, not only their specific subjects, but especially in educational thinking, administration, management, vocational and/or technical areas (ELRC, 2003). It further states that teachers should aspire to acquire new knowledge and additional skills if they are to make the departmental policy successful and to use the all opportunities to become familiar with fresh and further thinking in a number of educational areas. NEPA further stated that educators in a community, citizenship and pastoral role, should reflect on systems of on-going professional development for existing and new educators in the teaching of BOCS using ICT (ELRC, 2003).

Likewise, Carlson and Gadio (2002) posit that teachers' lifelong professional readiness and growth should be conceptualised in at least three scopes. First, it is the initial preparation or

pre-service training that provides teachers with a solid foundation of content knowledge and the mastery of the subject matter. Within this scope, teachers' competency should also be improved in classroom management, organisational skills and proficiency in using a variety of educational resources, including technology (Carlson & Gadio, 2002).

For instance, during their initial preparation, just as in South Africa, Finish primary school teacher education requires teachers to study three main areas, which are: (i) the theory of education; (ii) pedagogical content knowledge and (iii) subject didactics and practice in education and Finish secondary school teachers major in their speciality subjects (Ngendahayo & Askell-Williams, 2016). Both primary and secondary school teachers in Finland are compelled to complete a master's degree which takes between five and seven-and-a-half years before they could teach, whereas South African students are required to only obtain a Bachelors' degree in primary (foundation; intermediate and senior phase), and/or secondary school with specialisation in commerce; science or social sciences teaching, which is the only difference (Ngendahayo & Askell-Williams, 2016). When training teachers, universities in Finland use cooperative, problem-based learning, reflective practice and computer-supported teaching strategies, ensuring that trainees possess a balanced knowledge and skills in both theory and practice (Ngendahayo & Askell-Williams, 2016).

Second, Carlson and Gadio (2002) assert that workshops, seminars, and short courses, certified by the government, are required for the lifelong professional preparedness and development of in-service teachers. This suggests that the above-mentioned strategies equip in-service teachers with the structured opportunities that familiarise them with new teaching skills, pedagogical content knowledge and skills development in integrating the use of technology (Carlson & Gadio, 2002). For example, the Japanese lesson study is the professional teachers' development model that develops in-service teachers on the continuing pedagogical and technical support (see 3.2.2) (Mavhunga & Rollnick, 2016; Rock & Wilson, 2005). In addition to the Japanese lesson study, South Africa has also adopted clusters as part of teachers' professional development to share their experiences and knowledge. Jita and Mokhele (2014) concur with Mosia (2016) by stating that clusters fulfil two purposes; firstly, they are regarded as spaces that foster policy implementation and, secondly, teacher-led continuous professional development. It should be noted that the Japanese lesson study can also be used by teachers in clusters as a collaborative planning strategy in a specific subject.

Third, CPTD should provide the continuing pedagogical and technical support for teachers as a responsive dissemination approach to enable them to perform their daily tasks and responsibilities (du Plessis & Webb, 2012; Carlson & Gadio, 2002). It should embrace realistic contexts that reflect the way knowledge should be used in real-life, using genuine activities, which offer access to expert performance and the modelling of the proposed processes. Moreover, the on-going pedagogical and technical support for teachers nurtures the collaborative construction of knowledge; provides opportunities for reflection, discussion and feedback sessions to enable tacit knowledge to be made explicit (du Plessis & Webb, 2012). For instance, to ensure continued pedagogical and technical support for teachers, Darling-Hammond and Richardson (2009) state that in Pine Hills Elementary School in the United States of America, the principal and teachers decided to re-design the professional learning opportunities at the school level. Teachers were permitted to create their own professional development plan on the basis of the goals they selected for their students and were sent for a three-week workshop at a local university. After the workshop, the selected teachers had acquired considerable and deep knowledge on their subjects' teaching strategies and then worked with the district officials to disseminate the knowledge and skills learnt (Darling-Hammond & Richardson, 2009).

In addition, the use of ICT for CPTD on content knowledge and pedagogical content knowledge is crucial. Carlson and Gadio (2002) posit that ICT provides access to better and various educational resources, offers multimedia simulations of good teaching practice, catalysing teacher-to-trainee collaboration and increases the productivity of non-instructional tasks for pre-service teachers. Moreover, ICT enables in-service CPTD through asynchronous learning and individualised training opportunities (Carlson & Gadio, 2002). As a result, the use of ICT for CPTD overcomes and breaks down teachers' isolation brought by the walls of the classrooms. It also lets them collaborate, connect and cooperate with their colleagues, mentors, curriculum experts and the global teacher community, through the use of, for example, WhatsApp groups, Facebook pages, email groups, etcetera (Carlson & Gadio, 2002). Thus, the community of practice (CoP), which is a group of teachers sharing a concern, deepens their knowledge and expertise either face-to-face or electronically.

For example, to ensure the successful integration of ICT, South Africa works with SchoolNet SA, a Section 21, non-profit organisation that played a role in influencing decisions and content in the e-Education White Paper and the Teacher Development Framework. For instance, it strives to provide quality courseware and training for teacher professional

development in ICT integration, using World Ahead, a transformative learning programme that is intended to accompany the Classmate tablet PC's programme (SchoolNet SA, 2012). The training includes promotion of 21st century learning, for example, creativity, collaboration, critical thinking, being self-directed, information literate, and etcetera. Its training with the Classmate PC programme includes a rich source of content and teacher development material (SchoolNet SA, 2012).

## 3.4 CONDITIONS CONDUCIVE TO THE SUCCESSFUL IMPLEMENTATION OF THE STRATEGY TO TEACH BOCS USING ICT

The components of the strategy of teaching BOCS using ICT were discussed in Section 3.3. This section presents the conditions favourable for the purpose of supporting the solutions for the successful implementation of the strategy. The following conditions are discussed: conditions conducive for the inter-sectorial and coordinated team; conditions that are conducive for a shared vision and conditions that support the use of REAL.

### 3.4.1 Conditions conducive for the inter-sectorial and coordinated team

There are many and significant conditions that contribute to the successful running of the team in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. Mosia (2016) states that collective leadership is one of the important conditions that has to be practiced for the successful functionality of the team. For example, Dede (2007) asserts that collective leadership could follow when a school district appoints a team of Business Studies teachers, school administrators, parents, and local business people (professional trader) to develop a plan for improving learners' educational outcomes in BOCS, the entrepreneurial skills on live share trading using ICT. Also, for PLC to be effective, the human and social assets required includes supportive leadership, mutual respect steeped in strong professional knowledge, and a climate that invites risk taking and innovation (Darling-Hammond & Richardson, 2009).

Moreover, Dede (2007) hypothesises that collective leadership is a vital condition for the current conceptual formulations and instructional practices for 21st century performances, collective problem identification and decisions by team members, via mediated interaction. Thus, in the 21st century, knowledge is grounded in a setting and distributed across a

community that works as a team, rather than abstract and isolated within individuals (Care *et al.,* 2017). Therefore, multiple and potential factors include various individual native languages, gender, culture, and socioeconomic status; teachers' experience and content preparation, subject-specific pedagogy, classroom management, and student engagement; state and district policies, related to educational reform, curricular materials (Care*et al.,* 2017) and the availability of ICT at schools, are significant to the achievement of educational performance.

Moreover, devoted collaborative teams should have a 4-D strong structure comprising high-performing members with balanced skills to optimally design tasks and processes s well as norms that promote positive dynamics (Haas & Mortensen, 2016). It should be noted that it is not compelling that each member should possess a superlative technical and social skill, but a healthy dose of both. This means that for the team to be more creative and avoid group discussions, it should ensure that there is different knowledge, views and perspectives, as well as age, gender and race, which is advantageous to the 4-D team. A study conducted at the World Bank determined that teams had a blend of cosmopolitan people from various countries, speaking multiple languages and local people with deep roots in their area (Dressler, Janek, Sager, Kountz, & Gravdal, 2019; Mustapha, Afuba, Enechi, Ejiofor & Olasubulumi, 2018; Haas & Mortensen, 2016).

A cosmopolitan group of individuals brings technical knowledge, skills and expertise that apply to various situations, with locals bringing their indigenous knowledge and insight into areas such as politics, culture, and tastes (Dressler *et al.*, 2019; Mustapha *et al.*, 2018; Haas & Mortensen, 2016). This means that the cosmopolitan team, which comprises both the external and local stakeholders (including Business Studies teachers and learners), brings about skills and knowledge when weaved and blurred together, and what emerges are the multidimensional trading and entrepreneurial skills and knowledge required in the teaching of BOCS using ICT. In addition, conditions that enable the effectiveness of the team are; the right supportive context which involves maintaining a reward system that reinforces good performances, an information system that provides access to the data needed for the work, an educational system that offers training and securing material resources, such as funding and technological assistance (Dressler *et al.,* 2019; Mustapha *et al.*, 2018; Haas & Mortensen, 2016).

### 3.4.2 Conditions conducive to a shared vision

Another condition for an effective team is a shared mind-set, which fosters common identity and understanding between and amongst team members (Dressler *etal.*, 2019; Mustapha *et al.,* 2018;Haas & Mortensen, 2016). The diverse, dispersed, digital dynamic (4-D) teams achieve high performance owing to the compelling direction that energises, orients and engages its members. Teams can only be inspired if they know what they are working towards, particularly clear and explicit stimulating goals. Those goals should be far-reaching where team members gain extrinsic rewards like recognition, pay, and promotions; or intrinsic rewards like satisfaction and a sense of meaning. However, that can only be achieved through a frank, yet vigorous discussion, considering members' dissimilar backgrounds, perspectives and purpose **(**Dressler *et al.*, 2019; Mustapha *et al.,* 2018; Haas & Mortensen, 2016).

### 3.4.3 Conditions that support the effective use of REAL

ICT-supported learning is a significant situation that enhances learners' model of real-life interaction, teaming and communication skills through global awareness and allowing them the opportunity to work with cohorts (peers, mentors and experts) from different backgrounds, cultures and perspectives (Egoeze *et al.*, 2018; Saidu *et al.,* 2014; Dessai & Kulkarni, 2012; Wilson & Stacey, 2003). In the same way, the Education Portfolio Committee declared that the crucial condition created for the 4IR was connectivity, as it had not moved as fast as the DBE expected. Even though Vodacom and UNISA played a very important role in enhancing connectivity, DBE maintains that it had slightly increased from 30% to 64%. Another condition is the number of trained teachers, which was also not increasing as fast as the DBE expected, but digital content could be accessed by teachers and learners, using their own devices and getting service providers to zero-rate access to the use of such content (The Portfolio Committee on Education, 2018).

In the current study, the conducive circumstance for the use of various technologies (the overhead/data projector, laptop, Wifi/Internet) to help students in learning multiple knowledge and skills (live analyses of trading market, opening of demo and live trading accounts, analysing fundamentals, etcetera), using a variety of pedagogies (such as the use of PowerPoint application, modelling, scaffolding, learners' active construction of knowledge,

collaborative learning) and conducting individualised and group formative assessment (Dede, 2007), is prevalent in the teaching and learning of BOCS, the live trading of shares.

## 3.5 THREATS TO AND RISKS THAT THREATEN THE DESIGNING OF THE STRATEGY OF TEACHING BOCS USING ICT

### 3.5.1 Teachers' resistance to change to REAL

Likewise, a study done by Hennessy *et al.* (2010) revealed that teachers' negative attitudes, lack of autonomy, resistance, lack of expertise, skills and knowledge are some of the prominent factors impeding teachers' readiness and confidence in the evaluation of the role and usage of ICT in the teaching and learning of BOCS, the entrepreneurial skills on live share trading.These obstructions could be eliminated by the proactive and productive use of peer support by teachers for mutual problem-solving, observations, discussions, collaborative teaching and planning for the successful transferring of new skills to enhance their own practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT (Dhurup *et al.*, 2016; Matoetoe, 2016; Joyce & Showers, 2002).

Teachers are the primary engine of any teaching and learning situation; therefore, it is imperative that their attitude towards REAL and the integration of ICT when teaching BOCS, the entrepreneurial skills on live share trading, is always positive. It is obvious that all these abovementioned factors emerge from the psychological factors, specifically teachers' own beliefs and attitudes to ICT and pedagogical innovation, which are both primary facilitators and barriers to teachers' use of technology in the classroom (Hennessy *et al.*, 2010).

Furthermore, scepticism, overcrowded classrooms, lack of structural administrative support, and the wasting of time for planning and teaching, which automatically increases workload and teachers' training effort, cause teachers' reluctance to effectively employ computer usage in improving learning outcomes when teaching BOCS, the entrepreneurial skills on live trading of shares using ICT (Aghaee & Keller, 2016; Hennessy *et al.*, 2010; Tinio, 2003). Moreover, Business Studies teachers feel that their authority in the classroom is threatened, as the use of ICT in the teaching and learning of BOCS, the entrepreneurial skills on live share trading, becomes more learner-centred, where students can quickly obtain information and challenge the teacher's role as the primary source of knowledge, thus causing teachers'

resistance and attitude to change (Aghaee & Keller, 2016; Mosia, 2016; Hennessy *et al.,* 2010; Tinio, 2003).

On the other hand, the findings of a study conducted by Tella *et al*. (2007cited in Hennessy *et al.,* 2010) established that most teachers perceived ICT as very useful and making teaching and learning situations easier. Tella *et al.* (2007 cited in Hennessy *et al.,* 2010) suggested that professional development policies should support ICT-related teaching models, especially those that encourage both students and teachers to put extra emphasis on the pedagogy, using ICTs in the teaching and learning activities, thus, eliminating teachers' negative attitudes and resistance to ICT usage (Hennessy *et al.,* 2010). Given the two contrasting views, this study concurs with the findings of Tella *et al*. (2007cited in Hennessy *et al.,* 2010), in that the integration of ICT aids teachers and students in the teaching and learning of BOCS, the live trading of shares; for example, teachers should be at the cutting edge of knowledge creation, adaptation and implementation, rather than being mere consumers of knowledge. Likewise, students should also be kept abreast of the complex, multidimensional and indispensable skills required in the 21st century and thus maintain their global competitiveness. Consequently, that will eliminate teachers' resistance and negative attitude towards the integration of ICT in the teaching of BOCS, the live trading of shares.

### 3.5.2 Lack of infrastructure and resources

Adequate infrastructure and resources enrich the teaching and learning environment for any subject to be effective. For example, local community institutions, people, business firms, education specialists and other government departments are rich reservoirs of instructional materials that can be used by teachers to infuse theory and practice (Sithole, 2012). This means that teachers should realise the significance of the external stakeholder's infrastructure as valuable sources in the teaching and learning environment. This would help both students and teachers to experiment more with the use of such resources and would help them share what they do in the classroom in the real world. Therefore, teachers should refrain from using textbooks only and should begin using the local materials as they are available at minimal or no costs.

## 3.6 EVIDENCE OF THE APPLICABILITY OF THE STRATEGY OF TEACHING BOCS USING ICT

The following section discusses the indicators of success or failure of the emerging strategy of teaching BOCS using ICT. Previously conducted research revealed that the strategies that were employed were deemed successful when the co-researchers were able to work, learn and live together to arrive at a shared vision (Matoetoe, 2017; Mahlomaholo, 2010) and collaboration and implementation of activities were performed peacefully and effectively by co-researchers to achieve the set objectives (Matoetoe, 2017).

### 3.6.1 Scope of content knowledge

Matoetoe (2017) describes the scope of knowledge as the broader and strengthened knowledge from different people and that is utilised collaboratively without fear and insecurity. According to him, the scope of knowledge stimulates innovation, deep engagement and a consultative and driven-approach process (Matoetoe, 2017). For example, the scope of knowledge in the current study emanates from various stakeholders with diverse knowledge from their specialities. The professional trader infuses his or her scope of knowledge in trading while the LED manager comes with the diverse political, economic and social knowledge. This means that if teachers use it effectively and efficiently, quality in the teaching of BOCS is enhanced, leading to students being able to acquire entrepreneurial knowledge and skills, facts, trading concepts, principles, fundamentals and technical analyses, principles and theories.

This would help students to mingle their knowledge, skills and experiences with the scope of knowledge acquired from the stakeholders and other subjects, following the processes, application and evaluation (Matoetoe, 2017) in BOCS, the entrepreneurial skills on live share trading using ICT. In the current study, both teachers' and learners' knowledge were enlarged when they were introduced to entrepreneurial knowledge and skills on how live share trading using ICT could be executed. The spirit and culture of entrepreneurialism, as the team's common vision, were implanted in both teachers and learners. Educational policies in Botswana, Nigeria and South Africa also encourage teachers to work with other stakeholders to ensure that students are fully equipped with the skills and knowledge required in their real-life situations (ELRC, 2011).

### 3.6.2 Live share trading skills

Trading skills include trading market analysis, using fundamental analysis (economic, political and social news), technical analysis (candle sticks, price action, MACD, stochastic, and so on), depending on whether one is trading in foreign exchange (FOREX), Contract for Difference (CFDs), shares in Johannesburg Securities Exchange (JSE), and so forth. The thesis this study puts forward is that theory and practice are infused in the teaching of BOCS, the entrepreneurial skills on live share trading. Thus, with such understanding, teaching trading skills is perceived as successful when teachers are able to teach students how to analyse the trading market utilising the fundamental and technical analysis. This would enable students to take critical decisions when executing trades, thereby mingling the theoretical and practical components of BOCS, the live share trading using ICT. This implies that through the practical skills acquired from the inter-sectorial stakeholders, teachers are able to teach and students are able to practically trade shares in their real-life situations. Through the study, students are equipped with live share trading skills and knowledge that is imperative for self-fulfilment and meaningful participation in the Johannesburg Securities Exchange (JSE) as citizens of a free country (CAPS, 2012).

### 3.6.3 Technological content knowledge

Technological content knowledge is described as the competence of teachers in terms of integrating technology and content to interpret the meaning of the content (Mosia, 2016) in order to infuse theory and practice. In the context of this study, the use of ICT, such as computers, data projectors, Easyequities, Zoom and TeamViewer applications, is understood to be used successfully if teachers' knowledge of trading content, pedagogy and technology is improved within the teaching and learning environment of REAL. This suggests that teachers at different stages of the trading content, pedagogy and technology knowledge, endeavouring to infuse theory and practice, could teach students how to open demo and/or live share trading accounts in real-life situations.

For example, the teaching of BOCS, entrepreneurial skills on live share trading using ICT tools like laptops, data projectors, WiFi and/or the Internet could enable the team to collaboratively develop lesson preparation and facilitation fairly comfortably. The use of ICT

could further enable the team to easily communicate and take informed decisions in the opening of demo or live trading accounts, technical and fundamental analysis and analysis and predictions of trading markets, the execution of trades and the posting of the trading accounts on WhatsApp groups and/or emails, showing whether the students have made a loss or profit, regardless of their geographical vicinity. This could benefit students as they get exposed to and grasp multiple theoretical and practical business skills and knowledge needed to develop their businesses (trading accounts) required during the 4IR epoch. This particularly ensures the infusion of theory and practice when teaching and learning BOCS, the entrepreneurial skills on live share trading using ICT.

## 3.7 CHAPTER SUMMARY

This chapter reviewed literature related to the challenges teachers encounter in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. The literature was drawn from South Africa, Africa, SADC and the international community. This chapter discussed other researchers' perspectives on the challenges that teachers encounter in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. The chapter focused on the components, conditions, threats and evidence of success, as the major objectives of teaching BOCS, the entrepreneurial skills on live share trading using ICT. The reviewed literature will help the researcher in comparing the literature with the empirical data that will be generated using PAR.

# CHAPTER 4
# RESEARCH DESIGN AND METHODOLOGY TOWARDS THE DESIGN OF THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORTATION COMMUNICATION AND TECHNOLOGY

## 4.1 INTRODUCTION

This study aimed to design a strategy that could enhance the teaching of business opportunities creation skills (BOCS), using information and communication technology (ICT). In order to achieve this aim, this chapter discusses the methodology utilised and the processes followed to generate data from the co-researchers for the purpose of designing a strategy of teaching BOCS using ICT in KwaZulu-Natal, Amajuba District, using Participatory Action Research (PAR) as the research methodology. PAR was used to generate data whereby the researcher and the co-researchers worked as a team, exploring the challenges encountered and viable solutions proffered in the teaching of BOCS using ICT.

The chapter discusses the interactions and the action plan, as were directed by the researcher and co-researchers, to determine the requirements and mechanism of the plan and to decide on the conditions that favourable for the designing of the proposed strategy. The anticipated threats that could inhibit the designing of the strategy were discussed. This chapter also integrates the theoretical stance and constructs developed and discussed in Chapter 2, together with the empirical data that were generated. In addition, the chapter examines the origin of PAR as a methodological approach and presents the objectives, formats and the steps of the chosen methodology. Moreover, the ontological and epistemological stance and the role of the researcher using PAR are discussed. This chapter also includes data generated by the research team during the planning stage and finally explains the Critical Discourse Analysis (CDA) as the method used to analyse data and justifies the relevance of the data analysis method.

## 4.2 PARTICIPATORY ACTION RESEARCH (PAR) AS AN APPROACH

### 4.2.1 Historical origin of PAR

PAR is a moderately new and collaborative research approach employed in dealing with activity research (Torre, 2009). The discussion of the history of PAR is significant to the chosen research design (Kemmis & McTaggart, 2005).

Action research was developed through generations. Kemmis (1981) states that in its first generation, positivism dominated research in the United States, thus causing a temporary decline in the use of action research. In addition, the early 1970s witnessed the advent of the second generation of action research, which involved organisational development that emerged in Britain; the third generation, which heightened inventiveness for more open, critical and emancipatory action research, emanated from Australia and Europe (Kemmis, McTaggart & Nixon, 2015). Moreover, the fourth generation of action research, which was supported by the notable activists such as FalsBorda (1988) and Paulo Freire (1996), emerged through social movements originating from developing countries. Through its educational transformation, emancipation, change in social practices, critical reflection and social criticism as key research principles (Naughton, 2001) endorses the use of the fourth-generation action research.

Moreover, the fourth generation of action research has further been expressed as collaborative, change-orientated and openly political (Naughton, 2001). Therefore, this research project, which is bent on designing a real-life-situation strategy of teaching BOCS, the live trading of shares using ICT, aligns itself with the fourth-generation action research, as it aims at ensuring the mingling and infusion of theory and practice. This project aims at advancing transformation educational and social practices through collaborative action involving the inter-sectorial stakeholders involved in the research. The stakeholders' multifaceted skills, knowledge, techniques and experiences are mingled and utilised to develop a real-life strategy of teaching BOCS, the live trading of shares using ICT.

Kemmis and McTaggart (2007) state that PAR has its roots in the liberation theology and the neo-Marxist approach to community development, like in Latin America and a liberal origin in human rights activities in Asia where it developed commitment characteristics to social, economic and political development, especially in the Lewinian period in the1940s, as it responded to the needs and opinions of ordinary people (Mosia, 2016). The work of Social Psychologist, Lewin was based on minority groups and those who were marginalised during

the 1930s and 1940s (Crane & O'Regan, 2010; Mosia, 2016). He argued that change occurred mainly within democratic movements. Moreover, Esau (2013 and Mosia (2016) stated that for action research to be viewed as emancipatory, it should involve people participating in the research and it is not done on or for them. Thus, people should not be perceived as objects but valuable co-researchers in the research. In addition, Lewin's philosophy ensured that action research focused on a social system for it to enforce a change that would address issues of segregation and discrimination, while studying the positive impact of that change (McDonald, 2012; Mosia, 2016). Utilising Lewin's original ideas, researchers did their research through observation, reflection, action, evolution and modification, especially during the period of the Industrial revolution (Mosia, 2016). This study sought to address the problems of segregation and discrimination caused by the education system comprising teaching methods imposed on 'third-world' countries. The study introduces the real-life-situation strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT, where learners' experiences, prior knowledge and skills, as active co-researchers, are assimilated from the beginning to the end of the lesson.

Paulo Freire (in McDonald, 2010) states that on the eve of the 21st Century, critical reflection was vital for personal and social change (Mosia, 2016). It aimed at empowering the poor and marginalised members of the society on issues related to their socio-political experiences, thus giving birth to the movement-sharing vision of a society free of domination and exploitation (Mosia, 2016). Furthermore, it occurred within the limitation of a radical and reformist approach that permitted alternatives to the traditional approach to education and debates enforced by the main social science paradigm (Mosia, 2016). Paulo Freire aimed at altering the way education was conveyed and built the community of grounded experts, whose main objective was to use the PAR approach sustainably and effectively as a tool capable of ensuring constant improvement among community members. As a bricoleur, the researcher utilised PAR as an approach that forms part of a dynamic educational process, social investigation, taking action to address problems and engage in social and political actions. This signals that PAR, like bricolage, liberates the research from conventional prescriptive methods and decentralised traditional research, where researchers utilise and re-utilise different research methods to create something new (Mosia, 2016).

PAR bridges theory and practice; it originated from two research approaches, which are Action Research and Participatory Research, where these two research approaches merger the social investigation, educational work and activity (Van Niekerk and van Niekerk, 2009;

Mosia, 2016). It is characterised by the creation, transformation and control of knowledge, leading to a diversity of processes, including planning, acting, achieving objectives and re-planning, which adapts it as a strategy of transformation of traditional teaching methods to a real-life-situation strategy of teaching BOCS, the live trading of shares using ICT as it was identified by Paulo Freire in the *Pedagogy of the Oppressed* (Hill, 2010).

### 4.2.2 Objectives of PAR

This section presents the objectives of PAR, which are discussed within the broader context of the objectives of the study. Mthethwa (2017) and Vollman, Anderson, and Mcfarlane (2004) assert that PAR applauds community development, community building, transformation, social justice with freedom and democracy, participation, equality and equity, which form the focal point for the current study. The current study utilised PAR to acquire knowledge and determine the achievements that are vital and significant to people through research, adult teaching and learning or socio-political action, thus creating and consuming their own data (Mthethwa, 2017). In the following paragraphs present the objectives of PAR and the reason why it is a significant tool for this study.

#### *4.2.2.1 PAR empowers people*

The PAR empowers, liberates and raises consciousness for learners, as it affords them the opportunity to think and participate in the infusion of theory and practice in the teaching of BOCS, the entrepreneurial skills on live share trading, making them understand the true reflection of social issues, that is, live share trading (Kemmis, 2008; McTaggart, 1997; Greenwood, Whyte & Harkavy, 1993). In other words, it produces knowledge by allowing the community to take relevant and useful action (Matoetoe, 2017). Thus, learners, teachers and the school community, which comprises various stakeholders from various departments and organisations, become both the producers and consumers (pronsumers) of educational knowledge (Esau, 2013). This shapes and improves the practices of students in their learning environment, which also changes the unequal relations existing in the wider social context (Esau, 2013).

Furthermore, Matoetoe (2017) posits that PAR aims to empower people at a deeper level by permitting them to process and utilise their own knowledge. Chapman (2012) stated that

skills can be attained through PAR, leading to the growth and development of communities. Moreover, experiences and feelings of empowerment lead to the development of feelings of confidence, self-efficacy and self-esteem, which influence an individual's quality of life, allowing and involving himself or herself more proficiently in contributing to the PAR process (Watters, Comeau & Restall, 2014). For example, people may share their challenges and come up with the tactics that can lead to the best use of strategies by stakeholders in assisting in the process of designing an effective strategy. Therefore, through the use of PAR, the development of research could head to the direction where the proposed activities produced within the situation could transform and address the community's identified needs (Mthethwa, 2017; Mubuuke & Leibowitz, 2013).

#### *4.2.2.2 PAR is democratic*

According to Kemmis and McTaggart (2007), PAR opens communicative spaces between co-researchers. This shows that the processes involved in undertaking PAR are mutual inquiries, which aim at reaching the shared understanding of a situation's inter-subjective agreement and reaching consensus on what should be done. PAR also aims at collaboratively achieving and legitimising research results, not only for themselves, but also for every reasonable person (Kemmis & McTaggart, 2007).

Furthermore, Valasco (2011) states that with PAR, through the creation of forums, people become co-researchers struggling to redo practices where they react. Moreover, as an action research approach and a democratic process through participation and action, PAR integrates action and reflection, theory and practice, where all community members interact and collaborate (Valasco, 2011). Therefore, PAR allows co-researchers to raise issues that make them feel helpless, which generates awareness that leads to social change and the betterment of the society (Honig, 2008). In the current study, PAR would provide co-re-searchers with the chance to cooperatively identify the problem as well as determining the possible solutions to the problem through discussions where co-researchers learn from each other's lived experiences. This creates a sense of community that belongs together and the opportunity to form likely relationships amongst co-researchers.

#### *4.2.2.3 PAR creates awareness*

Mthethwa (2017) and Nkoane (2010) postulate that PAR gives the oppressed the opportunity to have their voices heard in designing a strategy to teach BOCS, the entrepreneurial skills on live trading using ICT. This is done to set equal power relations, fairness, freedom and hope between the researcher and the co-researchers (Matoetoe, 2017; Netshandama & Mahlomaholo, 2012).

Furthermore, Campenalla (2009 in Mthethwa, 2017) posits that PAR stimulates the researcher's listening skills, which allow him or her to consider the co-researcher's views. This allows the researchers and the co-researchers to collaboratively work together, aiming at examining problematic situations in order to influence positive change (Mthethwa, 2017; Kindon, Pain, & Kesby, 2007). This shows that the researcher should always be willing to listen and be empathetic, allowing co-researchers to voice their concerns regarding the challenges they encounter. This allows both the researcher and the co-researchers to collaboratively and cooperatively define and employ strategies that solve the challenges.

#### *4.2.2.4 PAR brings changes*

Mthethwa (2017) postulates that PAR enables researchers and co-researchers to share information; it stimulates learning the mutual sharing of experiences. Through the shared information, the researcher and the co-researchers commit themselves to the research by participating and analysing social structures (Kemmis & McTaggart, 2007). This further aims at exposing the disempowerment, injustices and challenges affecting marginalised groups in industrialised societies. Furthermore, this certifies the notion that PAR is rooted in determining the role of relationships between education and social change; hence, it aims at addressing the rampant challenges of individualism, disenchantment and instrumental reasoning (Kemmis & McTaggart, 2007).

#### *4.2.2.5 PAR promotes social justice*

PAR promotes radical progression by supporting community accomplishment and disapproves of challenges brought by inequalities and social justice in a society (Mthethwa, 2017). PAR further directs the study with an aim of reframing and reconstructing the social

practice that constitutes social interaction between people (Kemmis & McTaggart, 2007). Moreover, PAR as a form of educational and social process, sustains and supports research as a social practice (MacDonald, 2012). Furthermore, the vital goal of conducting research using PAR is to employ the final research results and findings, taking due action to improve and develop the society (McDonald, 2012). Therefore, PAR, as it applies to the current study, would enable co-researchers to network and share their knowledge, skills and experiences acquired in their various departments.

## 4.3 CHARACTERISTICS OF PAR

The following paragraphs discuss the characteristics of PAR.

### 4.3.1 PAR allows for the identification of the problem

Kemmis (2008) asserts that PAR allows communities to identify, discuss and solve problematic social issues. Those matters could be determined from the injustice of social structures and practices emanating from the communities. Mthethwa (2017) and Netshandama and Mahlomaholo (2012) postulate that this enables the team to design a strategy of teaching BOCS, the entrepreneurial skills on the trading of live shares using ICT, with the intention of infusing both theory and practice. Furthermore, after the identification of the social problem, PAR allows for the determination of conceivable approaches to a collaborative and energetic resolution of the issue (Mthethwa, 2017; Walter, 2009). Thus, PAR would permit the co-researchers to identify and comprehend the social injustices encountered by students and how the strategy of teaching BOCS, the entrepreneurial skills using ICT, would be implemented and applied to ensure that students mingle theory and practice.

### 4.3.2 PAR enlightens

PAR enlightens everyone included in the research; therefore, the researcher and co-researchers gain new and expanded knowledge. Moreover, Mthethwa (2017) and MacDonald (2012) claim that PAR enables the researcher to become a dedicated contributor, implementer and apprentice in a procedure that promotes persuasion rather than insignificance in social

explorations. Therefore, learners' and teachers' live share trading skills and knowledge are enlightened in the teaching and learning of BOCS, the entrepreneurial skills using ICT.

### 4.3.3 PAR transforms social realities

Selenger (1997) asserts that once the problem has been identified, it is crucial that the radical transformation of social reality should take place to improve the lives of the community members as the primary recipients of the research. PAR ensures that all co-researchers cooperatively and collaboratively participate in the formulation of the strategies that could be utilised to generate data to be used in the identification of the problem, thus altering the roots of oppression (Mahlomaholo, 2009; Ledwith, 2007). Furthermore, PAR is emancipatory, as it aims to help people recover and release themselves from the constraints of irrational, unproductive, unjust and unsatisfying social structures that limit self-development and self-determination (Kemmis & McTaggart, 2005). Therefore, using PAR to transform the social realities of teaching BOCS, the entrepreneurial skills on live share trading using ICT, would aid the co-researchers to identify the social ills encountered by students when they are taught using conventional methods of teaching, which leaves them unable to use the knowledge and skills learnt in class. Consequently, using PAR to transform the social realities of teaching BOCS, the entrepreneurial skills on live share trading using ICT, would also help the co-researchers to determine the strategies that would be used to ensure that students are able to implement and apply the business skills learnt in class in their real-life situations after exiting the school.

### 4.3.4 Community agency

MacDonald (2012) suggests that PAR allows for community participation in research processes to simplify a more accurate and authentic analysis of social reality. In addition, PAR allows the researcher to be the facilitator, learner and a committed participant in the research process to foster combativeness, rather than disinterest (MacDonald, 2012). When people are offered the opportunity to participate in research agendas and seek to be active in research, they are establishing themselves as agents that would work and inform the community. In the current study, this would develop and uplift the co-researchers in making their voice heard, thus stimulating their business skills and knowledge and identifying

teaching methods that would make students achieve the vision of being the professional traders after exiting the school. Furthermore, as it is capable of effecting sufficient and supportable educational revolutions, PAR comprises the vibrant and multiple contributions made by all the stakeholders affected by these interventions (Mthethwa, 2017).

### 4.3.5 PAR diffuses power relations

Chapman (2012) affirms that PAR embraces a range of powerless groups of individuals, the exploited, the poor, the oppressed and the marginalised. The use of PAR in the study therefore locates the voices of the marginalised learners, teachers and other relevant community stakeholders through participating at the centre of knowledge construction in pursuit of solutions to their own problems (Mahlomaholo, 2012). For example, the use of PAR in the current study aimed at involving students and other stakeholders in ensuring that students are able to apply and implement the skills and knowledge obtained in class in their real-life situations. This ensures that theory is effectively blended with practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. In addition, the use of PAR involves the diffusion of authority, knowledge of the methodology and procedures used in the research, as well as ownership of the research questions, ensuring that no one controls the investigation after all the co-researchers have been informed (Mthethwa, 2017; Mash, 2014). This means that the researcher is de-powered and the co-researchers are empowered, thus working at the same level, ensuring equality amongst and between them (Matoetoe, 2017). Furthermore, PAR is often used to try to relay alternative knowledge and opinions to powerful groups in terms of co-researchers' lived experiences (Chapman, 2012). Therefore, through their cooperation in the research, parents' and learners' skills and knowledge, as co-researchers, would be enlightened and stimulated, giving them a sense of self-worth in the teaching of BOCS, the entrepreneurial skills in live share trading using ICT (Mthethwa, 2017; Tagum, 2013).

The next important step following the formation of the team is planning. The team has to determine their common vision on designing a real-life strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT. Their visionary teaching strategy should be determined, taking into cognisance their strengths, weaknesses, opportunities and threats (SWOT analysis) to enhance the learners' ability to infuse theory and practice in their real-life situations. This would help them to achieve the objectives of the

study. Furthermore, after planning, the team ensured their full and active participation and of the community at all levels of the research, as supported by PAR. The team ensured that the actions of what has been planned are done through activities and observations are made by monitoring those activities in a neutral manner (Matoetoe, 2017; Kemmis & McTaggart, 2007).

The team acknowledged that PAR is not done on someone else, but it is collaborative and engages co-researchers in examining their own understandings, skills, knowledge and values in the way in which they understand themselves and their actions in their social worlds and practices. In the current study, co-researchers are all active researchers in all the stages of the research process, including how they should proceed with the research outcomes (Baum, MacDougall & Smith, 2006). PAR helps by giving people a historical perspective that shows them where they are coming from, where they are, where they are prepared to go and how to get there (Baum *et al.*, 2006).

In addition, the identification of the problem within the community is the first step in PAR. This aids the researcher and the co-researchers to easily understand the problem to be investigated. Matoetoe (2017) and Kemmis (2009) assert that generating data strategies, where stakeholders divide and assign various tasks among themselves, as well as determining the current and historical factors, could be used once the problem has been identified. Doing that could help in obtaining the answers to the problem being investigated. Moreover, Kemmis and McTaggart (2007) state that PAR also involves steps, which include planning of change, acting, observing the process and consequences of change. They further elucidate that each step is characterised by reflection on processes and consequences of re-planning. These steps are indicated in Figure 4.1 below.

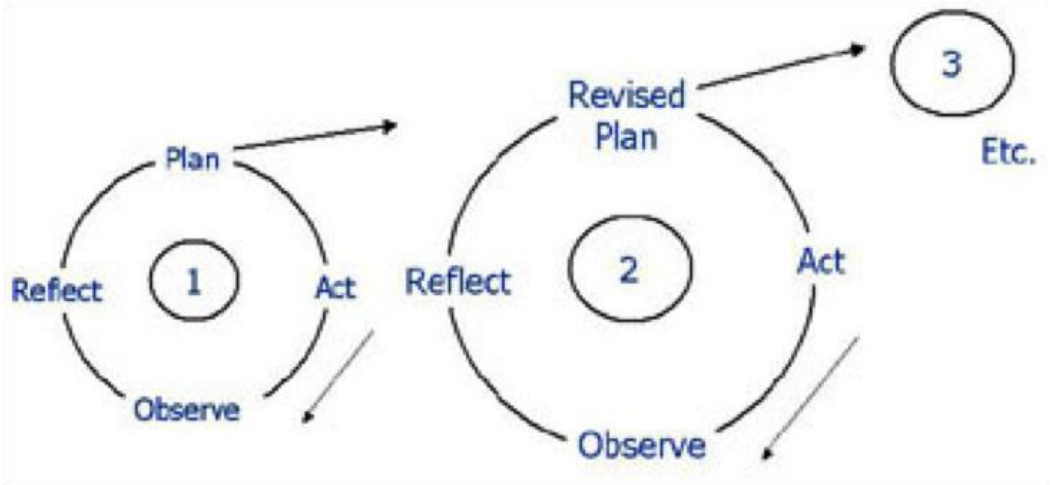

***Figure 4.1: The Spiral process of PAR (adapted from Jasper, 2003: 16)***

Practically, there is no sequential progress of these spiral cycles of planning, acting, observing and reflection. There might be overlapping occurrence where any stage of the spiral cycle may quickly take place before the other, due to learning from experience (Kemmis & McTaggart, 2007; Qhosola, 2016). It is not easy to know the routine of how and when each cycle will emerge as they are all inter-reliant and the process is cyclical. Boog (2003) and Qhosola (2016) posit that stages or cycles may occur multiple times as each stage rushes a re-visitation of a prior stage and 'spin-off' activities may arise throughout the usage of some other activity (Bostock & Freeman, 2003).

The reason cited for the above scenario is that there is no stipulated time for the completion of each stage or cycle when it is initially and finally performed during the research project. Kemmis and McTaggart (2007) further states that whether or not the co-researchers have followed the steps of the spiral cycles cannot be measured but rather on whether after the co-researchers have identified the challenge (problem) they were able to develop and implement all the stages of PAR in their practices. Co-researchers in the PAR process, guided by the research objectives, best collaboratively implement each of the steps outlined in the spiral of self-reflection.

Planning is the first step of the spiral stages of PAR where the base for the communicative action of the study starts (Kemmis, 2008) but before planning took place, multiple tasks were undertaken. Inter-sectorial co-researchers with specific and multidimensional skills, knowledge and experiences were located and a coordinating team which was responsible for advising the whole team on the logistics of communication, how and when co-researchers were going to communicate, how much time was needed for each session to allow for sufficient time of reflection and feedback was discussed (McDonald, 2012; Cahill, 2007). PAR involves investigating actual practices and not abstract ones.

## 4.4 RESEARCH DESIGN

A research design actualises the motive of the study by setting out procedures that improve data rationality in a given research problem (Mthethwa, 2017). Prior to engagement in practical research, one has to begin by considering ethical considerations, which has to do with acquiring permission to conduct the study from an ethics committee. During the

planning stage, the team is put together, followed by getting researchers' credentials. Kemmis (2009 cited in Mthethwa, 2017) postulates that the planning process sets the foundation for the study's communicative action. This was followed by the information session and the development of the vision and mission of the team, as well as conducting SWOT and PESTLE analyses. Thirdly, the team developed activities and a proposed plan.

### 4.4.1 Ethical considerations

Winter, in McDonald (2012), states that the researcher should guarantee that every applicable individual, council and specialist has been counselled and that the standards directing the work are acknowledged prior to the start of the research. In this study, the researcher was sought and granted ethical clearance by the Ethics Committee from the University of Free State (UFS). The reference number is UFS-HSD 2015/0663. On the other hand, the researcher approached the Head of Department of Basic Education in KwaZulu-Natal for permission to conduct the research in a selected school in Amajuba District. The researcher then proceeded to the school where the AET Centre was conducted, which responded positively by granting written permission to conduct research. Various organisations and individuals were also approached and they also agreed to participate by signing the consent forms which were written in English and Zulu Languages to cater for all people emanating from various and multiple backgrounds. Thus, they familiarised themselves with the contents of the forms. The nature, purpose and benefits of the research, as well as the procedure to be followed, were explicitly explained to the identified co-researchers. By so doing, the researcher concurred with Dube (2016) who asserts that researchers should ensure that all the relevant persons, committees, and authorities have to be consulted, and that the research is permitted prior to the commencement of the research.

All the co-researchers were informed that participation in this research was voluntary. This was done for them to decide whether to participate or not without facing any harm or threat and that they were respected (Dube, 2016; McDonald, 2012). Furthermore, co-researchers were informed of their freedom to terminate participation if they wished to do so without fear. Furthermore, the development of the work must remain visible and open to recommendations from others throughout the research process (Baum *et al.,* 2006; Qhosola, 2016). The research team further discussed and agreed upon the use of audio and video tape and decided on who was permitted to see the captured information. In addition, the team

agreed that descriptions of others' work and points of view must be negotiated with all those who participated in PAR before any part of the work can be published (McDonald, 2012; Qhosola, 2016). It was agreed that after every meeting, key points and actions be circulated to everyone to verify if all the information had been captured. Data storage terms were complied with through Data Protection as it was about people hence the need to respect their concerns as research co-researchers.

Confidentiality should be applied as per the ethical principles. It is the responsibility of the researchers to ensure that the co-researchers' privacy, confidentiality and anonymity are recognised (Dube, 2016; Qhosola, 2016). To guarantee confidentiality, the researcher ensured that the names of the co-researchers and the AET centre, where the research was conducted, would not be uncovered and that their responses would be treated with confidentiality. This aspect was disclosed in the consent letter. As indicated by O'Brien (in McDonald, 2012), the ethical principles of PAR are clear in that all decisions regarding the direction of the research and the probable outcomes are collective.

The researcher was explicit to the co-researchers from the inception of the research with regard to the nature of the research process in terms of all personal biases and interests, ensuring that there is equal access to information produced by all co-researchers. This must be done as the research findings and results would be accessible to the public in a written form. Therefore, the team anticipated having a good and amicable working relationship throughout the research process through careful discussion and planning and how best the prospective benefits of the study could be exploited. O'Brien (in McDonald, 2012) further averred that the researcher and the coordinating team generate a process that maximises the opportunity for the involvement of all the co-researchers (Qhosola, 2016).

### 4.4.2 Formulation of a team

The phase began by getting the team together. This was done in order to aid Business Studies teachers in a manner that enables students to infuse the theory learnt in class with practical skills and knowledge acquired in their real-life situations (Matoetoe, 2017). This would be done through the objectives of the study.

The problem of producing unskilled students who could be practically utilised when they exit the high school level was raised by the Amajuba Municipality Manager during the

community meeting where bursaries were given to outstanding and excelled matric students of that year. The community that attended the meeting comprised of stakeholders from different departments and sectors of the economy. She showed her contentment to the results, but voiced her discontent on the escalating rate of unemployment, particularly in the Amajuba District and the whole country in general. She stated that even though students could be offered the opportunity to study at university, they will still be without employment.

After the meeting, as the commercial subject teachers, the researcher met with the subject advisor to discuss how Business Studies as one of the commercial subjects can be authentically taught. This was discussed to ensure that BOCS, particularly the entrepreneurial skills on live share trading using ICT, could be taught in a way that enables students to blend the theory learnt in class with the practice occurring in their real-life situations. After trying and failing to find the solution to the problem, the researchers invited other stakeholders, who were directly and indirectly involved in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. This is advocated by Mahlomaholo (2012), who states that the solution to the problem could easily be determined from the people who always experienced the problem. Therefore, the use of PAR helped the research team to address and define the solution through action (Matoetoe, 2017; MacDonald, 2012).

The researcher then decided to establish the team that comprised two Adult Education and Training (AET) educators and learners, a Business Studies education specialist, two entrepreneurs, the Amajuba Municipality LED Manager and a NAFCOC representative to collaboratively generate knowledge and devise action plans on the identified problem to bridge the gap between the theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. The research team effectively communicated and agreed on other things with them as advocated by Williams and Sanchez (2011in Matoetoe, 2017), who further stated that good communication between and amongst stakeholders inside and outside school is vital as it creates a good and concrete relationship between the school and the community. The two entrepreneurs comprised the professional trader and a farmer. It should be mentioned that, when the project was at its infant stage, it also had stakeholders from different sectors of the economy including Amajuba district municipality representative and Amajuba district representative from the Department of Economic Development who left the project soon after the initial meetings.

These co-researchers were selected on the basis of the skills, experience and knowledge they have and that would be of great significance in skills acquisition and knowledge building in achieving the objectives of infusing theory and practice in the teaching and learning of BOCS, the entrepreneurial skills in live share trading using ICT.

Grade 12 AET learners, also called "Grade 13" as most of them had passed Grade 12, but wanted to upgrade their Grade 12 results to obtain a university entrance pass mark, and some have failed and wanted to pass their matric. They were selected to ensure that the skills and knowledge they acquired in the classroom situation could be easily related and implemented to their real-life situations (Matoetoe, 2017). Whether students could obtain a university entrance mark or not, they should be able to apply the skills and knowledge by establishing their own business while at school or when exiting the school. Consequently, it was expected that their involvement in the current study would enhance their lives through the application of the obtained skills and knowledge, resulting in the reconstruction and transformation of societal structures (McDonald, 2012).

Moreover, teachers were expected to share with other stakeholders the information, experiences and challenges they encountered in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. Furthermore, the Business Studies specialist was expected to share his information on how to apply the relevant legislation and policies that could help bridge the gap between theory and practice in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. This would ensure that students are taught business skills to increase their skills as advocated by Skills Development Act No. 97 of 1998. He was also expected to assist educators in designing different tasks and in utilising different instruments, at different cognitive levels of questioning and tasks to assess learners. It was anticipated that he would provide leadership, guidance, management and control and monitor the support provided to Business Studies educators to ensure the effectiveness of teaching and learning of BOCS using ICT. He was also expected to conduct workshops and to organise service providers to run workshops on the integration of ICT in the teaching of BOCS, the entrepreneurial skills on live share trading.

The researchers further assumed that as the crux of the country's economy, entrepreneurs would share their real-life skills, experiences and knowledge on how they started their businesses on live share trading using ICT. It was anticipated that inviting entrepreneurs to the classroom could motivate and encourage students to establish their own businesses

thereby infusing theory and practice. This was another way of sharing power and bringing social change and social justice to the same community as advocated by PAR. The final product of entrepreneurs' contribution could be peace and freedom amongst the community members, as students could be participating in the economic activities of the country, thereby decreasing the country's unemployment rate.

Additionally, the team agreed that the National African Federated Chamber of Commerce and Industry (NAFCOC) representative should also be included. Formed in the early 1960s, NAFCOC is an independent and non-profit business that supports organisations, primarily the Black community. It was mainly established to fight for Black business people, through the height of Apartheid in the 1970s and 1980s and it still continues to meet their needs, even in the new South Africa. Therefore, NAFCOC would be a powerful voice for students (Black business) who aim to promote and encourage the development of the Blacks. It encourages a spirit of cooperation and collaboration among Black business people, endorsing their full participation in the economy of South Africa.

NAFCOC representatives were expected to bring and share their knowledge, skills and experiences on guiding the team on the requirements of business development. They were also expected to share the advantages of being a NAFCOC member and how that would help students once they have established their businesses on obtaining funds from the government, capitalising on youth and other business opportunities, trainings on various business operations, etcetera. It was anticipated that it would motivate students to establish their own businesses while learning and after they have left the school.

Lastly, the Local Economic Development (LED) manager was also identified and expected to share the information on the BOCS that were required by the Amajuba District to increase its economic growth and development. A LED manager took part in the research and development, as well as the draft of the Amajuba District LED strategy. The LED strategy has to align with the KZN provincial LED strategy, as well as the country's National Development Plan and it includes the SWOT and GAP analyses that have to be taken into consideration before essential decisions are made. Based on that, the team believed that the addition of the LED manager to the team would gear and steer the study towards the right direction in terms of selection of a strategy of teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT that is required by the district. It was

anticipated that the LED manager's knowledge, skills and experience would help the team in achieving the objectives of the study.

### 4.4.3 Research site profile

The ABET (AET) Centre, Sibilulwazi is situated in one of the schoolsAET in Berry Hertzog Park, Newcastle. It is a combined school from Grade 1 to Grade 12. The centre was selected because it was convenient for all co-researchers of the research in terms of the distance and transport. Some of the participant used taxis and buses and some walked to school as they were working as domestic workers and wanted to improve their education through AET. The centre comprises a mixture of drop-out from surrounding AET in Newcastle and students who came to work as domestic workers from various rural areas like Nongoma, Nqutu and other around KwaZulu Natal. The AET programme starts at 16h00 until 18h00. The centre manager and teachers have a timetable that ensures that each subject is be taught at least four times a week

The centre has seven teachers and 42 students, and it starts from level 1one to 4 four which includes plus Grade 12 students ( normally called Grade 13). The centre uses English as a medium for of communication in the teaching and learning process and iIsiZulu- speaking students are dominant. The project acquired excellent support, dedication and willingness from teachers and students, as they felt it would bring change to the team members, community, province, as well as to the whole country.

### 4.4.4 Credentials of the co-researchers

This section discusses the co-researchers' profiles and the roles they played in the study as the co-ordinating team members. This is a representation of a wider group of people affected by the identified need. This team was selected because of its high expertise and knowledge in their respective fields. The co-researchers consist of two Business Studies AET teachers, four Grade 12 (13) business Studies learners, a Business Studies subject specialist, two entrepreneurs, the Amajuba Municipality Local Economic Development (LED) Manager, NAFCOC representatives and the principal researcher (study coordinator).

#### *4.4.4.1 Principal researcher*

As a study coordinator and by extension, coordinating team leader, the principal researcher's roles, as discussed in bricolage as the theoretical framework coaching the study and also in PAR, include the convenor of the research team, as well as trainer of the team on PAR and CDA. The researcher was also initiated the research, conducted the research with the research team, coordinated the activities of the research team, participated in meetings, collected and analysed data with the research team and engaged with the co-researchers. She is also a commerce teacher, teaching Business Studies, Economic and Accounting.

#### *4.4.4.2 AET Centre manager*

She was the most experienced teacher in the mainstream education and the Head of Department (HoD) of the Languages Department, who had been in the service for 16 years. She holds a Bachelor of Education degree, as well as an Advanced Certificate in Languages. She enthusiastically shared with the researcher (after the researcher's first visit to the centre) her rich teaching experiences and milestones since she started teaching. She felt great and appreciated that the researcher had chosen her centre and that the knowledge and skills from the study would be profitably utilised for the benefit of the students and the community from which they originated.

#### *4.4.4.3 Teachers*

Two teachers participated in the study. Mrs Nondoyi, a Grade 12 Business Studies teacher, had been teaching from the mainstream for 15 years and the team suggested that she would be of the greatest importance owing to the skills, knowledge and experience she had. She agreed enthusiastically, expressing her feeling that the skills and knowledge she would get from the study would be efficiently implemented and spread in the school and in her real-life world. Mrs Nondoyi possessed a teacher's degree majoring in Business Studies and Economics. She suggested that: "*It is appropriate that we establish a team with the same vision."*

The other teacher who was fully based in AET was Miss Nkehli, who had just finished her teacher's degree in Business Studies and CAT and had been teaching for five years. It was suggested that CAT, as a subject, would be an advantage to the team, since the study was about a real-life-situation strategy of teaching BOCS using ICT. She suggested that: "*The*

*team should comprise both internal and external stakeholders so that we share the skills, knowledge and experiences that we all have."*

The biggest fear that Mrs Nondoyi had, however, was time-related constraint because she alerted the team that her school closed at 14h30 and she had to take the public transport to the centre while the AET programme starts at 16h00. Then the team suggested and concluded that they would mostly be meeting on Saturdays. Based on the teachers' qualifications, major subjects and experience, the team believed that both teachers would positively contribute to the achievement of the objectives of the study. Mrs Nondoyi would contribute skills, knowledge and experience and Miss Nkehli would contribute her CAT skills and knowledge and would collaboratively help the team achieve the objectives of the study.

#### *4.4.4.4 Learners*

These were Grade 12 learners. AET, normally called Grade 13, as some of them have failed matric and were given a chance to repeat and re-write matric while attending in ABET (AET) Centres. In addition, some of them passed matric but wanted to upgrade their results for university entrance. For the study, only three learners volunteered to participate of which two of them had failed and wanted to re-write matric and the other one had passed and wanted to upgrade Business Studies and other two subjects marks. They were two females and one male. Most of the learners from the AET centre hailed from the deep remote rural areas of KwaZulu-Natal Province and had migrated to Amajuba District to find work as domestic workers (females) learners and hawkers (males) since the AET centre is situated in the town of Newcastle. Most of the female learners were domestic workers while some male learners were hawkers in town. Some of them were parents themselves and they were receiving social grants to support their children while learning and working. For the study, we had one female domestic worker who had failed and wanted to upgrade, one male hawker for upgrading and one female who had failed coming from the neighbourhood and still depended on her parents for pockect money.

It was anticipated that the business experience of the hawkers could help the team to achieve the objectives of the study. It was also anticipated that female learners, who were domestic workers and simultaneously receiving social grants, would be taught how to save and use that money to start their own businesses (live share trading). Coming from the marginalised communities for the first time, they did not have assurance and confidence in themselves;

they could hardly express the experiences, skills and knowledge they possessed. However, after several workshops, discussions and observations, they gained confidence and started to freely participate in the study, knowing that they were valued and would be treated equally with respect as all other team members as advocated by the principles of both PAR and bricolage.

The main objective determining their selection was also to help the team achieve the objectives of the study through the realisation that BOCS learnt in class might be practically implemented in the real-life situation. The theoretical skills and knowledge these students already acquired from school and the work experience they have were anticipated to be useful. The team agreed that the theory and experience would be practically implemented through the establishment of businesses (live share trading) by the students while they are still in school (AET) or after leaving school.

#### *4.4.4.5 Business Studies subject advisor*

As the subject advisor for Business Studies, Economics and Accounting in Amajuba District from 2008 to date, Mr Mcimeli was assumed to be a relevant component of the study as he had gained leadership, administrative and management experience. Mr Mcimeli planned the programme for the school support visit and decided on specific schools for each term, planned and coordinated Grade 11 commerce-related subjects, as well as speech contests since 2011. He also provided leadership, guidance, management and control and monitored support provided to educators of Accounting, Business Studies and Economics. Furthermore, he conducted workshops for Accounting, Business Studies and Economics on new developments of the curriculum and policies, for example, how to conduct continuous assessment and apply various assessment strategies, assisting educators in designing different tasks and instruments, as well as pitched in at different cognitive levels of questioning and tasks to assess students with learning barriers.

He developed support materials, pre-tests and post-tests, which were relevant to particular grades to assist learners improve on their performance, in consideration of the relevant legislation and policies. He attended national, provincial and district subject meetings, workshops, seminars and courses, and related information to all teachers, in order to keep them abreast of the latest developments.

As a visionary professional leader who needed to keep up to date with trends and challenges of the changing world, Mr Mcimeli developed himself through his teaching career, so as to meet the needs of the global community and to assist his colleagues, learners and the immediate community at large. Mr Mcimeli attended several workshops and played different roles in implementing and developing students and educators in his field of work. In 2003, he obtained a certificate in Economic and Management Sciences (EMS) and Outcome Based Education (OBE) for General Education and Training (GET) phase at Embury Education and Training Centre, endorsed by the University of the Free State. In 1988, Mr Mcimeli obtained a Diploma in Commercial Subject; in 1997, he obtained a Bachelor of Commerce Degree in Education at VISTA University, and he also gained knowledge on teaching adults and on AET in general (2002 – 2003). He therefore was deemed a relevant participant that would enable the team to achieve the objectives of the study.

#### *4.4.4.6 Two entrepreneurs*

**i.) Mrs Nanga (farmer)**

Mrs Nanga was a farmer who was keeping and selling free-range and broiler chickens, as well as cattle to the community and his butchery in town. The business had been operating for about four years on her own farm. The team learned that Mrs Nanga did not have any qualifications that aided her to run the business, but she utilised the generational skills, knowledge and experience gained informally. Regarding the study, Mrs Nanga joined the team to gain the experience of something different from what she was doing. Considering the multi-dimensional objective of bricolage, the team welcomed her to come build and acquire different business skills, knowledge and experience on live share trading using ICT. The team was so thrilled to learn that their objective of ensuring that the multiple voices with multiple perspectives of the society from all dimensions, that is, educationally, economically, politically and socially, could be achieved.

**ii.) Mr Mkhulise (professional share trader)**

There was one male entrepreneur and a director of a business, Mr Mkhulise. His business specialised on training people on foreign exchange (FOREX), CDFs, crypto currency (for example, Bitcoin, Dascoin, etcetera), and share trading. Based on the information acquired

from Mr Mkhulise, the team then agreed that to instil the spirit of entrepreneurialism, the project would start by training our students on entrepreneurial skills on live share trading using ICT and subsequently, other trainings would be conducted. As shares form part of the Grade 12 Business Studies syllabus, the team agreed to start training on the live share trading, as it would automatically serve as one of the strategies that would be used to eliminate the challenge of using conventional teaching methods, used by Business Studies teachers when teaching BOCS using ICT. Therefore, it was anticipated that the skills, knowledge and experiences that Mr Mkhulise, the "trader", possessed would help in ensuring the infusion of the theory learnt from textbooks with live practical share trading occurring in the real-life situation, thus achieving the objectives of the study.

According to the team, after training from the project, learners' live share trading accounts students would be taken as their own "businesses" and/or by-products of learning BOCS, the entrepreneurial skills using ICT while they are still at school, which would consequently bridge the gap between theory and practice. Moreover, it was further anticipated that Mr Mkhulise would be relevant because he had been in the trading business for more than ten years and had been progressing since then. In addition, he held a Diploma in Financial Management and a certificate in FOREX and share trading, which is significant for the achievement of this study's objectives.

There was excitement amongst all the members as one of the learners, Khanya (Learner A) said:

> "*We are grateful to be the first Business Studies group to take part in the practical teaching and learning situation by having our own trading accounts while we are still at school*".

Kudum (Learner B) replied:

> *"It is true that we are going to be the first group of students in the school to have our own businesses while doing Grade 12, what an experience!"*
>
> *"Definitely, this would be an exciting, diverse and incredible experience where learners would directly partake in their educational journey and consequently in the country's productive social, political and economic activities"*, added Miss Nkosi with great enthusiasm.

Mr Mkhulise suggested:

*"We need to draw up a plan of action to ensure that the society benefits from the anticipated strategy."*

#### *4.4.4.7 Local Economic Development (LED) manager*

Miss Nkosi worked as the LED manager in part of Amajuba District Municipalities. Her duties were to determine business development strategies, focusing mainly on small business, the packaging of local economic development projects and programmes, the offering of SMME advisory services, cooperative development, tourism development, applying broad-based black economic empowerment (BBBEE) policies, maintaining projects for job creation, poverty alleviation, as well as upholding stakeholder relations. Miss Nkosi worked for the Small Enterprise Development Agency (SEDA) as a business advisor where she was in charge for skills development for SMMEs, youth and cooperatives.

Miss Nkosi suggested:

*"Even if we may use WhatsApp group to meet, due to our various schedules, we also have to meet face-to-face to get to know each other more."*

She added:

*"This study is really good for us all. It teaches us that whatever skills and knowledge learners acquire in class should be implemented practically in their real-life world."*

She also worked for ABSA Bank as a small business manager, SMME manager and graduate trainee. Her duties were to provide financial assistance and offer guidance on the drafting and analysis of business plans, small businesses (SMME), capacity building, stakeholder management as well as project management.

She held a Bachelor of Commerce degree majoring in Finance and Economics. She also possessed a Diploma in Business Studies majoring in Accounting and Economics. She possessed certificates in Learning the Brazilian Experience, SMME Development and Entrepreneurship Development Programme.

Learner Two said:

*"Mrs Nkosi, we are happy that you are going to teach and train us on the development and presentation of a business plan, using ICT through the workshops you are going to conduct".*

Mr Mkhulise added:

*"You are lucky guys; it is high time that business skills are instilled to you while you are at school to bridge the gap between theory and practice, just like what multi-racial schools do. I am so impressed!"*

It was anticipated that the member would share her skills, knowledge and experience with the team in the teaching and learning of BOCS using ICT. It was also agreed upon that she was going to facilitate trainings and workshops on business development strategies, business skills development for SMMEs and youth and on drafting and analysing business plans in relation to the outside world. It was expected that these trainings would help both teachers and learners to bridge the gap between theory and practice.

#### *4.4.4.8 NAFCOC representative*

The National African Federated Chamber of Commerce and Industry (NAFCOC) had been advancing the cause of Black businessmen and women that were marginalised by the Apartheid system. NAFCOC is a voluntary association and business support organisation that started in 1964 to serve small to medium businesses in Black-dominated economies.

Initially, there were two female representatives from NAFCOC; these were Miss Xulu and Miss Nakurum, from the location. It should be noted that after the first few meetings, the team had one of the NAFCOC representatives leaving due to her personal issues that hindered her from being part of the study. During the first meeting, Miss Xulu told the team that the main intention of NAFCOC, as an organisation, was to stimulate and inspire the expansion of the small business sector and Black businesses in general in South Africa, thereby drawing the marginalised mainstream into the mainstream of economic activities and decision-making in South Africa.

To ensure that NAFCOC was imperative for the study, Miss Nakurum said: *"The inclusion of NAFCOC in the study would encourage, inculcate and engrave in learners the love and passion for starting businesses, including agriculture."*

Miss Xulu (interrupted): "*It is true! When we had a meeting with the Minister of Agriculture, who said, 'youth should be involved in a number of businesses to decrease poverty and unemployment and contribute to the development of the country's economy.'"*

NAFCOC's significance to the study was through a shared vision of liberating the historically disadvantaged rural and urban community through imparting business skills, knowledge and experience essential for learners' intellectual growth. This confirmed to the study that there

was hope for the marginalised through collaboration with other stakeholders. Learners were afforded an opportunity to interact through representation, ask questions and propose the way forward. That confirmed the bricolage's principles of allowing multiple voices, especially of those with subjugated knowledge and skills, which are excluded from decision-making processes. All co-researchers were empowered by the knowledge gained from the association. The representatives contributed knowledge during meetings and workshops held for the designing of real-life-situation strategies to teach BOCS using ICT for Business Studies learners.

### 4.4.5 Recruitment of co-researchers and processes

After the approval letter of ethics was received from the University of the Free State Education Studies Ethics Committee, as well as the letter of approval to conduct a research from the KZN Department of Education, the researcher then started with the process of engaging and recruiting other stakeholders. The researcher firstly visited the centre personally to make an appointment with the centre manager, concerning the intention to conduct a research in the centre. After the meeting, the centre manager and the teachers agreed to participate in the research. The researcher then used a poster to recruit learners who would like to participate in the research. Furthermore, the researcher telephonically and personally met with the rest of the stakeholders.

## 4.5 INSTRUMENTATION

Working with numerous co-researchers made it possible for the researcher to gather data applicable to the study. Following certain stipulations, the researcher intermingled with the centre manager, Business Studies educators, subject advisor, learners and other stakeholders. When conducting research, the gathering of raw data is of utmost significance. For the researcher to substantiate, elucidate or nullify statements made in the continuum of the research, unprocessed and un-manipulated data must be organised and processed to derive meanings (Wynn, 2009; Qhosola, 2016). Co-researchers were fully engaged to ensure that data were relevant and accessible (Mahlomaholo & Netshandama, 2012).

Data were generated through meetings and were stored as agreed. The recordings would be done utilising audio tape-recorders, photos and minutes of the meetings would be captured by

the selected secretary. Moreover, free-attitude interviews, as a data collection instrument, were adopted by the research team. ICT tools such as WhatsApp and Facebook were also used to generate data. This was done to ensure that every detail of this research study and the true reflection of what happened were captured accurately and adequately.

The Critical Discourse Analysis (CDA) was used to analyse extracts of the texts (Chapter 5). Dube (2016) asserts that CDA is a connotation of discursive practices, events and texts and broader social and cultural structures that are utilised to analyse data. These spoken or written words are regarded as primary data (Toolan, 2002), which are used to obtain deeper meaning and repertoires of each participant (Mahlomaholo, 2012). It is however significant to understand the research site and co-researchers who participated in knowledge generation and the sustainability of the study before data are analysed.

## 4.6 INFORMATION SESSION

When conducting research using PAR, it is imperative that both the researcher and the co-researchers plan collaboratively and cooperatively for the successful attainment of the objectives of the study. Greenwood and Levin (2005) posit that this ensures the co-creation of knowledge; the skills and experiences of all the team members, which is rooted in local understanding, is realistically and pragmatically treasured to achieve the objectives of the study. It is the ultimate goal of any researcher using PAR to ensure that the project develops all the co-researchers and that is why, during the first meeting, all the team members agreed on a value-free environment each time they meet. They agreed that at every stage of the project, multiple voices from all the members would be allowed during the discussions and workshops, irrespective of their historical backgrounds, employment positions, qualifications and gender to afford democratic and equal opportunities, rights and powers to all the members. This ensured the appropriateness of applying PAR for the study and confirming that new things are produced when working collaboratively (Crane, 2011). Furthermore, during the information session, the coordinated team was firstly introduced on PAR as the methodology informing the study. It was thoroughly explained to all the co-researchers to ensure that they became familiar with it and that they could freely participate in the study. They were also informed that they were free to partake in and withdraw from the study at any time if there was need. Thereafter, the clearance certificate from the University of the Free State and the permission letter from the KwaZulu-Natal Provincial Department of Education

were circulated among the co-researchers. This served to confirm that the permission for the research that was about to take place was officially granted by the said institutions.

Thereafter, the team decided to discuss the procedure on how they would go about formulating and utilising the real-life-situation strategy to teach BOCS, the entrepreneurial skills on live share trading of using ICT to determine their common vision. The team came up with the objectives to be used to achieve their aims, which were to: understand the challenges that hinder the teaching of BOCS, the live trading of shares using ICT; formulate the strategies and/or solutions that could be employed in teaching BOCS using ICT; investigate the conditions under which the emerging strategy of teaching BOCS using ICT could be successfully implemented; anticipate possible threats that may deter the successful implementation of the emerging strategy of teaching BOCS using ICT and formulate indicators of the successful implementation of a real-life strategy of teaching BOCS using ICT. At this stage, the coordinated team identified the key issues and/or activities to be dealt with to ensure that the common vision agreed upon by the team was reached. The inter-sectorial and inter-disciplinary team also agreed that the activities to be executed would be identified, utilising both PESTLE and SWOT analyses, of which both are discussed below.

### 4.6.1 The team's common vision

From the identified objectives, the common vision that the inter-sectorial and inter-disciplinary team decided on, was to develop a strategy that could be used in the teaching and learning of the creation of business opportunities and skills. This strategy intends to instil the spirit and culture of entrepreneurialism in Business Studies learners to enable them to start their businesses while they are still at school and when exiting the school. This would bridge the gap between classroom theory and practice, which would holistically prepare lerners for the world of work. The vision of the team is therefore to link skills development to career paths and career development, committing to the aims of the National Skills Development Strategy (NSDS) III (Bean *et al.*, 2013). To achieve that milestone, the team should make an effort to collaborate and share their skills, knowledge, expertise, experiences and resources in designing a new teaching strategy that promotes REAL. REAL are comprehensive instructional methods that can be used in a technology-driven environment that suits the teaching and learning of BOCS, the entrepreneurial skills on live share trading skills (see 3.2.3). The team agreed on teaching students the online share trading through a demo, as well

as live accounts, once they would have mastered it while at school. The team agreed that these accounts represent learners' own "businesses", which would be the "by-products" of what they would have been taught in class on investment in stock and business studies.

### 4.6.2 Mission of the team

The mission of the team was to ensure that the need for Business Studies teachers to use REAL to teach, especially BOCS, the entrepreneurial skills using ICT, is accomplished. The team then agreed that they should also make an effort to collaborate and share their skills, knowledge and experiences in coming up with a new strategy that promotes REAL. In addition, the team members also agreed to draw up a plan of action as a condition where priorities, activities, the person responsible, resources and timeframes of the activities, would be articulated to ensure that the society benefits from the projected strategy. To ensure the application REAL, the team agreed that students would be taught three ways of buying and selling shares from the Johannesburg Securities Exchange (JSE). The first one was the *buying of shares* at the lowest price from big companies like Curio, Woolworths, et cetera, with an aim of *selling them* at a later stage when the share price would have increased. This is a long-term investment where students buy shares and become long-term shareholders for the business where they have bought shares.

The team agreed that this type of live share trading would teach and enable learners to become "young savers" and "young investors" with an aim of building capital and receiving dividends from the company's profits. Secondly, the team agreed that, as a long-term project, (meaning that the share trading trainings will go beyond the project) students would then be introduced to trading the Contract for Difference (CFDs) and FOREX trading, where they would be obtaining profits instantly. Lastly, the team agreed that crypto currency would then be introduced. It further agreed that students would then decide whether to do all types of trading learnt or would choose any method, where they would have excelled.

The team anticipated this as an opportunity to teach students how to save even their pocket money, social grants and the profit made from selling knowing that they can buy shares even with the little money they have instead of spending it. This would inculcate and instil in learners an entrepreneurial spirit and skills, thus developing responsible citizens with sound business minds while at and when exiting the AET. From the inter-sectorial and multi-dimensional team's view, this would ease the burden of the State (even if it is a smaller

percentage, there would be a difference) as fewer social grants would be paid to citizens as more learners (teenagers) would be involved in business. The human capital (learners) with the knowledge capital and skills acquired through the anticipated strategy would yield dividends through productivity and, arguably, the wealth of anyone who (learners) owns it.

### 4.6.3 SWOT analysis

The team also engaged in establishing the strengths, weaknesses, opportunities and threats (SWOT) analysis, relating it to their involvement in the study. Theoretically, SWOT analyses are used as inputs to evaluate various and creative generation of suitable and possible strategies for a project or any other situation that requires an informed decision (Hay & Castilla, 2006). A SWOT analysis is carried out once the objectives of the project have been established by the multi-disciplinary team hailing from multiple historical, social, political and economic backgrounds with diverse perspectives (Hay & Castilla, 2006). Both PESTLE and SWOT analyses were drawn in terms of the team's academic, social, cultural and personal credentials. The team's intention was to solidify their PESTLE and SWOT analyses and to embrace all factors that would enable the team to achieve success, thereby eliminating the limitations and barriers that might hinder the team from achieving its objectives (Tshelane, 2015).

#### *4.6.3.1 Strengths*

One of the most significance strengths the team had is that all the team members were directly involved in the designing of a strategy that could be used to teach BOCS, the entrepreneurial skills on live share trading using ICT. Furthermore, the team members comprised both professional and unprofessional people, which are the most important objectives of PAR, which states that everyone included in research should be enlightened to ascertain that the researcher and co-researchers gain new and expanded knowledge. Team members were cooperative, determined and dedicated to learn and cooperatively and collaboratively work to ensure the successful designing of a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT (Mthethwa, 2017; Kemmis, 2009).

In addition, the contribution of multiple perspectives, skills and competencies by business people, teachers, NAFCOC and learners created a synergistic and cohesive society where all

members were treated equally and given opportunities, which gave the team strength, believing that they would definitely design the proposed design. Another aspect of strength the team had was that of business people who offered the team relevant resources like the venue equipped with all the required trading accessories, for example, laptops, data projectors, WiFi and trading notes. This provision helped the team to relate what the literature confirms in DeJaeghere (2017), which asserts that creating a venture is often simulated at Arcadawho started their own business as a direct by-product of their entrepreneurial studies. In addition, Babson College, as a leading school for entrepreneurship in the United States of America, describes and arranges classrooms as "living laboratories" where theory is infused with practice (DeJaeghere, 2017).

#### *4.6.3.2 Weaknesses*

Time constraints proved to be a weakness as the team did not have enough time to meet, especially during the week. This was caused by the fact that classes normally started from four (16h00) to six (18h00), which was not enough time for some research activities. Moreover, it was always difficult for all the co-researchers to meet at the agreed time, because of different schedules from different working stations. Furthermore, even though learners were studying from AET, they were hesitant to confidently participate in the study, knowing that they were young people amongst elders. They did not know how they were supposed to respond to the issues being debated. Furthermore, there were occasional misunderstandings on some of the issues discussed amongst co-researchers, because of multiple knowledge, skills and experiences that were emanating from multiple political, economic, social and historical backgrounds, even though PAR promotes equity in every sphere of life.

#### *4.6.3.3 Opportunities*

Opportunities differed for each co-researcher. For example, learners were excited that they would be able to infuse the theory learnt in the classroom with practical or their real-life situations. Moreover, they would be afforded the opportunity to showcase the possibilities and practicality of executing their entrepreneurial skills on live share trading, enabling them to open their "businesses" (live share trading accounts) while they were still in school and

when they have exited the school. This means that the proposed and emerging strategy would give learners the opportunity to become producers and consumers; that means being the "*pronsumers"* of the skills, knowledge and experiences required in the Fourth Industrial Revolution paradigm.

Remarkably, teachers were also excited that for the first time, they would be able to teach both theory and practice when teaching BOCS, the entrepreneurial skills using ICT. The NAFCOC representative was excited that for the first time, the organisation took part in the upliftment and development of the learners' future and the subject advisor was thrilled about the fact that the proposed strategy, if successful, would bring something new to the curriculum if infused and perfectly implemented.

#### *4.6.3.4 Threats*

The threat that all co-researchers were worried about was the financing of the project. The fact that trading required the team to have the capital to buy resources, posed a threat that could hinder the project from proceeding. Furthermore, most of the team members had zero knowledge and skills regarding the use of laptops, let alone of executing live share trading using laptops. Although they were all treated equally, as per PAR principle, that scenario still posed a huge threat to most of them except the business person (the trader) who knew that trading involves money from its inception to the end.

Mthethwa (2017) proclaims the significance of power relations and the co-researchers' professional statuses, which may have negative effects on the responses of the co-researchers towards the projects. This entails that little or no skills, knowledge and experiences were possessed by some of the co-researchers, thus posing a threat to the functionality of the team. Moreover, teachers raised the issue of the impossibilities that could hamper the implementation of the emerging strategy, as all issues regarding the curriculum developed by the education policy makers (all policies that pertains education), also posed threats to the study.

### 4.6.4 PESTLE analysis

The inter-sectorial and inter-disciplinary team also decided on the use of both PESTLE and SWOT analyses. Normally, PESTLE analysis is used as a tool in organisations to plan or launch new projects, but in this case, it was used to help researchers design a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT. The concept 'PESTLE' is a mnemonic and has six environments where P stands for political, E stands for economic, S stands for social, T stands for technological, L stands for legal and E stands for environmental (Tshelane, 2015; Bean *et al.*, 2013). These are the aspects of the macro-environment, which originated from the outside of the business with the forces of change that affect the world and which would help the team ensure that the anticipated strategy would be positively aligned. In addition, the use of PESTLE by the team means that, whether the stance of any member is political, economic, social, academic or culturally inclined, it does not have any less or more meaning, as each dimension enjoys the sense of social inclusion and is not segregated by their origin.

For instance, before executing the live-share trading, learners should first do a market analysis, which is embedded in the macro market of PESTLE. For example, learners know the current political, economic, social, technological, legal and environmental (PESTLE) news at the global scale, as they do affect share trading markets. For example, the political and economic event where 17 banks manipulated the value of the South African Rand had an impact on the lives of people, businesses and on the State, which directly had impacted local and foreign exchange trading markets. This means that, should the learners trade at that time, they should have analysed the market using PESTLE environment before executing the trades, hence the importance of PESTLE. Another example is that of the Marikana Massacre where the society, as well as the whole nation, were affected politically, economically, socially and technologically. This led to the value of the country's currency being depreciated, which led to South Africa being downgraded to the junk status by global credit ratings done by Moody's, Standard and Poor (S & P) and Fitch ratings agencies. These examples depict the indispensable role PESTLE would play in up-skilling, honing and moulding students on being vigilant on all hidden and complex factors involved in BOCS, the entrepreneurial skills on analysing live-share trading before executing the trade. PESTLE factors are discussed below.

#### *4.6.4.1 Political*

The political factor has to do with current political events and the inter-sectorial and multi-dimensional team analysed it to determine how political issues my affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT. Politically, the team determined that, after 1994, numerous acts, which include the Skills Development Act (SDA) No. 97 of 1998, were enacted (Bean *et al.,* 2013). For example, SDA was enacted in South Africa with an aim of filling huge skills gaps which were caused by Bantu Education that was imposed on the "Natives" (Blacks, Coloureds and Indians), depriving them of the right to skilful education. Responding to the SDA, which works in conjunction with the National Skills Development Strategy (NSDS III), the current study intends to promote a skills development system that effectively responds to the needs of the labour market (learners) and social equity (Bean *et al.,* 2013). Therefore, the study presents the entrepreneurial skills on live-share trading using ICT, of which as the co-researchers agreed, would fill the gap of the shortage of entrepreneurial skills on live-share trading in South Africa.

#### *4.6.4.2 Economic*

This factor entails what is currently happening economically and the inter-sectorial and multi-dimensional team analysed it in order to determine how economic issues would affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT. The team agreed that, in the light of the current high rates of unemployment, the anticipated strategy was likely to help mitigate the problem as the strategy aimed at inculcating the entrepreneurial skills in learners, thus enabling learners to partake in the country's productive activities.

#### *4.6.4.3 Social*

This factor encompasses the current social circumstances and the inter-sectorial and multi-dimensional team analysed it to determine how social issues would affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. The inter-sectorial and interdisciplinary team suggested that, in the light of the anticipated

changes to learners' lifestyle due to the anticipated strategy, it was imperative that the strategy be designed.

#### *4.6.4.4 Technological*

The technological factor comprises the current technological trends and the inter-sectorial and multi-dimensional team analysed it to determine how technological issues would affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. The team suggested that the designing of the strategy would not clash with any technological factors, since REAL are instructional methods used in a technological-rich environment (see 3.2.3). In addition, the entrepreneurial skills on live-share trading are executed with technology, which means a positive change to the external and technologically changed environment.

#### *4.6.4.5 Legal*

This factor has to do with current legal developments and the inter-sectorial and multi-dimensional team analysed it so as to determine how legal issues would affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. The team agreed that because trading is legally accepted in South Africa, it would be advisable that learners be taught how to trade to assist them and the society mitigate the issue of unemployment in the country.

#### *4.6.4.6 Environmental*

This factor relates to the current environmental situation and the inter-sectorial and multi-dimensional team analysed it in order to determine how environmental issues would affect the anticipated strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. Trading is environmentally friendly, since it does not stimulate any negative effects that trigger global warming and therefore, the anticipated businesses (trading accounts) could be enhanced through the strategy.

### 4.6.5 Values

The inter-sectorial and inter-disciplinary team agreed on the values to work upon. These values include, amongst others, the notion that members should always be available on time, knowing that they come from different sectors and disciplines with different time schedules, hence all members should be available on time. In addition, it was suggested that members should respect other members' privacy, offer to help others, and should manage their annoyances, knowing that they are unique individuals. Lastly, members suggested that they must commit themselves to the project to ensure that the anticipated strategy is designed to ensure the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT.

## 4.7 IMPLEMENTATION OF PAR

After the team had discussed and debated on how they would achieve their common vision using PESTLE and SWOT analyses, they designed a plan of action that would respond to the objectives of the study. Mthethwa (2017) and Moloi (2014) posit that the plan of action ought to display the exploration of the project's aim and objectives as well as the strategies to be implemented to attain the objectives, timeframes to be adhered to, individuals in charge, monitoring the resources needed and the assessment framework. Accordingly, activities were then prioritised and systematically tackled by the team to better accomplish the objectives of the study. They decided to tackle numerous issues, such as: continuous professional teacher development (CPTD) and community involvement; infusion of rich environment and active learning (REAL) as teaching and learning approaches and strategies; collaborative lesson planning was the third activity to be tackled and lastly, lesson presentation.

These activities were decided upon because there was a concern that learners were unable to apply and implement classroom-acquired skills and knowledge in their real-life situations. The plan of action was then drawn up to ensure the juxtaposition and hybridity of learners' acquired and novel skills, knowledge and lived experiences to ensure that learners are globally and competitively equipped with the relevant skills and knowledge required for their survival in these informative and ever-changing economies characteristic of the Fourth Industrial Revolution (4IR). Responsible persons were also selected and delegated as per their credentials for duties that ought to be performed. All was decided, considering the requirements and urgency of the nature of the human capital (labour force) the country needs.

Therefore, based on the observations and reflections on analysis, the following table depicts a plan of action that was drawn up.

## 4.8 Prioritising activities

### 4.8.1 The strategic (action) plan

***Table 4.1: The strategic plan***

| Priorities | Activities | Person responsible | Resources required | Timeframe | Monitoring |
|---|---|---|---|---|---|
| Promoting continuous and professional teacher development | Workshops | Professional trader | Trading skills, experiences, knowledge and expertise. Hand-outs, note-books, pens, computers and Internet (Wi-Fi) | Over six months and beyond | Asking and answering questions relating to trading. |
| Teaching and learning approach | Workshops | Teachers, FOREX/share trader/entrepreneur and LED manager | Computers/laptops, notebooks, pens, textbooks, data projector and Internet (Wi-Fi) | Two weeks | Asking and answering of questions relating to trading |

| | | | | | |
|---|---|---|---|---|---|
| Collaborative lesson planning and preparation using ICT | Workshop on collaborative lesson planning using ICT (District lesson planning on Facebook, webpage, emails) | Business Studies teachers and Business Studies advisor | Lesson planning, Note-books, pens, textbooks and computer/laptop | Two weeks | Feedback session |
| Lesson presentation: Investments: securities | Teaching and learning of entrepreneurship skills and ICT integration in reality (business presentation (simulation) | Business Studies teachers, entrepreneurs | Lesson plan, notebooks, pens, textbooks and computer/laptop | Two weeks | Theory and practice: Learners practically opening demo and live accounts. |

#### *4.8.1.1 Explanation of activities*

**Activity 1: Promoting continuous and professional teacher development**

The professional trader was tasked to aid in the training and workshops of all the stakeholders to ensure the successful implementation of the strategy designed to facilitate the teaching of BOCS, the entrepreneurship skills on live trading of shares using ICT. He was the only specialist on live-share trading using ICT. The team agreed that for CPTD workshops to be effective, they should not be "one-shot sessions", but should be continuous to ensure that teachers are imparted with current knowledge, skills and competencies, aligned with BOCS, the entrepreneurial skills on live-share trading using ICT (see Section 3.3.5).

The team suggested that this would equip teachers' live-share trading skills and competencies, enabling them to infuse theory and practice when teaching and training learners on BOCS, the entrepreneurial skills using ICT. The team agreed that these CPTD workshops would afford and expand the scope of economic co-researchers (learners) in the country's productive and economic activities while they are still in school and when they have exited the school. Therefore, the team found CPTD workshops to be crucial and urgent as they ensure that teachers have sufficient content knowledge on abstract concepts, which learners find difficult to comprehend and implement in their real-life situation when learners exit the school. It was then agreed that the team would start with BOCS, the live trading of shares using ICT, as this would not need extensive and expensive resources as it would be on farming skills.

**Activity 2: Teaching and learning methods and strategies (REAL)**

When discussing the methods and strategies of teaching and learning BOCS, the entrepreneurial skills on the live trading of shares using ICT, the team considered the current entrepreneurial skills required in Amajuba District. During this activity, the team considered the current times as the "information age" or "knowledge-based society", which is characterised by the distribution of ICTs and the growing demand for new educational methods and pedagogies that foster lifelong learning (McLoughlin & Lee, 2007). We deliberated on the view that education is not only for the acquisition of knowledge and information, but should also emphasise the need to enable and support the development of

skills and resources, essential to engage with the social and technological change for learners to learn throughout life (McLoughlin & Lee, 2007).

Teaching methods and strategies utilised in rural locations vastly differ from those used in urban schools, due to the Apartheid education system that was imposed on Black learners. The team also agreed that the economic inequality that prevails among the South African race groups was caused by the Apartheid education system, for instance in rural location there is no electricity to use computers than in urbarn schools (Hasan, Rehman & Zhang, 2021). When taking the decision on the teaching methods and strategies, the team considered the ever-changing and ever-increasing technological developments.

The team then agreed that to unlearn the practices of the imposed education system instilled and engraved in teachers' minds, the team should utilise methods that are CAPS-policy compliant. That meant changing from using teacher-centred methods that allow learners to only retrieve what they have learnt to using learner-centred methods. In this activity, the team agreed to use REAL in the teaching of BOCS, the entrepreneurial skills on practical live-share trading using ICT to ensure that the gap between theory and practice is bridged.

First, the team used an authentic learning activities approach in the teaching and learning of BOCS, the live trading of shares using ICT to use graphics to present elements of practical share trading to make learners detect the direct effects of their actions and apply the knowledge gained in real-life situations (Dabbagh, 2005). Secondly, the team agreed to utilise a collaborative strategy from a constructivist or situated cognition perspective where the team members were allowed to jointly construct knowledge, as well as negotiate alternatives through argumentation, debate and reliance on each other (Dabbagh, 2005).

Thirdly, the team agreed on using a multiple-perspective instructional strategy to view the knowledge base from multiple viewpoints thus generating intellectual discord so that they appreciate the several perceptions held on a subject in real-world situations. This also ensured that students are occupied with investigating every viewpoint to look for a significant goal to the current issue, as well as develop new importance regarding their own encounters and information (Dabbagh, 2005).

Using ICT in the teaching and learning of investing in securities and share trading, the team agreed to use an online group discussion forum to promote collaborative group activities by letting members brainstorm ideas, debate problems and even develop further action plans in a finite and short period of time, using groupware (an application-sharing tool) via email,

WhatsApp groups and live chats. The team also agreed that these online discussions would also encourage members to articulate their viewpoint, hear other team members' viewpoints and ask questions about the investment of securities and share trading. The team also agreed that they would have an "asks the expert" email and Facebook link for other members to use when seeking expert opinions and perspectives about the investment on securities, that is, live-share trading, which was Mr Mkhulise, the entrepreneur. All the teaching methods and strategies used in the teaching and learning of investing in securities, the live-share trading using ICT were echoed by McLoughlin and Lee (2007), who stated that the use of ICT witnessed the fast extension and expansion of innovations that are less about "narrow-casting" and more focussed on creating networks in which individuals meet to work together, learn and construct knowledge.

**Activity 3: Collaborative lesson planning and preparation**

During this activity, the team agreed that there always has to be collaborative planning and preparation to ensure effective teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. By collaborative planning, the team understood that there should be joint and shared efforts to mingle the entrepreneurial skills and knowledge from the diverse, dispersed, digital and dynamics of teachers and the external stakeholders. This meant that the inter-sectorial team would plan and prepare lessons together in a face-to-face setting. Furthermore, the inter-sectorial team agreed that should it happen that they cannot meet physically, ICT in the form of ZOOM, WhatsApp, emails, Facebook, et cetera may be utilised.

**Activity 4: Lesson presentation: Investments in securities**

During this activity, the team agreed that a lesson should be presented in two sections. The team agreed that section one would be theory where both teachers would teach, while section two would be the practical part where learners would be taught how and when live-share trading is done. Additionally, learners, as well as other co-researchers, would be taught how share trading accounts are opened, as well as where they would start with a demo account for practice and live accounts after a repeated and thorough practice at a later stage. The team agreed that this part would be taken by Mr Mkhulise, the professional trader. Due to a lack of

the resources at school, Mr Mkhulise agreed that the team could use his business premises, as it has all the necessary resources required for the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. The use of ICT in the modern times of "information" or "knowledge-based" society in which we live and the increasing demand for new didactic approaches and pedagogies that nurture lifelong learning (McLoughlin & Mark, 2007) in the teaching and learning of BOCS, was paramount. This was due to the fact that the opening of both demo and live trading accounts would be practically done by all team members using ICT. During the lesson presentation, the team agreed that all the team members would be taking notes and helping learners through scaffolding to promote and ensure the effective and efficient collaborative sharing of ideas during the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT.

## 4.9 DATA ANALYSIS

The Critical Discourse Analysis (CDA) was utilised to analyse collected data. This was done to allow the researcher to widen and deepen the research team's understanding as reflected in the team's interpretations. CDA expands and simplify the emerging findings at both discursive practice and social structural levels (Matoetoe, 2017). Moreover, CDA helps to study the role of language in a society that emanates within a linguistic analysis of spoken or written texts and is applied across the social sciences (Given, 2008; Qhosola, 2016). CDA do not contribute specifically to a certain discipline, paradigm, discourse or theory, but is primarily interested in and motivated by pressing social issues. These social issues include social abuse, dominance and inequalities emanating from, replicated and resisted by text and talk in social and political contexts (Van Dijk, 1993, 2001; Qhosola, 2016). CDA further seeks to explore non-transparent connections, power imbalances, social inequalities, non-democratic practices and other injustices that occur in social, political contexts aiming at spurring people to corrective and fair actions (Dube, 2016). CDA addresses inequalities in educational sites, practices and systems, with appreciation of the fact that the world is characterised by disparity (Rogers, 2012).

From its commencement, CDA was envisioned to deal with the status quo in private and public discourses by identifying, investigating, resisting and counteracting the enactment of power abuse (Tenorio, 2011; Qhosola, 2016). CDA was appropriate to this study because the researcher to interrogate the social inequalities in the educational site, practices and systems

witnessed in the educational site where teachers with extensive teaching experience in Business Studies were uncooperative and refused to work as a team with the newly employed teachers. CDA permitted the researcher to discern the power structures utilised by teachers to perpetuate the status quo in the teaching and learning of BOCS, the live trading of shares using ICT.

Moreover, CDA is perceived as a political transformative theory that seeks to reveal social problems, like social injustices and inequalities, as evidenced by the historical imbalances caused by the Apartheid regime. Most learners, both in rural and urban areas, were and are still excluded from acquiring BOCS and knowledge that are globally competitive and economically friendly. This is caused by the legacy of the Apartheid and colonial education system where, for example, teachers utilised the traditional approach of educational delivery (Evoh, 2007). Therefore, Jorgensen and Phillips (2002) argue that CDA is not politically neutral, but a movement that ensures a sustainable social change.

CDA was utilised to achieve the objectives of the study. The researcher analysed the generated data at three levels, namely textual, discursive and social. When analysing data at text level, the researcher generally looks at text as spoken or written words. It is anticipated that text refers to written words only; yet, it also includes spoken words (Fairclough, 1993; Dube, 2016). Furthermore, the textual level involves critical linguistics whereas the discursive analysis level produces, distributes and interprets text where the readership is guided to a preferred reading (Fairclough, 1993; Qhosola, 2016). The researcher and co-researchers in this study analysed text in both spoken and written formats and spoken text was audio-recorded. Lastly, the social practice analysis explores the extent to which the text upholds or reproduces hegemonic discursive or social practices and how they stand in relation to certain prevalent conditions (Fairclough, 1993; Van Dijk, 1993).

Consequently, language users, the researcher and co-researchers who engaged themselves in text and talk are not speakers, writers, listeners and readers only but they belong to social groups' categories, professions, organisations, communities, societies or cultures. They also interact as men and women, Blacks and Whites, old and young, poor and rich and so on and in complex situations (Van Dijk, 1993; Qhosola, 2016). In the current study, the use of CDA in the analysis and interpretation of data to achieve the objectives of exposing and uncovering of social inequality, power and dominance that is taking place in the teaching of BOCS using ICT, was imperative.

## 4.10 CHAPTER SUMMARY

This chapter discussed PAR as a methodological approach, with a focus on the steps and phases that differentiate this kind of tactic from other associated research styles. The fundamentals of the PAR sequence were used to record the events that made it conceivable to generate information from co-researchers with dissimilar and diverse experiences. Furthermore, the chapter outlined the demographic characteristics of co-researchers. The required amounts of useful data were generated utilising the PAR approach. The chapter further explored the issue of data analysis and described how CDA was utilised to investigate facts from the manuscripts, conversations and social background levels to allow the study to accomplish its intentions as it centres on the standpoints of individuals who are the sufferers of manipulation of authority, supremacy and equivalence.

# CHAPTER 5
# PRESENTATION AND ANALYSIS OF DATA, INTERPRETATION AND DISCUSSION OF RESULTS TOWARDS THE DESIGNING OF THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION AND COMMUNICATION TECHNOLOGY

## 5.1 INTRODUCTION

The aim of the study was to formulate a real-life situation strategy (RLSS) to teach business opportunities creation skills (BOCS) using information and communication technology (ICT). This chapter presented and analysed each of the five objectives of the study. It further interpreted and discussed the five objectives of the study respectively. presented, discussed, and analysed data, and provides the interpretation for each of the five objectives of the study. The first objective pertained to the challenges encountered in teaching BOCS using ICT. The second objective pertained to the strategies employed in teaching BOCS using ICT. The third objective pertained to conditions that enable the teaching of BOCS using ICT. The fourth objective touched on the possible threats towards the successful implementation of the real-life situation strategy in teaching BOCS using ICT and lastly the indicators of the successful implementation of the real-life situation strategy in teaching BOCS using ICT.

Furthermore, each of the five objectives were sub-divided into appropriate sub-headings that were chosen and formulated in accordance with the respective constructs that define the various sub-aspects of the corresponding objectives arrived at in Chapter 2. The opening paragraph of each objective discussed the best practices that were derived from policies, theories and/or findings from previous research. The extract retrieved from empirical data were analysed in the context of the opening paragraph, proving its relevance for and influence on the formulation of a real-life strategy in teaching BOCS using ICT.

The empirical evidence was then presented in the form of written words, pictures and scenarios and juxtaposed with good practice, theory, research findings policy and legislation. CDA was used to access the meaning of data (van Dijk, 2009), in order to deepen our understanding of how these challenges influence the effective formulation of a real-life situation strategy in teaching BOCS using ICT. The meaning of the text was uncovered at

three levels, namely text, discursive practice and social structure in line with bricolage, the theoretical framework. In conclusion, empirical data was used to check whether it confirmed or refuted what the literature states. This analysis structure was applied to the main objectives, as well as all other objectives of the study.

## 5.2 THE NEED TO FORMULATE THE REAL-LIFE SITUATION STRATEGY IN TEACHING BOCS USING ICT

The research team held a meeting where it identified the difficulties experienced in teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. This necessitated the need to formulate a real-life situation strategy in teaching BOCS using ICT. The following challenges were identified: (a) The need for an inter-sectoral and coordinated team; (b) Marginal cooperative lesson planning; (c) A need to adapt to Rich Environment and Active Learning using ICT; (d) The use of static and standardised assessment; (e) A need for continuous professional development. These challenges are discussed in subsequent sections.

### 5.2.1 Inter-sectoral and coordinated team

An inter-sectoral and coordinated team affords opportunities to learn from multiple skills, including trading skills, market analysis skills, creative thinking skills, and etcetera, as well as competencies, resources, the human LED manager, professional traders (business people), business studies specialists, NAFCOC representatives, students and teachers (the primary human resources) and non-human (ICTs equipment) and infrastructural (well-resourced buildings) resources, and the wealth of knowledge (inert and tacit) from various external stakeholders within our communities (Dhurup *et al.*, 2016; Qhosola, 2016). This is because teams originate from far more diverse, dispersed, digital, and dynamic backgrounds and, even if they are faced with new hurdles, their success still hinges on a core set of fundamentals for group collaboration (Haas & Mortensen, 2016). Collaboration becomes more complex, but success still depends on the fundamentals (infusion of theory and practices) where students apply their knowledge and skills in their “lived realities”.

In this sense, it encourages or promotes success, competitiveness and achievement of set goals for all co-researchers. For example, students would be able to acquire and apply entrepreneurial skills on live share trading successfully, while competing globally with other

students in achieving the set goals of being able to apply, implement and infuse both theory and practice. Teachers, on the other hand, would be able to teach and produce students with multiple skills that would be applied by both students in school and alumni. Furthermore, inter-sectorial collaboration may also take a variety of forms, including face-to-face and technology-facilitated engagements. This is because of distance and diversity, as well as digital communication and the change of membership, as opposed to the problems of "us versus them" thinking and incomplete information (Haas & Mortensen, 2016).

However, in this case, there were instances that pointed to the lack of collaborative team work. The averments by the LED manager pertained to the importance of unity and collaboration between the school and the local economic development unit (municipality). The LED manager is responsible for the development of the local economy with the help of learners in the community and determines the Skills Development Plan for the community. The co-researchers shared the following:

> *"I noticed that investment in shares is the practical topic, which means that teachers have to use or* ***invite "people from outside" to come and teach the practical part of trading****…"* (LED manager).

> *"I agree... it is the lack of teamwork between* ***different departments*** *that cause the huge skills gap that we have in our communities."* (Professional trader).

The 'different departments' that the LED manager referred to carried the same meaning with what the professional trader referred to as "people from outside [school]". These notions were clarified during the deliberations, following the clarity-seeking questions. Hence, there was need to include the local economic development unit of the local municipality, the professional traders (business people), schools, NAFCOC, and et cetera. The meeting eventually agreed that "the huge skills gap that we have in our communities" could be addressed through the engagement of "people from outside the school who would come and teach the practical part of trading" which promotes what is called "inter-sectorial collaborative team".

Thus, involving external stakeholders would intensify and serve the purposes of the Skills Development Act (SDA) 97 of 1998 of developing the skills of the South African workforce (learners) to promote self-employment. Furthermore, SDA increases the level of investment in education and training in the labour market and improves the return on the investment (RSA, 1998). Live share trading skills has direct impact on the development of skills and

knowledge of the learners as promulgated in the curriculum, and can potentially fill the skills gaps in the country. For instance, section 2 of the business studies CAPS documents states that the purpose of teaching and learning of business studies is to equip learners with the knowledge, skills and values that are significant for self-fulfilment and meaningful participation in the society as citizens of a free country (DoE, 2011).

Therefore, the inclusion of external stakeholders, who may afford learners the opportunity of applying what they are learning in their real-life situation while they are still at school, has the potential of creating the social structure of the community of business studies practitioners. The inclusion of external stakeholders fills the skills gap in the local economy and community, which would automatically be spread country-wide. Related literature also concur that it is worthwhile to use outside expertise to help teachers educate learners in ways that lead to improved learning (Joyce & Showers, 2002). The current study has revealed that, through the infusion of external stakeholders, learners' live share entrepreneurial trading skills would be enhanced, thus promoting self-employment and a higher return in education and training of learners. This is supported by the following responses from in-depth interviews:

> Miss Nkehli: *"Colleagues, I'm worried, why do you use* ***different teaching methods and resources*** *while teaching the same subject, topic and grade."*
>
> Mrs Nondoyi: *"I have been teaching BOCS, for 27 years now, using the s****ame methods and resources and most importantly producing quality*** *results."*
>
> Miss Nkehli: *"I have been asking and telling my colleague that we should be working together, but she would say, she has been in the system for years, unlike me with only three years in the teaching profession."*
>
> Mrs Nondoyi: *"I see no need of asking anything from a newly employed teacher. I have also been marking business studies for National Metric Certificate for years. Therefore, I know and understand clearly what is expected of me to do."*

The co-researchers' responses clearly show that there is lack of collaboration and teamwork. The subject specialist of business studies in the Amajuba District was worried that two teachers at the same centre, teaching the same subject and topic, used different methods that included different resources. In one class there was no use of ICTs in the form of power point presentations and projectors, whilst in another class the teacher used the tools which brought

the reality closer to the students than the conventional way of teaching in the era of the Fourth Industrial Revolution (4IR).

The concern of subject specialist of business studies in the Amajuba District was more focused on students the learners' lack of equitable access and exposure to the resources that are available at school. Hence, the inequality and underutilisation of ICT in one class perpetuates social injustice and contradicts the principles of PAR. In other words, the business studies specialist was encouraging and motivating the other teachers to make use of the ICT available at school, in order to ensure the learners' equitable access and exposure to the resources. In addition, the participant's concern also highlighted the importance of using multiple "tools" (resources) at the school, which are natural, human-made and human in accordance with the historical origin of bricolage (Paradis, 2013) (see 2.2.1). Moreover, the participant's concern was on developing learners with complex and fluid live share entrepreneurial trading skills that apply on demos and live trading accounts, while they are still in school and after they exit the school. Hence, there was need to harness ICT skills, knowledge and experience to enable the school to reproduce and re-create the labour force (learners) that would be readily available to participate in the productive activities of the economy, while still in school and soon after exiting the school.

Moreover, a lack of collaboration and teamwork is evident in Mrs Nondoyi's response, which suggests that teachers with long service of teaching regard themselves as more knowledgeable, skilled and experienced than the newly appointed ones. The researcher begs to differ with this opinion, considering that the newly employed teachers are recently trained in the use of the multiple and complex ICT, which promotes the infusion of theory and practice in the teaching of BOCS, the entrepreneurial skills on live share trading. Consequently, this action by experienced teachers perpetuates discrimination and inequality among the members of the society. This act contradicts with the principle of PAR, which states that it promotes equity (see 3.3.3). Furthermore, Mrs Nondoyi's act contradicts with the principles of bricolage, which promotes multi-voices and multi-perspectives of people, which honour their multi-faceted backgrounds.

In addition, the phrase "…*quality results*…" cited by the participant, required us to do a follow up and ascertain the school results for the last two years. We further checked on the whereabouts of students who have been taught by the participant and found out that some of the students were pursuing their studies at tertiary level, and some were still at home doing

nothing, despite the "*quality results"* they have obtained. This made the researcher more curious on the essence of *"quality results" being* referred to in this context. The participant was comfortable with her approach of teaching using the textbook, copies and chalkboard, as she "…*produces quality metric results…*" which in actual fact are not adequate. The researcher argues that the inapplicability of the "*quality results"* that were produced by Mrs Nondoyi is evident as students still could not apply and implement the skills and knowledge they have acquired in class. The participant denied learners, as the beneficiaries of teamwork, the success and competitiveness they (learners) could have acquired from the multiple skills, competencies, resources and knowledge from other stakeholders, as discussed in chapter 3 (see 3.2.1).

From the discussion, we found out that the participant was referring to the results that were based on the memorisation of facts, instead of the results that enabled students to establish their own businesses (demo, as well live share trading accounts) in their real-life situations. Thus, for more than 27 years, the participant was more conventional and traditional as most students could not do anything with the results. The quality results in this regard was limited to the percentage pass rate that the participant was always obtaining, which excludes the question of currency, self-fulfilment, relevance to the economic activities, and meaningful participation of learners in the community, as propounded in the CAPS curriculum and required in the current epoch of the 4IR.

Moreover, the participant's remark that "…*I see no need of asking anything* …" smacks of arrogance which promotes people working in solo, instead of cohesion and unity at school. This has the inherent potential of promoting disunity and creates social class diversity at the school, where, contrary to PAR, older and more experienced people group themselves together against the newly and less experienced teachers. Therefore, it is decisive and does not encourage unity and teamwork, as promulgated by bricolage and PAR. We made a comparison to determine the resources and how they were used by the participant, as she was "*always*" producing "*quality results*" in the previous 27 years of teaching. We then discovered that she was using textbooks and copies from other textbooks as instructional media for more theoretical knowledge. On the other hand, the newly employed teacher was exposed to the use of iPods, simulations, power point, and et cetera, which is really needed in the current epoch of 4IR. This is the focus of the study, which seeks to promote the infusion of theory and practice in the teaching and learning of BOCS using ICT. Therefore, the participant's remark that there was "*...no need of asking anything from anyone…"* was

potentially decisive. The participant was resisting change and did not want to move from conventional and traditional teaching techniques, as this would take away her dignity as a veteran teacher.

Furthermore, the remark that *"…I know and understand clearly…*", when analysed in the textual level, indicates that the participant is never prepared to listen to anyone as she '*knows*' and '*understand*' everything about BOCS, and the entrepreneurial skills on live share trading better than anyone else, as she is always producing quality results. The participant's practices of lionising and regarding herself as the most high, powerful and knowledgeable being, who objectifies other people, contradicts with bricolage principles as the lens of this study (see 2.2.2.2). Bricolage ensures that the multi-voices and multi-perspectives of all stakeholders are heard and respected. Moreover, this practice resembles the epistemological stance of positivism in the traditional moment of qualitative research, which states that positivists believe that knowledge results from the empirical and meticulous observation (see 2.2.2.3). Thus, through her empirical data of using the textbook teaching methods and strategies, the participant has observed and witnessed that her learners do obtain quality results, and therefore refuses to work synergistically with her colleague. This monological Western science approach to knowledge construction contradicts the critical complex epistemology of bricolage, which holds the key to discern the multiple realities from multiple perspectives of the various stakeholders. This could help unlock the door to a new vision of humanness and human action in the teaching of BOCS, and the entrepreneurial skills on live share trading using ICT (see 2.6).

On the other hand, it should be noted that in the society we live in, when the teacher or the school always obtain 100% in the subject, the society (including the Department of Education) normally applauds both the school and the teacher. This could be the reason why cognitively the participant refused to work with her colleague, as this might affect her results or cause the percentage pass rate to decrease, leading to loss of dignity. The researcher argues that this practice engenders unnecessary competition among teachers, learners and schools, leading to lack of dedication and collaborative teamwork. Therefore, the research findings have revealed that if the business studies teachers had worked together and amalgamated the two teaching methods they distinctly used, they could have learnt from each other. For instance, the older and experienced participant could have learnt how to use a data projector to teach the types of businesses where people may invest shares, and their advantages and disadvantages. This could have improved her lesson delivery and helped acquaint the learners

with the use of ICT which does not only enhance learning environments, but also prepares the next generation for their future and careers (Noor-Ul-Amin, 2013).

On the other hand, the younger participant could have learnt the crucial and core trading concepts and the tacit content knowledge from the experienced teacher, which was significant for the learners. The limited use of a data projector only and scanty handwritten notes by the younger participant did social injustice to the learners, thus hindering them from grasping the knowledge and skills they need to apply in their real-life situation. Moreover, it is further evident from related literature and in-depth interviews that learners' process of learning the live trading of shares could be achieved through collaborative behaviours and sharing of diverse perspectives to promote deep learning in the teaching of BOCS, using ICT (Wilson & Stacey, 2004). Furthermore, it is evident from related literature and in-depth interviews that collaborative behaviours in the teaching and learning of BOCS, specifically, the live trading of shares, is crucial when stimulated by electronic group communication, for example, WhatsApp groups, emails and Facebook pages (Wilson & Stacey, 2004). It is therefore evident from the study that if the co-researchers had worked together, they could have realised the gap between theory and practice, as neither could methodically mingle practices in their lessons.

Moreover, they could have shared their various challenges, perspectives and ideas to revitalise their teaching methods and strategies, as they both used ICT in the conventional way to teach exactly what is in the textbook. Furthermore, they could have realised the importance of involving other community stakeholders, for example, professional share traders and/or the local economic development manager to form a collaborative and dedicated team, which emphasises the good practice of involving the teacher, parents, peers and other community members to help learners master concepts, which they do not understand on their own in the teaching of BOCS, entrepreneurial skills of live share trading using ICT. Thus, the practices of disregarding collaborative teamwork among teachers in the current study, contradicts the PAR principle which encourages direct contributions, different ideas and involvement of various stakeholders in the search for solutions (Mthethwa, 2017). In conclusion, lack of dedicated and collaborative teamwork among stakeholders is evident and there is the need to design a strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT.

### 5.2.2 Collaborative planning and preparation

Planning is as an economic activity intended for the management of time and essential resources (human and non-human), aimed at achieving an identified set of objectives/goals and a vision using the specific, measurable, attainable, realistic, time-bound, ethical and recordable (SMARTER) approach (Matoetoe, 2017, Bean, *et al*., 2013). It requires the planner, in pursuance of achieving the objectives, to engage in decision-making processes regarding on what to do, how to do it (methods to use), when to do it and who is to do it (human resources), as well as assessment criteria/measures that would be used to determine the extent to which the objectives are achieved. Essentially, when regarding planning as an intellectual and demanding process that requires the conscious determination of action courses and the basing of decisions on purpose, knowledge and considered estimates, the planner has to analyse the internal and external situation thoroughly (Adesina, 2011; Akinwumiju & Agabi, 2008; Adesina, 1990).

In an educational context, Matoetoe (2017) describes a lesson plan as a prepared collaborative roadmap, aimed at guiding the teaching practices and learning processes of business studies teachers to achieve the set objectives within an informed and agreed upon vision and/or goal. In the teaching and learning environment, the processes are to be sensitive and responsive to required envisioned skills, values and knowledge for self-fulfilment as prescribed by the lesson's objectives (Matoetoe, 2017; DBE, 2011). Collaborative lesson plans are prepared to aid teachers to explore, engage and develop themselves on practical teaching and learning methods, and strategies that provide and offer them a platform for professional curriculum development where assessment methods can also be tested. Lesson plans should also be collaborative where it involves peer-coaching by teachers teaching the same subject, or coaching by relevant external stakeholders where it would amalgamate the co-constructions of knowledge, skills, experiences and values, which would reduce teacher isolation, while bearing in mind the diverse learning needs and contexts of learners (Matoetoe, 2017; DBE, 2011).

Lesson plans should be done prior to the lesson presentation, so that they guide teachers as to what and how to teach, what resources to use and who are the external stakeholders to be involved to ensure the infusion of theory and practice (Matoetoe, 2017; ELRC, 2003; Joyce & Showers, 2002). In addition, a cooperative lesson planning and preparation should involve all the educational needs, such as lesson objectives, learners' and teachers' activities,

learners' interests, content to be taught and resource materials to be used by teachers (Matoetoe, 2017; ELRC, 2003; Joyce & Showers, 2002). Moreover, it should include expanded opportunities where learners may apply and implement the skills and knowledge they have acquired from the classroom to their lived realities, thus infusing theory and practice. In the current study, the expanded opportunities could be the practical implementation of entrepreneurial skills on live share trading by learners using ICT, thus starting their own real businesses (trading accounts).

However, before the lesson observation begun in the AET centre under investigation, both co-researchers provided us with the lesson plan shown in Figure 5.1.

**LESSON PREPARATION**

**SIZAKANCANE AET CENTRE**

**SUBJECT: BUSINESS STUDIES** **GRADE: 12**

**TERM: 3**

| DAY | TOPIC | CONTENT | DATE STARTED | DATE COMPLETED | RESOURCES USED | ASSESSMENT |
|---|---|---|---|---|---|---|
| 1 | Business Venture | Investment: Securities | 11/5/2018 | 11/5/2018 | Textbook, hand-outs, (data projector) | Classwork; Homework |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |

***Figure 5.1: Lesson plan (Source: Sizakancane AET Centre, 2011)***

When comparing this lesson plan with the one from the Department, the team determined that it had many limitations. The lesson plan in Figure 5.1 did not have lesson aims and objectives that act as a roadmap to guide teachers, in such a way that students acquire the desired skills and knowledge as the desired outcome for the lesson. Furthermore, the lesson plan in Figure 5.1 shows the topic and content only, and does not show the layout of the sub-topics, the prior knowledge, which would explicitly show the known to the unknown, and the abstract to the complex. This would guide teachers on what learners know about business venture, specifically on investment in stock before they commence the lesson.

It would also indicate to them the abstract and the complexity of the concepts that should be thoroughly explained and discussed, as well as the entrepreneurial skills on live share trading that need to be taught and instilled into the learners. In addition, learners' and teacher's

activities were not included in the lesson plan, leading to the detrimental effect that would misguide the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. The resources to be used, as provided in the lesson plan, were minimal as compared to the textbook, hard copies and the data projector. This would compromise the impartation of the entrepreneurial skills, knowledge, experiences and values, which are the significant end-product of the lesson. Moreover, assessments that would be given to learners were not explicitly written; for example, they did not show whether there were simulations or what would promote the infusion of theory and practice. Therefore, it may be concluded that the lesson did not follow the specific, measurable, attainable, realistic, time-bound, ethical and recordable (SMARTER) approach. This prompted the team to have a meeting with the co-researchers concerning the lesson plans. The co-researchers shared the following:

> *"Colleagues, the template of the lesson plan you use is not the same as the one we use from the department, where did you get it?"* (Mr Mkhulise)
>
> *"We crafted it ourselves… includes everything as required by the department. …for us it doesn't make any sense to repeat the content as written on the textbook as it keeps us within limits"* (Mrs Nondoyi).
>
> *"I had a new one when I joined the school, but found my colleague using this one…I then had no choice but to use it also"* (Miss Nkehli)
>
> *"This is really disturbing; this lesson plan is silent, especially for me who is not acquainted with the DoE. I mean, I'm really lost. Something must be done"* (Mr Mcimeli).

The remark that the lesson plan "…*is not the same as the one we use from the department…*" generally means that the template of the lesson plan used by business studies teachers at the centre was not the department's prescribed format for the lesson plan. This may suggest that the teachers did not want to follow the guidelines and procedures of the lesson plan, as prescribed by the DBE. The comments by Mrs Nondoyi further suggest a possibility of arrogance and defiance of authority; hence they "*crafted it*…" themselves and following the prescribed format "…*doesn't make sense*…" for them as it repeats what is already written in the textbook. This indicated that teachers did not want to use a lesson plan that would collaboratively and cooperatively include all the activities that were supposed to be included. Instead, they planned a lesson that suited them, using their own template. Moreover, the remark that, "…*I had no choice but to use it also*…" indicated that there was no room for

communication between the two teachers, even though they were teaching the same subject, as Miss Nkehli had to use the very same template that was used by Mrs Nondoyi.

Thus, there was no room for collaborative lesson planning, which led to the exclusion of learning activities that would have enhanced the learners' knowledge, skills and values. The lesson plan extract further shows lack of collaboration, since it did not show that learning and knowledge creation rest in a diversity of opinions, ideas and experiences of the stakeholders, as promulgated in the principles of bricolage. The teachers could have collaboratively prepared in terms of information, knowledge and skills that would ensure that learners and teachers are accurate and up-to-date in the teaching of BOCS, the live trading of shares using ICT.

Furthermore, when asked, *"…why don't you use the prescribed lesson plan from the department..."* the older experienced participant responded that "*…for us it doesn't make any sense to follow the prescribed format, it keeps us within limits…",* which explicitly indicates that the teachers were not prepared to collaboratively work with the department or follow the prescribed format of lesson preparation as it *"…keep them within limits…".* Furthermore, after a thorough checking of the lesson plan, we then asked for the whole term's lesson plans where we found out that teachers were utilising the same format of lesson plan. Thus, for all these years learners might have been short-changed and deprived of their rights of being acquainted with the diversified perspectives, productive skills, knowledge, values and abilities of various stakeholders for self-fulfilment as promulgated by bricolage. The co-researchers' activities also ignored the social justice and democracy of the learners, as the principles of PAR.

### 5.2.3 The need to adapt to Rich Environment and Active Learning (REAL) using ICT

REAL are technology-rich environments where comprehensive instructional systems are used to teach BOCS, the entrepreneurial skills on live share trading using ICT. REAL enhance learners' growth in participation, responsibility, decision-making, thinking and reasoning of students and promote studying, investigation and intentional learning, occurring within authentic contexts (Robinson *et al.*, 2015; Grabinger & Dunlap, 2002, 1995). REAL utilise generative and realistic learning activities/tasks and performance that are dynamic and interdisciplinary (business studies, economics and accounting), that stimulate and heighten higher-order thinking processes (Aparicio *et al.*, 2016; Robinson*et al.*, 2015) during the 4IR

("Machine Age") epoch. The 4IR stimulates the use of artificial intelligence (AI); digitalisation; Big Data; robotics, 3-D printing; autonomous vehicles; nano-technology; bio-technology; energy storage; material science; the Internet of Things and quantum computing that blurred the lines between the physical, digital and biological spheres (Jones & Pimdee, 2017; Martin, 2017; Peters, 2017; Schwab, 2017).

In the current study, AI, digitalisation and robotics can be used to execute trades on behalf of learners in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using REAL (Jones & Pimdee, 2017; Martin, 2017; Peters, 2017; Schwab, 2017). This means that, when assessed progressively in content, learners are aided in developing rich and complex knowledge structures (Aparicio *et al.*, 2016; Robinson *et al.*, 2015) and are acquainted with skills on how to utilise digital technology, communication tools and networks to perform practical tasks in the realistic learning context that delivers information (Martin, 2017; Aparicio *et al.*, 2016).

Moreover, the use of REAL in the 4IR would intensify and serve the purposes of the Skills Development Act (SDA) 97 of 1998, of developing the skills of the South African workforce (learners) to promote self-employment (RSA, 1998). For example, section 2 of the business studies CAPS document states that the purpose of teaching and learning of business studies is to equip students with the entrepreneurial knowledge, skills and values that are significant for self-fulfilment, and meaningful participation in the society as citizens of a free country (DoE, 2011).

The implementation of the REAL in schools is urgent to ensure the inclusion and fostering the culture of entrepreneurship as a viable career option in SA's school curriculum so that young people must be enhanced as job creators rather that job seekers, and hence become problem-solvers, as cited by the president (Ramaphosa, 2018). The day before the observation, the team had a meeting on how observation would be done. The team agreed that lessons were to be separated into two, to clearly show the theory and practice parts respectively. It was further agreed that the older and experienced teacher would do theory and the younger participant the practical part of the lesson. However, the need to adapt to REAL in the teaching of BOCS, the entrepreneurial skills on live share trading, was noted during the observation of both lessons. This is supported by the following responses from in-depth interviews:

Khanya: *"Ma'am, if the business where you bought shares gets liquidated, does that mean I have lost my money."*

Mrs Nondoyi: *"Eeh, I'm not sure of that as I have not practically bought shares myself. I think I would have to obtain more information on that my kids.*"

Learner A: *"Who determines the buying and the selling price of a share ma'am?* Mrs Nondoyi: *I'm not sure my kids; this is why I have to do a thorough research on the practical part of share trading."*

Therefore, it is clear that the older and experienced teacher relied mostly on the textbook, and did not use the AI, digitalisation, networking and robotics, among other things, that stimulates the current epoch of the 4IR. The 4IR compels teachers to utilise technology-driven instructional teaching and learning techniques, for example, the REAL to enhance learners' growth in participation, responsibility, decision-making and intentional learning in BOCS, the entrepreneurial skills on live share trading. Moreover, the interactions between the older and experienced teacher and the learners explicitly show the eagerness that the learners had to know deeper, but the participant's entrepreneurial skills and knowledge on live share trading was limited. The conventional teaching method that the participant has been using for 27 years to teach BOCS deprived the learners the acquisition of the entrepreneurial live share trading skills required during the 4IR epoch.

The need for the utilisation of REAL by business studies teachers, especially on the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT, is detected from the participant's remarks that "…*I'm not sure…"* and *…" I have not practically…"*, which clearly indicate that the business studies teachers need to be up-skilled on how to practically do live share trading. This would equip students with the knowledge, skills and values that are significant for self-fulfilment and meaningful participation in the society as citizens of a free country as promulgated in Business Studies CAPS documents (DoE, 2011).

In addition, the older and experienced participant's remark that "…*I have to do a thorough research…"*, indicates that she did not bother herself to perform a thorough research regarding the live share trading before presenting the lesson. Little did she know that she would be teaching this topic to the "BAT" (Born after technology) learners in the 4IR epoch who would want to know more regarding the live share trading, which left her being confronted with numerous trading questions that she could not answer. This contradicts with the EEA, which states that business studies should always have a desire to acquire new

knowledge, additional skills and expertise to become familiar with fresh and further thinking in a number of educational areas (ELRC, 2003).

The team then moved to Miss Nkehli's class for further observation on the practical part of the lesson. The participant used the data projector to project the notes on the wall. During the lesson presentation, the co-researchers shared the following:

> Kudum:… *"Ma'am, I have money that my parents saved for me since I was young. I am now interested on buying myself shares. How can I practically do that?*"
>
> Miss Nkehli:…*"Shares are bought and sold at Johannesburg Securities Exchange (JSE) as shown from the textbook, on page 240…even though I have never traded shares before, what I know is that you go via broker to buy and sell shares from JSE as shown from the diagram below."*
>
> Kudum:*…"Ma'am, do we have to personally go to JSE? How and where do we get brokers?"*

Figure 5.2 shows the diagram from the textbook:


***Figure 5.2: Buying and selling of shares (Source: DoE, 2011)***

The team found out that the lesson presented by Miss Nkehli was not sufficiently practical, as the ICT tool she used was an data projector only, which was used to project notes on the wall. We have noticed that even though an data projector was used, the "practical version" of teaching BOCS, the entrepreneurial skills on live share trading, was absent. Actually, the use of AI, digitalisation and robotics as REAL, propounded by the 4IR for the teaching and learning of BOCS, the entrepreneurial skills on live share trading, was absent (Jones & Pimdee, 2017; Martin, 2017; Peters, 2017; Schwab, 2017). Teachers did not create a classroom atmosphere that encourages the exchange of ideas, questions and experiences between students and learners, and between students and teachers. Moreover, the teaching and learning were not productive and informative, because when students showed interests by asking numerous questions, the teachers were unable to respond. This indicated that the teachers themselves had an immense lack of content knowledge, as well as of pedagogical

content knowledge in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT.

The participant's remark that "…*even though I have never traded shares before…"* proves her inadequacy of content and pedagogical content knowledge. The participant's action is contrary with section two of the Business Studies CAPS documents, which asserts that the purpose of teaching and learning of business studies is to equip learners with the knowledge, skills and values that are significant for self-fulfilment and meaningful participation in the society as citizens of a free country (DoE, 2011). Furthermore, this does not aid learners in developing rich and complex knowledge structures in the teaching and learning of BOCS, the entrepreneurial skills in live share trading using ICT.

Utilising the critical bricoleur's lenses by dismantling the positivist hegemony in research who unknowingly supports oppressive, marginalising and violate social condition (Rogers, 2012), learners, who are referred to as the "silenced" or the "excluded" during the lesson presentation tried by all means to question, learn and seek knowledge from teachers. It was unfortunate that even teachers from the AET centre themselves, who normally are referred to as the elite and authoritative control group over knowledge production, did not have adequate live share trading skills and knowledge. This confirms that business studies teachers' knowledge is being "controlled" somewhere by the elite and authoritative groups who have the forces of domination that affect the lives of individuals from race, class, gender, sexual, ethnic, and religious backgrounds of dominant culture(s), and the worldviews of such diverse peoples to contributes to the social transformation (Rogers, 2012; Denzin, 2001).

From the continuous and uninterrupted questions of learners that teachers could not answer, it might be concluded that both teachers' and learners' knowledge are taken as subjugated knowledge, the series of knowledge that are always disqualified by the elite and the authoritative group as "non-conceptual knowledge, as insufficiently elaborated knowledge, naïve knowledge, hierarchically inferior knowledge, and knowledge that are below the required level of erudition or scientificity"(Rogers, 2012) (see 2.3.6). In addition, the sixth moment of bricolage encourages the need for a democratic society and social justice (Given, 2008) and awareness of the need for a social scientific kind of research that promotes both rigour and praxis (Mosia, 2016).

This is the reason why there is a need for business studies teachers to adapt to REAL' technological-driven environment for the teaching and learning of BOCS, the entrepreneurial

skills on live share trading using ICT. This would promote social transformation, democracy and social justice for both teachers and learners, as promulgated by PAR. For this reason, the inclusion and fostering of the culture of entrepreneurship through knowledge production in BOCS, the entrepreneurial skills on live share trading, would be seen as a viable career option that would enhance job creators rather than job seekers for learners.

### 5.2.4 The use of static and standardised assessment

CAPS define assessment as a continuous (done on daily, weekly and/or monthly basis), planned process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment (DoE, 2011). Furthermore, EEA posits that teachers should use the assessment of learners creatively so that it serves many constructive purposes, sets high but achievable standards consistent with the levels and abilities of the learners, and that learners receive constructive and frequent feedback as a consequence of continuous and varied assessment (ELRC, 2003). Moreover, assessment must not only cover essential business knowledge, skills and principles, but should also promote entrepreneurial initiatives, sustainable enterprises and economic growth (demo and live accounts) (DoE, 2011) (see 3.2.4). This ensures that learners are engaged in realistic activities with realistic and meaningful tasks relevant to learners' interests and goals. This makes learners realise the direct implications of their actions and apply the knowledge acquired in real-world situations (Neely & Tucker, 2012; Dabbagh, 2005).

Assessment systems should be realistic to ensure that learners' real-world knowledge and skills are involved, as well as personalised to ensure that each learner's existing knowledge, skills and values are tailored towards the best interests of each leaner and should discourage memorisation (Elliot, 2008). Furthermore, assessments should be negotiated, agreed upon and collaboratively produced in partnership with learners to an extent that a learner's personal interest is engaged. Moreover, assessment should be tools/resource supported which promotes and encourages the use of ICT. To match the 4IR, these forms of assessments could be obtained from multimedia in text, audio and video format and could be digital where email, instant message logs, blog posts, wiki contributions, audio and video recordings should distributed and scattered across various sources (Elliot, 2008).

Conversely, the team determined that learners were given static and standardised assessment during the teaching and learning of BOCS, the entrepreneurial skills on live share trading

using ICT. Figure 5.3 shows the assessment that was given to learners during our observation.

**Activity 1.3: Investigate different investment options**

**Study the following extract from the newspaper and answer the following questions.**

| FOOD AND BEVERAGES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PE** | **EY** | **CP** | | **HP** | **LP** | **CH** | **V** |
| 18.3 | 5.5 | 4722 | CLICKS | 4804 | 3427 | +27 | 8194 |
| 31.8 | 3.1 | 4542 | PICK N PAY | 4790 | 3504 | 146 | 4511 |
| 27.7 | 3.6 | 1961 | PIKWIK | 1995 | 3459 | 61 | 4425 |
| 24.5 | 4.1 | 13564 | SHOPRITE | 14310 | 9418 | -587 | 5773 |
| 21.7 | 4.6 | 12100 | SPAR | 12242 | 8200 | -122 | 2033 |
| GENERAL DEALER | | | | | | | |
| X | X | X | MASSMART | X | X | X | X |
| X | X | X | MR PRICE | X | X | X | X |

*Source: Share price extract - Sunday Times: 29 April 2012*

1. **Name the broad categories that the companies in the table belong to.** **(4)**
2. **The shaded columns for the first company (CLICKS) is:**
   - **Closing price (CP) 4722 = R47,22**
   - **Highest price in the last 12 months HP is R48,04**
   - **Lowest price in the last 12 months LP is R34,27**
   - **Volume in thousands (V) is 8 194 thousand.**

**2.1 What was the highest and lowest share price obtained for Pick n Pay?** **(4)**

**2.2 What was the quantity of shares sold for Shoprite** **(4)**

**2.3 What was the closing price for Spar shares?** **(4)**

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***Figure 5.3: Learner assessment (Source: DoE, 2011)***

Therefore, the assessment that was given to learners did not follow the requirements of CAPS. Assessment is defined by CAPS as a continuous, planned process of identifying, gathering and interpreting information about the performance of learners, as well as using various forms of assessment (DoE, 2011). The above assessment does not use various forms of assessment, but instead, it is prescriptive. The instruction requires learners to do an investigation, but the assessment was given as a classwork and learners were instructed to write it individually and quietly. This contradicts the stipulation in CAPS, which states that assessment must not only cover essential business knowledge, skills and principles, but should also promote entrepreneurial initiatives, sustainable enterprises and economic growth (DoE, 2011). For example, in the current study, learners would be able to open demo accounts for the practical part and would move to live accounts once they have thoroughly grasped the knowledge and skills, while they are still at school, thus promoting entrepreneurial initiatives, sustainable enterprise and economic growth. The co-researchers' conversation further shows that the assessment was static and standardised.

> Mrs Nondoyi: "*Grade 12, take out your business studies classwork exercise books and textbooks, open on page 242 and quickly and quietly write that activity individually before we proceed to the next topic."*
>
> Khanya: *"But ma'am, what are these alphabets stand for? …you never taught us and we never saw them from our textbook?"*
>
> Mrs Nondoyi: "*This is the only activity we have from the textbook pertaining to this topic Khanya. You have to try doing it."*

The remark that "…*take out your exercise books and textbooks, open on page 242…*" generally indicates that the form of assessment used by teachers was static and standardised, as it was taken from the textbook. It shows that for both teaching and assessment, teachers deeply relied on the textbook. In their assessment, they do not cover essential business knowledge, skills and principles, nor do they promote entrepreneurial initiatives that learners may engage in after their lessons (DoE, 2011). Their assessment does not promote the establishment of sustainable enterprises, for example, allowing learners to open their own live share trading accounts and economic growth (DoE, 2011).

Furthermore, the participant's instruction that "…*quickly and quietly write that activity individually…*" restrict learners from collaboratively and cooperatively tackling this assessment as a group. This is contrary to Eliot's (2008) view that assessments should be

negotiated and agreed upon and collaboratively produced in partnership with students to the extent that learners' personal interest is engaged. The teacher's directive is segregating and individually treating learners separately, which ends up putting more pressure and confusion on them. As Riel (1998) observes, class rules and "discipline plans" are created to increase uniformity of action, ignoring that learners do not naturally fit into this rigid structure. Learners are different and started school at different ages, some with very different backgrounds and experiences, and all with unique strengths and weaknesses. They also learn at different tempos and need to have different experiences (Riel, 1998). This is evident from Khanya's concern that, "*but ma'am, what are these alphabets stands for?"* This indicates that students were never taught about the alphabets and neither the table per se. This shows that it was their first time to come across something like that, hence the confusion.

Therefore, it is the teacher's norm that after each topic learners are given activities to do without assistance. This is the reason why the learner remarked out of frustration that "… *but you never taught us and we never saw them from our textbook…"* EEA posits that teachers should use the assessment of learners creatively so that it serves many constructive purposes, which is contrary to what business studies teachers are doing (ELRC, 2003). Teachers are required by EEA to set high, but achievable standards, consistent with the levels and abilities of the learners, which is contrary to what the co-researchers set for their learners. The alphabets and the table itself were unachievable for leaners as it was their first time to encounter them. This means that learners did not receive constructive and frequent feedback as a consequence of continuous and varied assessment from teachers (ELRC, 2003). Teachers treat the assessment as a separate activity "detached" from the lesson. In addition, this act contradicts with Elliot's (2008) view that an assessment system should be realistic to ensure that learners' real-world knowledge and skills are involved and should be personalised, ensuring that each learner's knowledge, skills and values are tailored towards the best interests of each leaner.

Furthermore, Mahlomaholo (2013b) posits that the epistemological stance of bricolage is created through discussions that occur between and among members of the epistemic community, depending on the most powerful argument that has been collaboratively pieced together by all (see 2.5). Teachers contravened with the objectives of PAR, which states that PAR brings changes by permitting the sharing of information between and among the researchers and co-researchers, which promotes and allows sharing and learning (Mthethwa, 2017) (4.4.4).

### 5.2.5 The need for continuous and professional teacher development

Professional development (PD) is a process that engages and establishes teachers' knowledge, skills and attitudes that is aimed at creating, preserving, evaluating and transmitting knowledge through continuous learning. On the other side, CPTD is an element that requires the advancement of the quality and professionalism of teachers (Nzarirwehi & Atuhumuze, 2019; Macheng, 2016) (see 3.2.5). Furthermore, the EEA requires teachers to use all opportunities to acquire further and new skills, new knowledge and expertise in not only one subject, but more particularly fresh and further educational thinking, administration, management, vocational and/or technical areas (Tsotetsi, 2013; ELRC, 2003) (3.2.5). The Department of Basic Education (DoE) and South African Council of Educators Act 31 of 2000 (SACE) assert that professional development has to do with activities (workshop, course) that are undertaken by teachers severally and collectively with an aim of enhancing their professional knowledge, understanding, competencies and leadership capacity (Tsotetsi, 2013) (see 3.2.5).

However, in a meeting we had as a team pertaining to the PD and CPTD, the co-researchers shared the following:

> *"It is very sad that teachers are expected to teach BOCS, the live trading of shares using ICT, for which they themselves were not trained and never heard about. I mean, really how can they* (business studies teachers) *teach something that they themselves can't practically do?"* (Miss Nkosi, LED manager)
>
> *"We normally go to workshops that are always conducted by one person for approximately two to five days. The worse part of these workshops is that no practical part of teaching the entrepreneurial skills on live share trading using ICT was ever done"* (Miss Nondoyi).
>
> *"These workshops are not enough and effective; they are traditional, especially for us who are new and exposed to ICT"* (Miss Nkehli).
>
> *"We are always provided with hard copies which take us back to primitive epoch, yet expected to produce skilful and productive workforce"* (Miss Nondoyi).
>
> *"Shame! Poor learners, it is not fair, because we short-changed them. And worse part of it is that when trained the emphasis is on how to use, not how to integrate ICT in the teaching of BOCS. Eishhh! (Scrapping her head), it's so frustrating"* (Mr Mkhulise).

Therefore, the conversation indicates that the workshops that are provided to teachers did not engage and establish teachers' knowledge, skills and attitudes which are aimed at creating, preserving, evaluating and transmitting knowledge through continuing learning. Instead they are short and provided for only *"…two to five days…",* which are *"…not enough and effective…"* to engage and establish teachers' knowledge and skills in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT. For this reason, teachers are unable to transmit knowledge continuously, which impedes learners from acquiring new skills and knowledge required for the practical live share trading using ICT.

Furthermore, the remark that the teachers were "…*not trained for and never heard about it back then…"* clearly indicates that the training that was given to teachers themselves was not enough. This concurs with the following findings from related literature;

> *"The brown workman would always have to work under a European…his lack of inventiveness and of ingenuity in mechanical work would make him inferior to the European as a trained workman, and at no time would he compete with the European"* (Dr Lovedale).

Therefore, the training for the "natives" was minimal to ensure that they did not in any way compete with the Europeans. This act prevented teachers who were also natives to receive practical training. The reason why teachers "…*short-changed…"* learners was because they were not given all opportunities to acquire further entrepreneurial and new skills on live share trading using ICT. This further impeded them to familiarise themselves with fresh and further educational thinking, which is contrary to what is required by EEA.

Moreover, the frustration expressed by Miss Nkosi emanates from the crucial role she plays in drafting the Amajuba (Newcastle) Local Economic Development Review Strategy Development and Implementation, which is a roadmap on determining the required skills needed for the promotion and support of sustainable economic development within Amajuba District. One of the objectives of the LED is to identify the approaches that can be utilised to support the SMME development, in which teaching students BOCS, the entrepreneurial skills on live share trading using ICT, is crucial. The teachers "… *themselves can't practically do* (teach) …" the knowledge and skills that students could implement in their real-life situations and would always produce redundant job-seekers, rather than job-creators that would add to the human capital that is globally competitive (Ramaphosa, 2018; Malope, 2017).

The workshops that are set to develop teachers' professional development contradicts bricolage's epistemology, which ensures that the insights gained and the knowledge produced through workshops stimulates business studies teachers' and learners' skills and knowledge of live share trading to the new levels of epistemological and ontological awareness (Jenlick, 2006) (see 2.5). The knowledge and skills in the teaching of practical live share trading provided in workshops are minimal and therefore unable to enhance learners' skills. Moreover, contrary to PAR and bricolage's principles, workshops are unable to ensure that teachers convey the truthfulnesss and usefulness of knowledge and skills to learners. These worshops, in addition do not advance the agenda of equity, social justice, freedom, peace and hope (Mahlomaholo, 2013b; see 2.5 and 4.4).

For example, teachers' teaching of practical live share trading skills using ICT is enhanced and learners' skills of executing live share trading in their lived realities are well established of which, through the scanty workshops are minimal. Moreover, contrary to PAR and bricolage's principles, which ensure that the truthfulness of knowledge depends on its usefulness by teachers and learners when teaching and learning of BOCS, the entrepreneurial skills on live share trading and is assessed in terms of the extent to which it advances the agenda of equity, social justice, freedom, peace and hope (Mahlomaholo, 2013b; see 2.5 and 4.4).

## 5.3 COMPONENTS FOR THE USE OF THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION AND COMMUNICATION TECHNOLOGY

Section 5.2 discussed the challenges that were identified in the teachingof BOCS, the entrepreneurial skills on live share trading using ICT. In this section, components which respond to each challenge are discussed. These include inter-sectoral and coordinating teams, cooperative planning and preparation, adapting to Rich Environment and Active Learning using ICT, dynamic and practical assessment and promoting continuous and professional teacher development. Each of these components would be discussed adequately.

### 5.3.1 Inter-sectoral and coordinating teams

An inter-sectoral and inter-disciplinary coordinating team for purposes of facilitating processes of designing a strategy to teach BOCS, the entrepreneurial skills on live share trading, is indispensable. This team presents opportunities for multiple-perspectives, multiple-skills, multiple-theories, multi-layered and multi-dimensional and critical knowledge [primitive (subjugated) and civilised], stemming from various sectors (Rogers, 2012). This is the meaning-making process, dubbed by Lévi -Strauss (1966) as an "intellectual bricolage", in which the researcher, as the meaning-making bricoleur, believes that there is no approach or procedure, plan, method, tool, or checklist of criterion of knowledge-construction like engineers do (see 2.5). Instead, as a bricoleur, the researcher believes that the development of the strategy to teach BOCS is flexible, fluid and open-ended processes. According to Rogers (2012), the inter-sectoral and inter-disciplinary team is qualified to adapt at performing huge and diverse tasks in the designing of a strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT.

As the researcher understands it, the team had to be diversified, with each team member possessing his or her skills, knowledge, abilities and expertise, which affords them the opportunity to synthesise and synergise them, leading to multiple-perspectives, multi-theoretical, and a multi-dimensional position. The synergy, which is bricolage in this case (see 2.2.1), affords them an opportunity to recombine the pre-existing knowledge, skills, abilities and expertise to regenerate new knowledge which articulates the intellectual capacity to design a strategy to teach BOCS, the entrepreneurial skills using ICT (Campos & Ribeiro, 2016). This means that, whether the stance is political, economic, social, academic or culturally inclined each dimension enjoys the sense of social inclusion and is not segregated by their origin.

In this case, the inter-sectoral and inter-disciplinary diversified team comprises of business studies teachers with their theoretical teaching skills and knowledge, a professional trader with both theoretical and practical skills on live share trading using ICT, the LED manager with her economic knowledge and skills needed in the community, a business studies specialist with his leading, managing and educational training skills and knowledge, a NAFCOC representative with his business organisational skills and knowledge, and learners who with their existing theoretical business studies knowledge, would be acquiring new entrepreneurial live share trading skills and knowledge and implementing them in their "lived

realities". As Haas and Mortensen (2016) would testify, incomplete information is more prevalent if team members were to work individually. Hence, the creation of a collaborative inter-sectoral and inter-disciplinary group with multi-perspective, multi-theoretical and multi-dimensional of abilities, experience, skills and comprehensive information and expertise is required for the designing of the strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT. Therefore, it means that if schools had to work in isolation without other stakeholders, they would produce students who would not merge the skills, knowledge, abilities and expertise that are currently required by the system in the current epoch of the 4IR, thus failing the system. However, after numerous interactions, there were suggestions for the establishment of a team. The co-researchers shared the following:

> *"Since we are working in the same school and teaching the same subject, it is appropriate that we establish a team with the same vision."* (Mrs Nondoyi, with 27 years of service as business studies teacher).
>
> *"A team with both internal and external stakeholders so that we share the skills, knowledge and experiences that we all have"* (Miss Nkehli, young recently qualified business studies teacher with ICT skills].
>
> *"...good idea colleagues! ...we need to draw up the plan of action to ensure that the society benefits from the anticipated strategy..."* Mr Mkhulise [professional trader].
>
> *"Even if we may use WhatsApp group to meet, due to our various schedules, we also have to meet face-to-face to get to know each other more... (remixability, wisdom of crowds)"* (Miss Nkosi).

Therefore, the idea of establishing a coordinating team was welcomed, since co-researchers would "*establish a team with the same vision*" (Mrs Nondoyi) so that they "*share the same skills, knowledge and experience*" (Miss Nkehli), and could "*draw up a plan of action*" (Mr Mkhulise). Hence, "…*we also have to meet face-to-face*" (Miss Nkosi).

This suggests that the inter-sectoral and inter-disciplinary team should develop a unified and shared common vision that does not segregate, but allows a team to work together. Mrs Nondoyi's response, when analysed in its depth and breadth, indicates that the 27 years of teaching experience have made her realise that *"no man can live in isolation"*, which means that business teachers in schools should work with other relevant and related stakeholders to establish a team vision. The team agreed that their common vision should be the development of a strategy of teaching creative business opportunity skills, which is the thrust of the current study. This would instil and inculcate the spirit and culture of entrepreneurship in learners,

while they are still in school and after completing school (see 4.9.1). Hence, the live and demo trading accounts would be the "by-product" of what is learnt in schools, which would bridge part of the huge skills gap in South Africa, while introducing learners to the world of work (see 4.9.1).

Moreover, the team agreed that they should share their available resources, multiple skills, knowledge, values and expertise at their disposal to co-create, reorganise, recombined and reproduce something new, as advocated by bricolage (see 3.2.5 and 2. 2.1). This was also discussed and agreed upon during the information session (see 4.9.2) to ensure that business studies teachers use REAL to infuse theory and practice.

Furthermore, since it was a team emanating from the inter-sectoral and inter-disciplinary, it was imperative for the co-researchers to draw up an action plan that would allow them to collaboratively determine the activities to be done according to their priorities, the person responsible for the identified activities, and the resources required for the implementation of the activities, as well as the time frame that would be required for the implementation of the action plan (4.11). Moreover, Mr Mkhulise, as a business person, suggested a plan of action for numerous reasons, for example, an action plan would give the team time to set the convenient dates where a "collaborative remixability" of skills, knowledge, experience and expertise and values as part of the situational analysis would be discussed, debated, synergised and synthesised, leading them to the concrete "collective intelligence" and/or "collective intelligence".

The team also agreed that meetings and interviews (FAI) may specifically be done online using the Web 2.0 applications, dubbed "social software" (Jimoyiannis *et al.*, 2013), to promote digital communication with high connectivity (see 3.2.5), if some team members did not have time to attend in person. In addition, the team suggested that interviews (FAI), workshops and observations could only be done face-to-face to allow the team to collaboratively share the crucial type of intelligence. According to Haas and Mortensen (2016), the use of only digital communication cannot do, since there is need to empower and allow people the intimate connection at a deeper level of processing and utilising their own knowledge as advocated in PAR (see 4.4.1). Hence, both online and face-to-face meetings are significant for the fruitful and productive development of the strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT.

### 5.3.2 Cooperative planning and preparation

Planning, as an economic activity for the management of time and essential resources (human and non-human), is aimed at achieving an identified set of objectives/goals and/or a vision using the specific, measurable, attainable, realistic, time-bound, ethical and recordable (SMARTER) approach (Matoetoe, 2017; Bean, *et al*., 2013). Essentially, when regarding planning as an intellectual demanding process that requires the conscious determination of action courses and the basic of decisions on purpose, knowledge and considered estimates, the planner has to analyse the internal and external situation thoroughly (Adesina, 2011).

In this case, teachers have to prepare a lesson prior the presentation, which serves as a roadmap that guides them on their teaching practices and learning processes to achieve set objectives within an informed and agreed upon vision. The learning processes are to be sensitive and responsive to the required envisioned skills, values, expertise and knowledge for self-fulfilment prescribed by the lesson's objectives (Matoetoe, 2017; DBE, 2011). In addition, a cooperative lesson planning and preparation should involve all the educational needs, such as lesson objectives, learners' and teachers' activities, learner's interests, content to be taught and resource materials to be used by teachers (Matoetoe, 2017; ELRC, 2003; Joyce & Showers, 2002). Collaborative lesson plans are prepared to aid teachers explore, engage and develop themselves on practical teaching and learning methods and strategies that provide and offer them a platform for professional curriculum development, where assessment methods can also be tested. Lesson plans should also be collaborative where it involves peer-coaching, as well as relevant external stakeholders where it amalgamates the co-constructions of multiple skills, knowledge, expertise, experiences and values, which would produce multifaceted meanings for all co-researchers.

The team had a meeting where they agreed on preparing a lesson plan collaboratively and that both Mrs Nondoyi's and Miss Nkehli's classes were going to be merged into one class. Furthermore, they agreed that both teachers' lessons, together with the help of other stakeholders, were going to be presented. Figure 5.4 shows the lesson plan that was collaboratively prepared.

**LESSON PLAN:** Business Studies

**Grade:** 12

**Context:** BUSINESS Venture

**Content:** Investment in securities

**Duration:** 50 minutes

**Learning Objectives: At the end of this lesson, learners will be able to:**

- Define or explain investment concepts (types of shares) and stocks.
- Explain the importance of investing in stock
- Able to demonstrate their knowledge where this is applied in real-life situations

**Specific aims: Business studies ensures that learners are:**

- Able tocreate business opportunities, solve problems and take risks sparingly.

**Integration with other subject:** Economics and Accounting

**Prior knowledge:** No prior stock market or investing knowledge

**Expanded opportunities:** Learners will be able to apply the knowledge they have acquired in classroom on their real-life situations' lived realities

| **TEACHERS' ACTIVITIES** | **LEARNERS' ACTIVITY** | **LTSM** |
|---|---|---|
| a) Prior Knowledge: Explaining the background of investment<br>b) Body: Explain investment conceptsand stocks.<br>c) Explain the importance of investing in stock<br>d) Demonstrate their knowledge where this is applied in real-life situations | Listening, taking notes and asking questions | Laptop, int<br>textbooks<br>note books |
| **Skills**: Trading, money management, presentation, market data analysing, basic maths. | | |
| **Knowledge**: Fundamental analysis, stock market concepts, stock market tables, basic investing princip works | | |
| **Values**: Respect, taking sound decisions, commitment, work as team members, responsible being | | |

***Figure 5.4: Lesson plan (KZN DoE Business Studies Teacher Resource)***

The lesson plan in Figure 5.4 indicates that it was sensitive and responsive to the required envisioned skills, values, expertise and knowledge for self-fulfilment in the learners' real-life

situation. Furthermore, the lesson plan involved all the educational needs, such as lesson objectives, learners' and teachers' activities, learner's interests, content to be taught and resource materials to be used by teachers. Moreover, the collaborative lesson plan prepared and aided teachers to explore, engage and develop themselves on practical teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. This collaborative lesson plan also enhances teaching methods and strategies that provide and offer them a platform for professional curriculum development, where assessment methods can also be tested. This lesson plan further involves the variety of resources, knowledge, skills and processes of relevant learning areas. The lesson plan shows connections between learners, teachers and other related stakeholders and recognises that learning builds networks of information, contacts and resources that are applied to real problems. The lesson plan shows the cycle of knowledge development among stakeholders and allows learners to remain current with all the related skills and knowledge in the teaching and learning of BOCS, live share trading using ICT. The following responses show how the co-researchers reacted to the collaborative lesson plan:

> *"Congratulations teachers; the lesson plan we are presented with shows all the features as required by the department. It also shows that it was collaboratively and cooperatively planned by all stakeholders"* (Mr Mcimeli).

> *"We have now realised that lesson preparation is not about us as teachers, but about learners' future. Collaboration and cooperation within and among us as the team is appreciated"* (Mrs Nondoyi).

The responses indicate that there is harmony among all team members as they are now working collaboratively and cooperatively when preparing a lesson plan. It indicates that they have resorted to conform to the standards of the department. The phrase "…*not about us…"* illustrates that teachers have now realised that when they plan lessons it is not about them, but learners' skills, knowledge and values they need to apply on their real-life situation. Furthermore, the sense of collaboration and cooperation in the preparation of lesson plans empowers and enhances social justice for almost all stakeholders, especially learners, as advocated in PAR (see 4.4.1). Moreover, collaborative lesson planning promotes multi-voices with multi-perspectives from various stakeholders, as promulgated in bricolage (see 2.9). It is therefore imperative that CLP involves the external stakeholders like industries to ensure that the education system produces what is required by the industry and the current epoch of the 4IR.

### 5.3.3 Adapting to Rich Environment and Active Learning using ICT

REAL are technology-rich environmentssuited for the 4IR that stimulates the use of artificial intelligence (AI), digitalisation, robotics, and other related ICT resources in the teaching and learning environment. REAL are comprehensive instructional systems used to enhance learners' growth in participation, responsibility, decision-making and intentional learning. REAL utilises generative and realistic learning activities/tasks and performance that are dynamic and interdisciplinary (business studies, economics and accounting) to stimulate and heighten higher-order thinking processes. REAL equip learners with the knowledge, skills and values that are significant for self-fulfilment and meaningful participation in society as citizens of a free country (DoE, 2011), aimed at producing a highly skilled and globally competitive workforce (learners).

In the meeting, the team agreed to practise team-teaching, where both Mrs Nondoyi and Miss Nkehli agreed to teach theory simultaneously and Mr Mkhulise practical. The team believed that it would be productive and beneficial if the practical on live share trading is taught by Mr Mkhulise, an experienced individual with ample knowledge and skills on trading. The co-researchers agreed that teachers would gradually grasp the trading skills as the project unfolds. Mr Mkhulise agreed to give the team his venue with full resources that would enable it to do practical teaching and learning of BOCS, the entrepreneurial skills on the live share trading using ICT. Furthermore, the team agreed that Mr Mkhulise would be teaching practical on live share trading as part of the continuous teacher development programme.

During the lesson presentation, both Mrs Nondoyi and Miss Nkehli repeated what they have taught before, except that they went deeper and explained what was left out before. The following responses help illustrate what transpired after the lesson presentation:

> *"Ooh! Thank you so much teachers with this rich knowledge, I am sure, we are all convinced"* (Miss Xulu, NAFCOC rep).

> *"Thank you, teachers for giving us this important information; to me it seems as if it is the first time to learn about this"* (Mrs Nanga).

The responses indicate that REAL was excellent in the teaching and learning of BOCS, the entrepreneurial skills on live share trading, even though it was still the theory part. The co-researchers were thankful about the *"rich knowledge"* (Miss Xulu) and *"important information"* (Mrs Nanga) that was given to them by teachers and other members. The whole

team was happy to obtain new knowledge and information through the interactions that took place after the lesson presentation by teachers. After both teachers have finished presenting, Mr Mkhulise took over on the practical part of the lesson. The following excerpts help illustrate the proceedings of the collaborative lessons:

> Mr Mkhulise: *"Who have bought shares from any company before? First, I want to teach you how share prices are read."*
>
> Mrs Nanga: *"Mr Mkhulise, what are these newspapers for because it has numbers only not news."*
>
> Mr Mkhulise: *"This part of the newspaper shows the name of companies listed in JSE with their share prices next to their names. Right, who can tell us how much is the Clicks share price? Remember, the share price will differ from all the newspapers because they were bought from different days and weeks."*
>
> Khanya: *"It's twenty thousand.*"
>
> Mr Mkhulise: "*No, it's not twenty thousand, it's twenty cents, which means that even with R100, you may start buying shares, you don't need to have thousands of Rands for example."*

| |
|---|
| ABC company Ltd owns R2 million authorised shares @ R10 each, it means it owns 200 000 shares (R2m /R10). So if you want to buy 1000 shares @ R10 each, your investment is 1000 x R10 = R10 000.<br><br>Therefore, ABC Ltd would write its share price as 10,000 which means its R10,00 not ten thousand |

***Figure 5.5: Question written on blackboard (Source: DoE, 2011)***

Figure 5.5 and the co-researchers' responses indicate clearly Mr Mkhulise's intentions of teaching team members how to practically trade shares in the real-life situations. This is evident to his first question, *"…who have bought shares from any company before…"* of which none of the members have responded. This gave him an indication that he had to start from scratch, which is the reason why he started by teaching them how to read share prices. Mr Mkhulise might have started on how to read shares because of experience, since it might

be the reason why people do not trade in shares. It might be because people perceive prices as being always high. This is evident from Khanya's response of *"...twenty thousand..."* to the question "*how much is the Clicks share price?"* This shows that after they have been exposed to the "hidden treasures", students through REAL are equipped with the knowledge, skills and values that are significant for self-fulfilment, and meaningful participation in the society as citizens of a free country. This is evident from Mr Mkhulise's response that, "*…you don't have to have thousands of Rands…",* which might be the hindrances for the team members to start live share trading. The following excepts help illustrate this point:

> Mr Mkhulise: *"What's important is that, before you trade, you must do a thorough market analysis using both technical and fundamental analysis before you execute the trade."*
>
> Mr Mcimeli: *"Wow! This is amazing."*

Before he finished, Mr Mkhulise showed the team free platform and portfolios (trading accounts), where people can trade with different companies. Hence,

> Mr Mkhulise: *"Firstly, you will have to have either a trading account, demo if you are still practising then live trading account when you feel that you are ready to start."*
>
> Miss Nkosi: *"How do you open a trading account Mr Mkhulise?*"
>
> Mr Mkhulise: *"I will take you through once we done with theory part my colleagues."*

Figures 5.6 and 5.7 are the free trading platform used by Standard Bank, Easyequities, and the portfolio where Mr Mkhulise had bought shares from different companies.

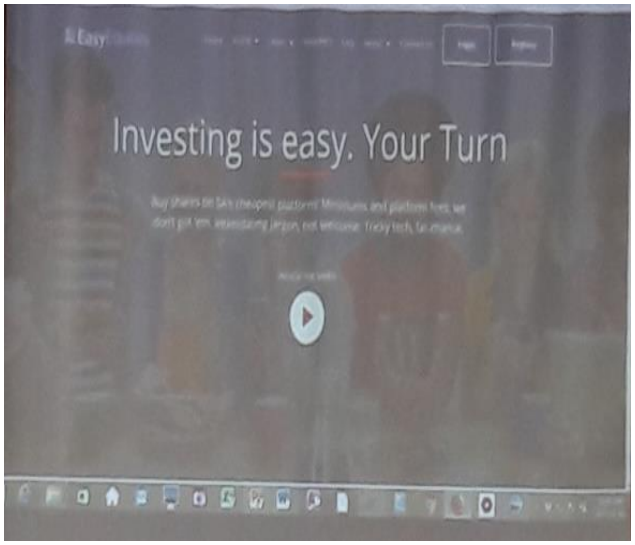



***Figure 5.6: Platform – Easyequities (Source: Easyequities, n.d.)***


***Figure 5.7: Portfolio (Source: Esyequities, n.d.)***

The data indicates that the participant really intended to ensure that there is infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. The phrases "…*must do a thorough market analysis…"* and "*before you execute the trade…"* are evident that REAL use activities that are generative and authentic in nature to ensure that the higher-order thinking process of learners is stimulated and heightened. That is why before they execute trades, learners should do a thorough market analysis, using dynamic and interdisciplinary factors like PESTLE analysis, which includes almost all macro environment factors that need to be considered and thoroughly analysed. By

so doing, learners' skills, knowledge and values are stimulated and allow learners the opportune for self-fulfilment and meaningful participation as productive citizens of a free country in their lived realities.

Furthermore, the platform and portfolio in Figures 5.6 and 5.7 enhance learners' knowledge on live share trading lived realities and heighten their participation growth in entrepreneurial skills, guiding them to make informed and responsible decisions. The phrases "…wow*! This is amazing…"* indicates that even the participant himself as the educational specialist of business studies, was happy and amazed to realise that REAL increase the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. REAL therefore empower learners' thinking and participation and also decolonise education systems as advocated by PAR, as it allows learners to practically do live share trading, thus infusing theory and practice (see 4.4.1). In addition, using the political bricoleur's lenses, REAL create a more democratic and new forms of knowledge production by disrupting the broader social structures of education, which is structured to produce redundant learners with skills and knowledge. Taking the political bricoleur's stance, the study ensures that using REAL produce learnners with entrepreneurial skills on live share trading using ICT, which automatically would dissolve the imbalances and inequitable social conditions and develop an awareness of power to all co-researchers, particularly learners (see 2.3.2).

### 5.3.4 Dynamic and practical assessment

CAPS define assessment as a continuous, planned process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment (DoE, 2011). As a result, when students are actively involved in assessment they are well placed to recognise moments of important personal learning and, as they develop their assessment capabilities, they find learning to be real and relevant, proving that they can learn and make progress, and discover how to make where-to-next decisions (Earl, 2012). As discussed (see 5.2.3), assessments in REAL enhance learners' growth in participation, responsibility, decision-making and intentional learning. Furthermore, activities that are used in REAL stimulate and heighten higher-order thinking processes and help learners develop rich and complex knowledge structures when assessed progressively in content (Aparicio *et al.*, 2016; Robinson *et al.*, 2015).

The team decided to use various strategies and methods of assessments to ensure the utilisation of multiple authentic assessments of learners and to ensure the mingling of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live trading using ICT. Therefore, learners were given three realistic assessments, which involved market data analysis, simulation of demo accounts and presentation of their trading account, which represents their businesses. The simulation and presentation were done using charts and other ICT related tools to ensure that it was practical, dynamic and realistic. After the collaborative teaching by the co-researchers using REAL, the team decided to give learners the following assessments:

**Instructions:** Read the following information in the table beforehand to familiarise yourself with share live trading. This information will teach you what and how to read codes in the trading market:

Here is a sample line from a stock market table for the stock of Giraffe's Electric:

| *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* |
|---|---|---|---|---|---|---|
| | | *Sales* | | | | |
| *Ticker* | *Company Name* | *100s* | *Hi* | *Low* | *Last* | *Change* |
| *GE* | *General Electric Co* | *6567* | *26.86* | *24.64* | *25.73* | *-2.40* |

***Figure 5.8: Sample line*** **(Source: www.moneyinstructor.com)**

| ***NO*** | ***DISCRIPTION*** |
|---|---|
| 1 | This is the company stock symbol, and it represents the company's stock. Often, the stock symbol is similar to the company's name. |
| 2 Company name | This is the name of the stock. |
| 3 Sales 100s | The number of shares that traded the last day this stock traded. The number is given in hundreds, so you need to add 2 zeros to the number to get the actual number of shares traded. |
| 4 Hi | The stock's highest price the last day this stock traded. |
| 5 Low | The stock's lowest price the last day this stock traded. |

| | |
|---|---|
| 6 Last | The stock's last traded price. Also sometimes called closing price. |
| 7 Change | The amount of change of the stock's closing price and the prior trading day's closing price (2 trading days ago). A "-" represents a negative change. |

1. **Use the following information of different stores on share trading and answer the questions that follow.**

**FOOD PRODUCERS**

| NAME | Close | High | Low | DM | YM% | DY | PE | DV |
|---|---|---|---|---|---|---|---|---|
| Illovo | 1 915 | 1 945 | 1 900 | +15 | 14,9 | 3,8 | 12,7 | 124 075 |
| Oceana | 1 650 | 1 670 | 1 650 | -20 | 10,7 | 4,5 | 14,6 | 4 700 |
| Rainbow | 1 660 | 1 660 | 1 650 | +3 68,5 | 3,6 | 11,0 | 738 | 672 |
| TigerBrands | 18 250 | 18 507 | 18 000 | -25 | 3,2 | 3,3 | 15,1 | 416 285 |
| Tongaat | 12 850 | 13 200 | 12 750 | +50 | 33,1 | 4,3 | 19,3 | 161 123 |

**[Source: Business Report, Tuesday 10 April 2007]**

**Close: Market close; High: Day's high; Low: Day's low; DM: Daily move; YM%: Last 12 months' percentage move; DY: Dividend yield; PE: Price-earnings ratio; DV: Day's volume**

**(Source: Gauteng Department of Education, 2013).**

1. Which government institution issues the information in newspapers? (2)
2. Explain TWO roles of the institution mentioned in QUESTION 1. (4)
3. Explain what could be the cause of price change on Tiger Brands' shares on10 April 2007. (2)
4. What was the price of Illovo shares at the end of the market day? (2)

5. How does regular information, as given in the table above, assist you in deciding which shares to buy? Substantiate your answer. (4)

[14]

**2. Simulation: The instructions on how you do simulation will unfold as you read through the following.**

- Each group is given R100 000 (paper money) on their demo accounts. From this capital, each group must spend at least 3% of the given capital on stocks (including commissions) per day. The reason is that learners should know how to minimise risks (risk management) when trading.
- Group must trade different shares.
- 0.02 % spread sheetis charged for each trade executed. A commission (spread sheet) is the cost that is paid to the broker that one uses when trading, for example, IG markets is the broker that people use to trade the Contract for Difference (CFDs) when trading South African shares or Easyequities used to trade shares.
- Groups should possess a journal with the history of all thetrading executed. In addition, groups are responsible for keeping track of their current portfolio's market value (plus the cash in the checking account).
- The time line for the activity isfive days.
- On day five, learners should report back to the team whether their portfolio's value has decreased or increased and what could be the reasons if either of the two happened.

**3. Presentation**

**Instructions:**

1. Each group should report to the class using their graphic demo trading account (portfolio) about:
    - The price of shares and stocks and how the portfolio performed.
    - News that relates to the traded stock.
    - Economic trends occurred on the stock market on the portfolio.
    - Any link between the news and the stock or portfolio.
2. Each group is allocated eight minutes for the presentation.
3. Things to remember:

- Fill in the worksheet to track trading prices.
- Groups should do daily reporting.
- Daily stock and share prices and portfolio performance and
- Records on the journal and weekly performance sheets should be created.

This assessment generally indicates that learners were given realistic and authentic assessments that involve both theory and practice. The various forms of assessment are continuous, and have a planned identifying process which allows learners to gather and interpret their performance in BOCS, the entrepreneurial skills on live share trading using ICT (DoE, 2011). This assessment allows learners to be actively involved as learners are required to first familiarise themselves with the live share trading language used in practice, followed by a thorough market analysis, which includes the fundamentals of economic, political and social news and technical analysis (candle sticks, stochastic, MACD, etc.) to predict whether to buy or sell. In addition, simulation and presentation of assessment is also used where leaners were required to do both a written weekly journal and to practically trade their demo accounts (simulation), which they would present after five days (presentation). CAPS document states that where there are resources available, electronic presentation may be used and where there are no resources, posters should be encouraged.

After learners were done with instruction numbers (familiarising themselves with trading language), they moved to simulation, where they were choosing businesses where they would buy stocks, tracking their activities, transaction history of all their buys and sells, keeping track of the current portfolio's market value, and etcetera. Mr Mkhulise and other teachers were always scaffolding between and among all groups. On the last day (the fifth day), presentations of the portfolios took place. One could see and sense that it was a different and happy day for learners, since it was the first time they were practically involved in their assessment. Figure 5.9 is evidence of pictures that were captured during the assessment process of what transpired when presentations took place.

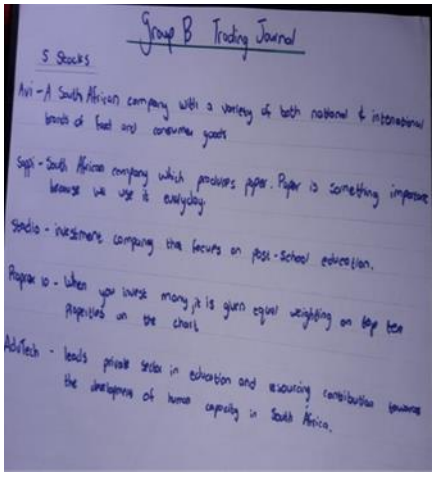



***Figure 5.9: Trading Journal (Source: Author)***

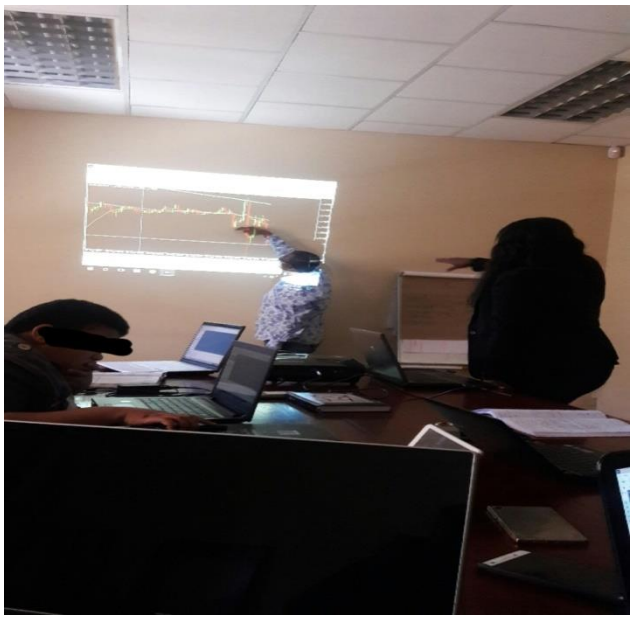


***Figure 5.10: Group presentations (Source: Author)***

This evidence indicates that the assessment kept learners active and authentic as they merged theory and practice, which occurs in a real-life situation. This is because the team set up complex, defined and authentic tasks, which emanate from real-life contexts that assign roles for learners to find the solution of these problems, individually or in groups. The assessment kept learners abreast as they were required to practically analyse the market before selecting the business to trade in, observe their peers, reflect what they do, and practice apprenticeship. The assessment developed learners' habits, beliefs, identities, and skills that are shared by the community, and in this case, all co-researchers, through interaction. From Figures 5.9 and

5.10, it is evident that learners compared and contrasted their views on specific problems, and selected the best one based on the group discussions or further refined their views. This assessment motivated and encouraged learners as they found learning to be real and relevant, proving to themselves that they can learn and make progress, as well as discover how to make where-to-decisions (Earl, 2012) on whether to execute trades or not. Therefore, this assessment is realistic, dynamic and practical as it ensure that learners' real-world knowledge and skills (Elliot, 2008) are involved and personalised through the execution of trades after a thorough personal market analysis that informs learners' decision on whether to trade or not. The following excerpt help illustrate this point further:

> Mr Mkhulise: "*Okay, tell us, based on what have you selected them? Remember you are presenting your business (trading account) to us; therefore ensure that we are convinced to buy-in into your proposal."*
>
> Learner C: "*We chose AdvTech class, because of its services, education provision and its reason of increasing human capacity…after a day of purchasing shares, its share price increased, as it announced that they are going to build a private university in SA."*

The phrase "*…based on what have you selected the businesses…"* indicates the intensity in which the team wanted leaners to fully comprehend the entrepreneurial skills, the live share trading using ICT. The team wanted learners to take learners through by *"presenting your business"* so that we may have an assurance and be "c*onvinced"* that learners may now infuse the theory and practice on investment in stock, the live share trading using ICT. This indicates that the team aimed at producing critical business thinkers with adequate cognitive skills and competencies that could confidently do live share trading using ICT. The team wanted to promote self-help and personal growth of learners to develop the inner knowledge and wisdom required. Hence, teachers should give learners realistic and authentic assessments to ensure that they acquire the technical, cognitive and non-cognitive skills that the youths need in further schooling and later in "lived realities".

According to Muskin (2012), non-cognitive skills also referred to as soft skills, core competencies and employability skills, are aptitudes and attitudes that learners summon to use technical and cognitive knowledge effectively. The team agreed that non-cognitive skills would help learners build their confidence, communication and problem-solving skills, teamwork planning and perseverance, which are the greatest determinants of the learners' progressive future integration into the workplace and society (Muskin, 2012). For example,

learners' decision to *"…chose AdvTech…"* is evident that they managed to use their non-cognitive skills when they narrated that it was *"…because of its services…"* and that the AdvTech share price increased just after the announcement that they are going to build a private university the following year. It is evident that through assessment, the core and crux of business skills required for learners were instilled, which brought change, hope and social justice for learners as promulgated in PAR (see 4.4.5) and to them as individuals, and in their community, as well as the country at large. It is believed that through live trading, there would be empowerment, a free democratic society, and social justice that would bring radical change to the lives of learners as advocated by bricolage (see 2.2.7).

### 5.3.5 Promoting continuous and professional teacher development

As discussed (see 5.2.5), PD engages and establishes teachers' knowledge, skills and attitudes, aiming at creating, preserving, evaluating and transmitting knowledge through continuous learning. CPTD requires that teachers be advanced with the quality knowledge, rich skills and professionalism (Macheng, 2016; Nzarirwehi & Atuhumuze, 2019). Furthermore, the EEA requires teachers to utilise all opportunities to acquire further and new skills, new knowledge and expertise in, not only one subject, but more particularly to be familiar with fresh and further educational thinking, administration, management, vocational and/or technical areas (Tsotetsi, 2013; ELRC, 2003) (see 3.2.5). The EEA further states that teachers should have a desire to acquire new knowledge and additional skills if they are to make the departmental policy succeed and use all opportunities to become familiar with fresh and further thinking in a number of educational areas (ELRC, 2003).

It should be noted that the team agreed that as the strategies were unfolding, part of their continuous professional development took place. On this section, the team agreed that Mr Mkhulise would train the team only on what was left to be known by the whole team. Adding on dynamic and authentic assessment, Mr Mkhulise retrained learners on both technical, especially candle sticks, and fundamental analysis, as well as the global news, which includes economic news. Figure 5.11 shows Mr Mkhulise training the team.

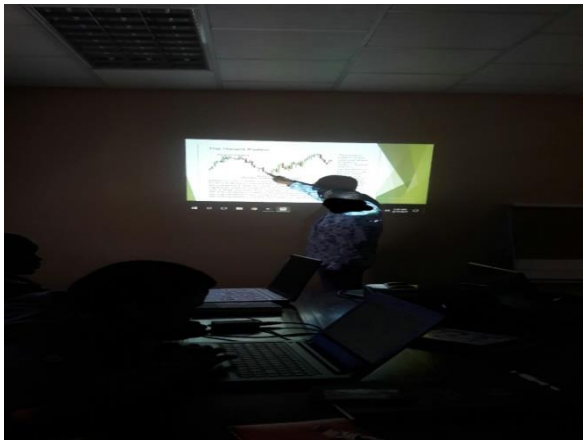
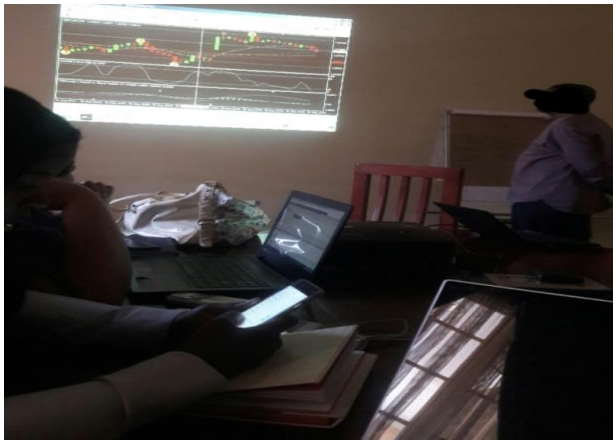



***Figure 5.11: Picture A: Theory and Picture B: Practice (Source Author)***

This data indicates that the team engaged and established teachers' knowledge, skills and attitudes together, aiming at creating, preserving, evaluating and transmitting knowledge through continuing learning, trying to infuse theory and practice. Picture A depicts candle sticks as one the technical analyses that the facilitator taught to the team. It was for the first time to most of us to be explicitly advanced with the quality knowledge, rich skills and professionalism. Picture B demonstrates where the team was practically taught and shown the pedagogical content knowledge on how to trade shares using ICT. As required by EEA, teachers utilised all opportunities to acquire further and new skills, new knowledge and expertise in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. It is further evident from Figure 5.11 that teachers did not only receive training to develop skills and teaching strategies, but they also received technical skills (instructional design skills) to enable them to integrate ICT to teach BOCS, the entrepreneurial skills on live share trading. This is further supported by the following responses:

> *"Before you place an order (whether buying or selling), ensure that you thoroughly analyse both fundamentals and technical analyses, they are so important, like price action analysis (candle sticks)"* (Mr Mkhulise, pointing on the slide).

> *"Most importantly, fundamentals calls for teachers to integrate BOCS with content knowledge of other subjects like economics, etc. to better understand live share trading"* (Mr Mcimeli).

During the discussion, the facilitator pointed out that there are twelve major candlesticks which are mostly used by all traders in the market, but mostly preferred by the Japanese as

they consider it giving the "nakedness of the market". Hence, the Japanese study the performance of the market by explicitly analysing these twelve candlesticks (see picture A) before they place an order.

Furthermore, as the economics teacher, the researcher was requested to explain the economic indicators as *"…fundamentals…"* that normally have an impact on share prices. The researcher then explained the content knowledge of economics, which had to do with the increase and decrease of inflation, Gross Domestic Product (GDP), Consumer Price Index (CPI), employment, unemployment, and many more. This was done to instil the importance of mingling together the relationship subjects have in the teaching of BOCS, the live share trading (business studies), economics and other subjects, as shown in the lesson plan (see 5.3.2).The following excerpt helps illustrate this point further:

> Miss Nkosi: *"How do we minimise the risks of losing out our monies Mr Mkhulise?".*
>
> Mr Mkhulise: *"Before executing the trade, you must analyse properly. Do not entertain the spirit of young lion that end-up being unable to catch even one buck because of its greediness."*
>
> Mrs Nanga: *"What does that mean Mr Mkhulise?"*
>
> Mr Mkhulise: *"Be focused! Act like a big lion that analyse every situation before it strikes a buck."*
>
> Mrs Nondoyi: *"Which means you must first do a comprehensive market analysis to minimise the risks of losing before you execute the trade."*
>
> Mr Mkhulise: *"Act like the CEO of his or her business who always thinks critically when making the strategic decisions for the business."*

This data generally suggests that before people execute trade, they have to be extra vigilant of other factors (fundamentals and technical) that are taking place around the macro environment. This means that they must not *"…entertain the spirit of young lion..."* (Mr Mkhulise)*"…to minimise the risks of losing* …" (Miss Nkosi) their money. The "…*big lion…"* (Mr Mkhulise) signifies an intellectual being that makes decisions consciously before acting, which is the reason why team members should *"…act like the CEO…"*(Mr Mkhulise) who generally strives to minimise the risks in order to maximise profits of their businesses. Likewise, team members were awakened in ensuring that they should do a thorough market analysis before executing the trades to minimise the risk of losing instead of maximising

profits on their trading accounts. Therefore, the team, especially, teachers should adopt the business style of minimising the risks utilising the opportunities like these to obtain further and new skills, knowledge and expertise to teach BOCS, the entrepreneurial skills using ICT. This teaches them further in educational thinking, which guides them on how to teach learners to administer and manage their trading accounts to maximise their profits. This concurs with the epistemological stance of bricolage, which ensures that the insights gained and the knowledge produced move all the co-researchers to the new levels of epistemological and ontological awareness. For example, in the current study, the truthfulness of knowledge and skills depends on its usefulness where teachers would be able to impart it to learners and where learners would be able to practically do live share trading using ICT while they still at school or exiting the school.

Moreover, the knowledge and skills gained should advance the agenda of equity when it comes to the education systems from different countries, social justice that would equate and bring radical economic change, freedom, peace and hope to all, especially, learners (see 2.5). In addition, the knowledge and skills gained from the CPTD would develop, build and transform the community's social justice with freedom and participation, equality and equity, which is advocated by PAR and the focal intention of the current study (see 4.4). The knowledge, skills and values acquired during the professional development workshops indicated social justice, liberation, emancipation and democracy experienced by teachers and other stakeholders. There is a high possibility of peace, as all stakeholders were treated with dignity and were equally empowered without discrimination before, during and after the workshop. There was peace and harmony among stakeholders knowing that there would be on-going professional development workshops that would continually develop and upgrade them.

## 5.4 CONDITIONS CONDUCIVE TO THE SUCCESSFUL IMPLEMENTATION OF THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION COMMUNICATION AND TECHNOLOGY

The following section addresses the conditions proposed by the team for the successful implementation of the solutions or components discussed above for the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. It is significant to determine conditions that are conducive for the purpose of sustaining the solutions, even after

the conclusion of the study is reached. The following conditions would be discussed: conditions conducive for the inter-sectoral and coordinated team; conditions that are conducive for a shared vision; and conditions that support the use of REAL.

### 5.4.1 Conditions conducive for the inter-sectoral and coordinated team

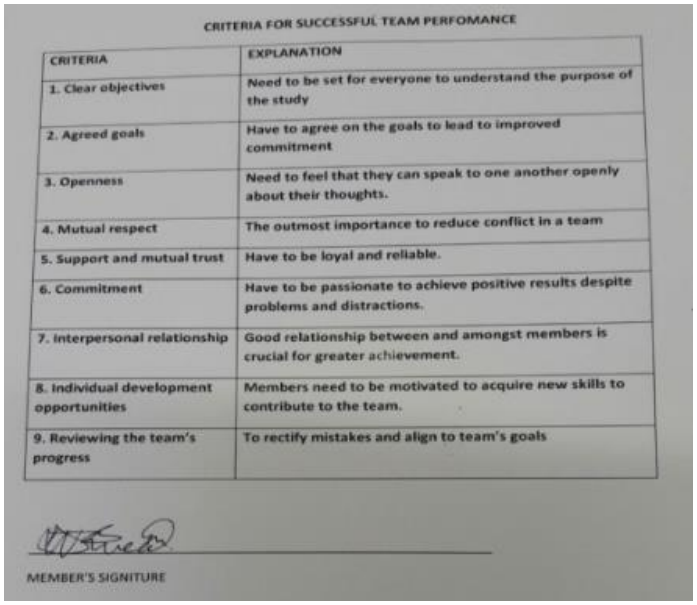
As discussed above, the inter-sectorial and coordinated team consists of the diverse, dispersed, digital, and dynamic (4-D) members, emanating from different backgrounds (Haas & Mortensen, 2016). These 4-D team members should have a strong structure of high-performing members with balanced skills, knowledge, experiences and values with diverse ages, gender and race that would enable them to optimally design tasks and processes and norms that promote positive dynamics, in this case, the infusion of theory and practice on live share trading using ICT. Although team members are not compelled to possess superlative technical and social skills, a healthy dose of both would allow for creativity and avoid group-think. In essence, this promotes mutual respect and commitment, which compels an inter-sectoral and coordinated team to plan everything collaboratively aiming to the accomplishment of a set goal.

The above-mentioned conditions became evident and seemed to be conducive to support a dedicated team when the LED manager shared the following:

> *"The success of this team lies on us mutually respect each other, irrespective of our jobs, qualifications and background equal responsibilities"*(Miss Nkosi).

This response suggests that all team members should have mutual respect for each other at all times. Miss Nkosi seems to be ready to take off with the designing of the strategy. She urges her team mates to be respectful and ensure that any differences in terms of their jobs, qualifications and background should be put aside and that they should treat each other equally. Therefore, it necessitates team members to work in harmony and to have the willingness of committing themselves so they can achieve the set goals.

Furthermore, the visibility of the condition that is conducive was evident when all team members agreed and signed the norms shown in Figure 5.12 in one of the meetings.



CRITERIA FOR SUCCESSFUL TEAM PERFOMANCE

| CRITERIA | EXPLANATION |
|---|---|
| 1. Clear objectives | Need to be set for everyone to understand the purpose of the study |
| 2. Agreed goals | Have to agree on the goals to lead to improved commitment |
| 3. Openness | Need to feel that they can speak to one another openly about their thoughts. |
| 4. Mutual respect | The outmost importance to reduce conflict in a team |
| 5. Support and mutual trust | Have to be loyal and reliable. |
| 6. Commitment | Have to be passionate to achieve positive results despite problems and distractions. |
| 7. Interpersonal relationship | Good relationship between and amongst members is crucial for greater achievement. |
| 8. Individual development opportunities | Members need to be motivated to acquire new skills to contribute to the team. |
| 9. Reviewing the team's progress | To rectify mistakes and align to team's goals |

MEMBER'S SIGNITURE

***Figure 5.12: Team norms and standards (Source: DoE, 2011)***

From these essential norms to be practised, it is clear that the success and the achievement of the team's goals lies on them practising what they have drafted together. This suggests that each team member should commit himself or herself in ensuring that the team's goals and objectives are achieved. One participant shared the following;

> *"True, we need to commit and treat ourselves equally"*(Mr Mcimeli).

Commitment means the responsibility that is taken by an individual and/or group of members to always do something at any time as per agreement. Therefore, the phrase "*…need to commit…"* suggests that all members have to commit themselves by always availing themselves in, for example, providing their skills, knowledge and experience as and when required by the team. In addition, members should also avail themselves willingly for meetings, supplying their resource if needs arise, and etcetera, in order to reach the team's agreed goals.

This suggests that team members would be allowed to air their views without prejudice and pressure from the members of the team. This enhances social justice, unity, freedom and democracy among and between team members, which acknowledge the objectives of PAR (see 4.4) used in the current study. Furthermore, this creates psychological and emotional unity among the researcher and co-researchers that is built on trust, humility and mutual respect, achieved through openness in communication (Qhosola, 2016; see 2.8).

### 5.4.2 Conditions conducive to a shared vision (team members' mutual purpose and shared values and understanding)

Another condition for an effective team is a shared mind-set (Haas & Mortensen, 2016), which fosters common identity and common understanding among team members. The diverse, dispersed, digital and dynamic (4-D) teams may accomplish high performance from the compelling direction that energises, familiarises and engages its members. In the current study with team members emanating from diverse, dispersed, digital and dynamic backgrounds, it is crucial that they should have a compelling direction. One participant shared the following:

> *"Students can only be able to practically do live share trading if we put more effort…" we have a compelling direction of infusing theory and practice"*(Miss Nkehli).

Therefore, it seems that team members are prepared to do whatever they are required to do for the success of the project. The participant is pleading with other members to have a common identity and common understanding that would make them put in more effort for the benefit of them all, especially that of learners. Another participant shared the following:

> *"We must strive for high performance which will lead to the success of the current study, our goal"* (Mr Mcimeli).

This suggests that team members should have a compelling direction to ensure that the project is successful. A condition that is conducive for the desired and intended goal shared among team members was realised through a frank and yet vigorous discussion. This suggests that team members would be allowed to air their views without prejudice and pressure from the members of the team. This improves social justice, unison, freedom and democracy among team members, which concurs with the objectives of PAR (see 4.4) used in the current study. Furthermore, as Qhosola (2016) asserts, trust, humility and mutual respect is acquired through open communication which produces and conveys psychological and emotional unity among the researcher and co-researchers (see 2.8).

### 5.4.3 Conditions that support the effective use of REAL

Another condition that enables team effectiveness is having the supportive context, where good performance is reinforced through by a reward system, accessible information system that provides work related data, for example, funding and technological assistance. This is the

right supportive context, which is an environment that allows learners to apply whatever they have learned in classroom to the "lived realities". Thus, the supportive environment helps to promote a deep learning approach that occurs through interaction, problem-solving, dialogue, cooperation and collaboration (Dhurup *et al.*, 2016). This is supported by the following interaction that occurred in the meeting between members:

> Khanya: *"How are we going to support each other once we have started with live trading?"*
>
> Mr Mcimeli*: "Technology, through WhatsApp group, Facebook page, emails will be used."*
>
> Mr Mkhulise: *"For trading accounts, we will use TeamViewer and for practical part, the team is allowed to use my venue as it has all the resources required."*

This excerpt suggests that the team members have realised that it is through the supportive context with all the technological resources relevant that REAL can be used. The team members are going to "…*support each other…"* through technology as the cornerstone of REAL. This means that even if members are require to meet, but cannot due to their dynamic, diverse, digital and backgrounds, which may include terms of work, time constrains, and other complexities, "…*technology…"* can be used to bridge the gap. Therefore, REAL can be used in teaching and learning of BOCS, the entrepreneurial skills on live share trading on the condition that the context is technologically supported. Thus, media and ICT can be utilised as tools for empowering the marginalised or misrepresented students in the teaching of BOCS, the entrepreneurial skills on live share trading using ICT (see 2.2.8).

## 5.5 THREATS TO THE DESIGNING OF THE STRATEGY OF TEACHING BOCS USING ICT

The following section addresses the threats to the designing of the strategy of teaching BOCS using ICT as raised by the team. It is composed of threats towards teamwork, as well as teachers' resistance to change.

### 5.5.1 Teachers' resistance to change

Teachers are the primary engine in the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT. However, teachers resist change from using teacher-centred to REAL. This is because they are not ready and do not have enough time and confidence in teaching practical skills and knowledge content, especially that compels them to integrate ICT when teaching. This is caused by lack of expertise, skills and knowledge, as well as lack of autonomy, which is the reason why teachers develop negative attitudes which impedes learners' learning (Hennessy *et al.*, 2010). This is supported by the following excerpt:

> Mrs Ndondoyi: *"The fact is, time allocated for Bust periods is not enough."*
>
> Mr Mcimeli: *"Use gadgets in an automated way which becomes scheming and promotes teacher-centred method of teaching."*

This excerpt suggest that even if teachers may want to change, but the *"…the fact is…"* they cannot since *"…time allocated…"* for the teaching and learning of business studies, a vocational subject, do not allow for the infusion of both theory and practice. In addition, the use of ICT increases their workload as they have to prepare and teach using ICT, which is time-consuming for them. Moreover, they "*…use gadgets in an automated way…",* which impedes students from understanding BOCS content knowledge and acquiring entrepreneurial skills on live share trading using ICT. Furthermore, the teachers'practices are contradicting the general aims of the South African Curriculum, which states that learners should be equipped, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the skills, knowledge and values that are significant for self-fulfilment (CAPS, 2011). This would aid learners to participate constructively and productively in society as citizens of a free country. This practice further contradicts the objectives of PAR, which states that it empowers people, which in this case are learners who had been not empowered, but instead jeopardised (see 4.4.1). Furthermore, the teacher's practice do not contribute to the social transformation of learners' life as promulgated by bricolage; instead it hinders learners from acquiring skills and knowledge to apply to their real-life situations (see 2.7).

### 5.5.2 Lack of infrastructure and resources

Adequate infrastructure and resources enhance the teaching and learning environment of any subject to be effective. For example, local community institutions, people, business firms, education specialists and other government departments are rich reservoirs (Sithole, 2012) with instructional materials that can be utilised by teachers to infuse theory and practice. This means that teachers should realise the significance of the external stakeholders' infrastructure and as valuable sources in the teaching and learning environment. This would help both the learners' and teachers' experiment more with using such resources and would help them relate what they do in the classroom compared to the real world. Therefore, teachers should refrain from using textbooks only and should begin using the local materials, as they are available at minimal or no costs. This supported by the following excerpt:

> Miss Nkehli: *"Very difficult for us to teach practical as we do not have enough resources to do that."*
>
> Mr Mkhulise: *"That's a nationwide threat, but as the local professional trader with full resources that is required I can help you do that."*

This excerpt suggests a teacher who is willing to infuse theory and practical, but who is unable *as they "do not have enough resources…",* which impedes them from doing so. Furthermore, it is clear from the extracts that the difficulty experienced by teachers to infuse theory and practice emanates from them not knowing that they may solicit the rich reservoir from local businesses and other government departments. This is clear when Mr Mkhulise made the team recognised that, "…*that's a nationwide threat…"* which can be resolved by local communities as he *"…can help…"* with the required resources to ensure the infusion of theory and practice. This would help teachers and learners to experiment what is taught in classroom and the practices in the real world.

## 5.6 EVIDENCE OF APPLICABILITY OF THE STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION COMMUNICATION AND TECHNOLOGY

The previous sections in chapter 5 (all the objectives of the study) attempted to deal with the process of designing the strategy to teach BOCS, the entrepreneurial skills on live share trading using ICT. The following section discussed the indicators of the success on which the

emerging implementation strategy to teach business opportunities creation skills using ICT can be accomplished.

### 5.6.1 Scope of content knowledge for teaching

The scope of content knowledge that has increased in the classroom has enhanced active participation through the interaction, mingling and collaborative use of knowledge (facts, concepts) skills, experience by various stakeholders, application and infusion of theory and practice (Matoetoe, 2017). It is imperative that the scope of content knowledge of BOCS, the entrepreneurial skills, especially on investment on stock (the live share trading) should go beyond the school curriculum to ensure that the theory that is learnt in the classroom is infused with practice in the real-life situation. For example, in the current study, both teachers' and learners' knowledge were enlarged when they were introduced to the entrepreneurial skills on live share trading using ICT. The spirit and culture of entrepreneurialism as the common vision of the team (see 4.9.1) were instilled to both teachers and learners. This is supported by the following excerpt:

> *"So interesting to know that we are going start to have our own live account and become shareholders of big companies while we are still at school"* (Khanya).

> "*Oh my God! What an eye-opener. It is true when they say knowledge is power"* (Mrs Nondoyi).

It should be noted that Mrs Nondoyi was the older and experienced teacher with 27 years of teaching experience who presented the theory part of share trading as they are from the textbook (see 5.2.1), and thus demonstrating lack of knowledge on practical share trading. However, through the workshops meetings, observations and interviews as *"...an eye-opener..."* we had during the study, it is evident that "…knowledge is power…" when both teachers and learners were able to open and "…*have our own demo account..."* which would lead them to live accounts and enabling them to "…*become shareholders of big companies while we are still at school."* Therefore, it is evident that through the intermingling and collaborative of the 4-D inter-sectoral and coordinated team's skills, knowledge, experience and expertise, the principle of knowledge literacy is adhered to. This is because, taking from the extracts above, learners' knowledge and skills were enlarged as they demonstrate that from what they have learned in class about investment on stocks can easily be applied in their

real-life situations, through the opening of demo and/or live trading accounts. This ensures that learners with skills, knowledge, and values that are significant for self-fulfilment are productive co-researchers in society as democratic citizens of a free country.

### 5.6.2 Trading skills

Through the study, teachers and learners knew and understood what needed to be done before trades were executed, how a share price is read, which were one of the hindrances to them, as they thought it was very expensive to trade, especially to buy shares. In addition, both teachers and learners, through the course of the study, now know what is practically occurring in the trading markets by critically analysing them using the PESTLE environment. These skills helped them take critical decisions on when to execute trades. This is evident from the comments made by one of the learners during our meeting:

> *"I am happy because I will now save my pocket money so I can buy shares, I thought, lots of thousands were needed"* (Nakarum).

The remark that *"...I thought, lots of thousands were needed*…" shows that through the study, learners have gained reading, critical and market analysis skills and knowledge, utilising the PESTLE analysis, which directly affect trading markets through the share price. In addition, learners'spirit and culture of entrepreneurialism is enhanced, which means that through the study, they become "young savers" and "young investors" as they are happy and intend to save their pocket money. In the society we leave in, children indulge themselves in drugs and other social ills, using the same pocket money of which, through the study, learners would intend to utilise it productively. This might be a good influence to other learners as well, which may automatically change the status quo of the children's behaviour in general.

In addition, through the space of the study, learners were able to critically analyse the case study in Figure 5.13.

**Local and international banks have been accused of rigging the price of South Africa's currency, the rand, by the country's competition watchdog.**

On the 15th February 2017 when the local (ABSA, Standard Bank of South Africa) and international banks (Barclays, JP Morgan, HSBC, amongst others) have rigged the price of

the South Africa's currency, the rand. These bank practices of collusion and price-fixing on FOREX markets goes back as far as 2007. This practice by the banks contradicts the Competition Commission Act of South Africa which states that…

***Figure 5.13: Case study (Source: BBC News, 2017)***

We then asked students to critically analyse the political, economic, social, technological, legal, and environmental (PESTLE) impact these malpractices by banks in South Africa. Moreover, we also asked them to analyse the reaction of markets after this was disclosed. Learners managed to explicitly analyse it, which is evident that through the study they managed to grab the skills required for the infusion and implementation of theory and practice on live share trading using ICT.Through the study, learners are equipped with live share trading skills and knowledge that is imperative for self-fulfilment and meaningful participation in the JSE as citizens of a free country (CAPS, 2012).

### 5.6.3 Technological content knowledge

Technological content knowledge is described as the competence of teachers to integrate technology and trading content in pursuance of making meaning of the content (Mosia, 2016) to infuse theory and practice. Thus, in the context of this study, laptops, data projectors, Easyequities and TeamViewer are integrated with BOCS, the live share trading content, in an attempt to infuse theory and practice where learners are able to open their own demo and/or live trading accounts in real-life situations. After a workshop the team had on how to use laptops and/or desktops, data projectors, software, such as Easyequities and TeamViewer, learners in particular were able to use these ICT resources for presentations (see 5.3.4), which form part of the assessment and for opening of their demo accounts. This is evident that the study created the platform, which enabled learners and teachers to integrate ICT in the teaching and learning of BOCS, the entrepreneurial skills on live share trading.

## 5.7 CHAPTER SUMMARY

This chapter discussed the presentation and analysis of findings, interpretation and discussion of findings towards the designing of the strategy to teach BOCS using ICT. The need to

formulate the real-life situation strategy in teaching BOCS using ICT and the need for continuous and professional teacher development were presented, interpreted and discussed Further, the components for the use of the strategy to teach business opportunities creation skills and the conditions conducive to the successful implementation of the strategy to teach BOCS. Lastly, the threats to the designing of the strategy and evidence of applicability of the strategy to teach BOCS using ICT were presented, analysed, interpreted and discussed.

# CHAPTER 6
# FINDINGS, CONCLUSIONS AND IMPLICATIONS OF A STRATEGY OF TEACHING BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION, COMMUNICATION AND TECHNOLOGY

## 6.1 INTRODUCTION

This study aimed at designing a strategy that can foster the teaching of BOCS using ICT. This chapter summarises the study and the objectives of the study. Thereafter, it summarises the findings on the challenges that propelled the designing of a strategy of teaching BOCS using ICT. It then reports on the strategies that would be employed to eliminate the challenges, the conducive conditions that made them work and the threats that could hinder the successful implementation of the strategies in relation to the evidence underpinning the envisioned strategy of teaching BOCS using ICT. The chapter then draws conclusions and makes recommendations for the designing of a strategy that can enhance the teaching of BOCS using ICT.

## 6.2 BACKGROUND TO THE STUDY

This study aimed at designing a strategy of teaching business opportunities creation skills (BOCS) using Information and Communication Technologies (ICT). BOCS, in this study, emanates from the purposes of Grade 12 Business Studies and is referred to as business opportunities creation skills, knowledge and principles that require learners to acquire and apply skills to productively and profitably develop and manage businesses in real-world business environments (CAPS, 2012). These business skills can only be teachable in educational environments that enable learners to acquire entrepreneurial skills through the infusion of theory and practice to continually add to their existing body of knowledge using ICT (Jones, 2007). Furthermore, BOCS teaches learners how to seek new information, how to utilise it productively and profitably to evaluate its importance and how to solve novel, non-textbook and professional problems (Biggs, 2003).

Furthermore, the research team decided to use REAL to ensure that the knowledge and skills learnt from the classroom are infused with practice. REAL are comprehensive instructional

systems, which promote studying and investigation occurring within authentic contexts. REAL promote and enhance higher-order thinking processes to aid learners to develop rich and complex knowledge structures. This ensures that learners are assessed progressively in content and learning-to-learn, using realistic tasks and performances within authentic contexts (Aparicio *et al.*, 2016; Robinson *et al*., 2015). However, the need to design a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT, was motivated by the challenges detected in practice and those captured in literature. It was discovered that teachers, when teaching investment on securities, particularly share trading, hardly infuse theory and practice to ensure that learners are taught BOCS and knowledge relevant for the 4IR epoch. This meant that the skills and knowledge taught could not be practically implemented either locally or globally by learners in their real-life situations. In addition, literature and practices revealed that teachers teach problem-solving skills in an abstract form detached from practical application of knowledge, thus making transfer to real-world situations difficult (Steenekamp *et al.,* 2011).

This was caused by the little time teachers spent on building capabilities in group interpretation, negotiation of shared meaning, and co-construction of solutions to problems when teaching (Pearson, 2014). The insufficient time allotted for practical implementation of skills and knowledge is caused by the unrecognised challenge where teachers, policy makers, and local communities are failing to unlearn the belief, values, assumptions and cultures, which underlie schools' industrial-era operating practices, such as 45-minute class periods (Pearson, 2014). Additionally, ICT applications and representations are largely used by teachers to automate traditional methods of teaching and learning, rather than to model complexity and express the insights to others. The co-researchers were thus more than pleased to form part of the study aiming at ensuring the mingling of theory and practice in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. We then identified other external stakeholders who could help in devising solutions to address the challenges by collaboratively sharing their views, skills and experiences (see 4.6.4).

Bricolage, a theoretical framework and an approach that was first introduced by Levi-Strauss in 1966, is the art of creating new things using what is at hand and it was utilised to couch the study (Mahlomaholo, 2013a; 2013b; Aagard, 2009; Scribner, 2005). Bricolage enabled the researcher to allow people at the local level to apply known tools and routines at hand to solve new problems (Ali & Bailur, 2007). Furthermore, the use of bricolage was significant for this study since it enabled people to discover the power they had in realising that the

solutions to the challenges they face could be determined locally (Mahlomaholo, 2013a; 2013b). As the interpretive bricoleur, the researcher was able to piece together a collection of empirical materials relevant to the study where "the product of the interpretive bricoleur's labour is a complex, quilt-like bricolage, a reflexive collage or montage - a set of fluid, interconnected images and representations" (Conway, 2008:26) of all the skills, knowledge, values and expertise of the inter-sectorial and coordinated team.

Operational concepts were sufficiently defined (see 2.3). Thereafter, literature was reviewed to determine how BOCS was taught using ICT to infuse theory and practice in South Africa, SADC, the African continent and globally. In order to obtain empirical data, the researcher employed PAR, which is a qualitative research technique that enabled the research team to work collaboratively co-researchers to achieve the objectives of the study. Therefore, the team utilised interviews, observations, workshops, meetings and group discussions to generate data for this study. The data generation and analysis processes took place simultaneously. The researcher chose to use Fairclough's critical discourse analysis (CDA) to analyse the discursive data. Fairclough divides the analysis into three interlinked levels: the level of text (description, linguistics), the level of discursive practice (interpretation, micro-sociology) and the level of social practice (explanation, macro-sociology) (Aghagolzadeh & Bahrami-Khorshid, 2009).

### 6.2.1 Research question

How to teach practical business opportunities creation skills, the live-share trading using ICT from a real-life situation?

### 6.2.2 The aim of the study

The aim of the study was to design a strategy of teaching business opportunities creation skills using ICT.

### 6.2.3 The objectives of the study

The study is grounded on five objectives, namely:

a) To analyse and understand the challenges in the designing of a real-life-situation strategy to teach 'business opportunities creation' skills using ICT;
b) To explore strategies in the real-life-situation strategy of teaching business opportunities creation skills using ICT;
c) To investigate the conditions under which a real-life-situation strategy of teaching business opportunities creation skills using ICT, could be successfully implemented;
d) To anticipate possible threats that may hinder successful implementation of a real-life-situation strategy of teaching business opportunities creation skills using ICT;
e) To identify the indicators of success and failure.

Thus, this chapter presents the findings and recommendations based on the designed strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT as articulated in Chapter 5.

## 6.3 FINDINGS AND RECOMMENDATIONS

### 6.3.1 The significance of an inter-sectorial and coordinating team

The researcher discovered that there was no inter-sectorial team dedicated to the coordination of the effectiveness of the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. Actually, there was no inter-sectorial team with various skills, knowledge, experience and expertise who could aid learners to master and practically apply the live-share trading in their real-life situations. Furthermore, empirical data showed that the lack of a collaborative team resulted in teachers using different teaching methods in spite of teaching the same class, subject and grade. The absence of a team rendered the infusion of both theory and practice to enhance the learners' entrepreneurial skills of the live trading of shares in the teaching of BOCS using ICT impracticable. However, the significance of a dedicated and collaborative team is also supported by Dhurup *et al.* (2016) and Matoetoe (2017), who posit that teams and teamwork help promote a deep learning approach that occurs through interaction, problem-solving, dialogue, cooperation and collaboration (see 2.2.1), which was contrary to the findings of this study.

#### *6.3.1.1 Recommended strategies for the designing of an inter-sectorial and coordinating team*

After numerous meetings had been held with different stakeholders regarding the study, it was recommended that an inter-sectorial and coordinating team be selected from different sectors of the government department and other community stakeholders with relevant and direct interest in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. The inter-sectorial and coordinated 4-D team was then formed, and it included external stakeholders who could provide the team with multiple and complex resources, skills, knowledge, principles, ideas and experience with an aim of designing a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT.

Therefore, the study recommends that an inter-sectorial and multi-disciplinary team, which comprises internal and external stakeholders, be utilised. This would allow teachers to help learners achieve quality results, which are infused with entrepreneurial skills and knowledge on live-share trading, which would allow learners to implement it to the world of work s required in the current 4IR epoch. The study recommends the establishment of the team as it will equip learners, irrespective of their diverse socio-economic backgrounds, race, gender, physical or intellectual ability, with the knowledge, skills, and values that are significant for self-fulfilment, thus allowing them to fully participate economically in society as citizens of a democratic country.

#### *6.3.1.2 Conditions conducive for the formation of the inter-sectorial and coordinating team*

This study recommends the formation of a 4-D inter-sectorial and coordinating team with a strong structure comprising high-performing members with balanced skills, knowledge, experiences and values as well as diverse ages, gender and race. This would enable them to optimally design tasks, processes and norms that promote positive dynamics, in this case, the infusion of theory and practice on live-share trading using ICT. Therefore, the study recommends the formation of a team with mutual respect, irrespective of their qualifications and political, economic, social and educational backgrounds, which means that every member should be treated equally.

Furthermore, for all the conditions to be considered conducive, the study recommends a team with a common vision bordering on the successful designing of a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT.

### 6.3.2 Lack of collaborative lesson planning for effective facilitation of the teaching of BOCS using ICT

It was discovered that Business Studies teachers were not utilising the DoE's lesson plan template, but their own that had many limitations that disadvantaged learners. Their lesson plan excluded lesson aims and objectives, which act as a roadmap that guides teachers, hardly provided the layout of the topic and sub-topics; neither did it consider learners' prior knowledge, hence it missed the concept of collaborative planning. Furthermore, the way the lesson plan was drafted did not explicitly show the development of the lesson from known to unknown concepts and from abstract to complex concepts, which would guide teachers on what students know about business venture, especially on investment in stock.

Furthermore, the lesson plan excluded teachers' and learners' activities and it minimised the resources to be used during the lesson presentation. This was seen to have a detrimental effect, as it would compromise the impartation of entrepreneurial skills and knowledge that learners had to acquire. Moreover, learners' assessment tools were not clearly written, which would result in teachers giving learners assessments that hardly infuse theory and practice. Consequently, these factors impeded learners' acquisition of entrepreneurial skills of live trading of shares in the teaching and learning of BOCS using ICT.

#### *6.3.2.1 Recommended strategies for the enhancement of collaborative lesson planning*

The empirical data showed that for teachers to collaboratively plan lessons, they must not isolate themselves and confine their teaching to school buildings. The study recommends that when planning, teachers should include an inter-sectorial team of internal and external stakeholders with specialised and diversified skills, knowledge, values and experience on a particular topic. This allows teachers to acquire, share and discuss multiple perspectives from a 4-D team with complex and multi-dimensional business skills and knowledge on BOCS, the entrepreneurial skills on live-share trading using ICT. The study recommends the adoption of collaborative lesson planning that integrates and shows the relationship between Business Studies and other disciplines, allowing students the opportunity to relate and acquire multi-

dimensional business skills, knowledge, principles and values for self-fulfilment and productive participation in a democratic society or country.

It is further recommended that collaborative lesson planning should have components, such as teachers' and learners' activities, resources related to the topic, as well as the timeframe within which the lesson should take place. More significantly, the study further recommends a collaborative lesson planning that explicitly shows learning objectives, specific aims, learners' prior knowledge, as well as expanded opportunities that would allow students to apply and implement the skills, knowledge and values acquired in classroom in their real-world situations. This ensures that the knowledge, skills and values taught at school perfectly align with the needs of the real world around the school territory as well as the national and global contexts.

#### *6.3.2.2 Recommended conditions conducive for collaborative planning*

Collaborative planning requires teachers with the DoE's permission to recognise and build connections within schools (where teachers work together) and with other related and relevant external stakeholders to ensure the infusion of theory and practice. The current study recommends that the conducive conditions, with regard to collaborative planning, can only be enhanced when external stakeholders, together with teachers and learners, build networks of information, contacts and resources that are required for the successful impartation of business skills, knowledge, principles and values to learners. This practice enables the education system to produce the human capital (learners) with relevant skills, competencies and knowledge that required for the 4IR epoch. Another conducive condition arises when team members use social networks like WhatsApp groups, Facebook page and emails to plan collaborative when they cannot meet personally, due to time constraints. Literature states that CLP, through online CoP, via internet where emails, chat rooms, discussion boards like WhatsApp groups and any other relevant social software, expands the width and depth of the lesson planning process (Xiaofeng *et al.*, 2015; McLoughlin & Lee, 2007).

#### *6.3.2.3 Threats and risks undermining collaborative planning*

Time, in the teaching and learning of BOCS, the live-share trading using ICT, is an indispensable teaching and learning resource. During data generation, teachers raised issues

regarding insufficient time allocated for Business Studies, as a vocational subject. They said that the time allocated for Business Studies did not allow them to do practical sessions, which is detrimental to the quality of results they produce. Therefore, teachers suggested that schools may develop a more flexible timetable that provides a "line day" (as it is called in MLC School in Sydney), which is a whole day set aside for practical lessons for every subject, for example, every second Tuesday of the month (see Section 3.3.2) to ensure that vocational subjects like Business Studies have ample time to infuse theory and practice. Furthermore, the Flexi-Friday (as it is called in Leosowes School, in the United Kingdom) timetable, which is every Friday, where one subject is learned and where theory is infused with practice, for example from 8:30 in the morning until 1:30 in the afternoon and beyond (see Section 3.3.2).

Therefore, to eliminate the outcry of Business Studies teachers on time constraints that curb the infusion of theory and practice, the study recommends that both of the discussed time-tabling strategies could be successfully implemented. Business Studies teachers, for example, could teach theory (types of shares, advantages, disadvantages and any other theoretical information) for four days and the practical component (the live trading of shares) could be done for the whole of 'line-day' and/or on Flexi-Friday where Business Studies is allocated. That is the time when the relevant external stakeholders could be invited to school to teach the practical part of investment in stock, live-share trading using ICT. Moreover, on the "line day" and/or "Flexi-Friday", Grade 12 Business Studies learners would do presentations of their demo and/or live trading accounts (portfolios), taking the audience (Grade 8-9 EMS and Grades 10-12 Business Studies learners) through all the processes (analysis of markets using PESTLE) that led them to execute trades (buying and selling) on certain businesses. The presentation to Grade 8-12 students is suggested because it is believed that BOCS, entrepreneurial spirit and culture should not be taught in Grade 12 only, but should be instilled in and imparted to learners at a young age. This would ensure that the South African education system produces a productive workforce (learners) with global competitive skills, knowledge, values and principles inclined to the 4IR epoch.

### 6.3.3 Need to adapt to Rich Environment and Active Learning using ICT

Empirical data showed that one Business Studies teacher presented content on the investment on securities (live share trading) exclusively from the textbook during lessons. The other one

used an data projector, which was used only to display the scanty notes and/or information. It was further discovered that on top of lacking adequate pedagogical knowledge, teachers largely used ICT to automate traditional methods, rather than to model complexity and insights (Care *et al.*, 2017; Aghaee & Keller, 2016; Okolocha & Nwadiani, 2015; Sithole, 2012; Tinio, 2003). Furthermore, teachers did not create a classroom atmosphere that encouraged the exchange of ideas between teachers and learners. This was evident when learners asked teachers continuous and uninterrupted questions learners that they could hardly answer. Therefore, teachers failed to teach using methods that jell theory and practice to stimulate and enhance learners' skills, knowledge, values and principles that are relevant to the 4IR.

From the above discussion, it is clear that teachers are failing to make use of REAL, which promotes the use of media and tools that stimulate learners' needs and interests with regard to live-share trading using ICT. Therefore, the teaching and learning of BOCS had been rendered abstract and incapable of allowing learners to apply the theoretical skills and knowledge in their real-life situations, a situation that eventually jeopardises their future.

#### *6.3.3.1 Strategies recommended to promote REAL*

The inter-sectorial and coordinating team agreed to practice team-teaching where both teachers had to teach theory and the professional trader had to teach the practical part of live-share trading. Due to the insufficient resources that were required for the practical part of live-share trading, the team then recommended that the professional trader's venue be used. This was chosen because it had all the required and necessary resources that enhanced the teaching and learning of BOCS, the entrepreneurial skills on live share trading. That was recommended because learners would acquire rich and important knowledge, skills, values and business principles suitable for the 4IR. This would allow learners the opportunity to attain self-fulfilment and be productive in a democratic country.

The team recommended that all team members should participate, if possible, in the practical part of the teaching of live-share trading using ICT. Therefore, Mr Mkhulise asked all team members to bring new or old newspapers on the day of practical teaching so they could be taught how to read share prices; a lack of such literacy is seen as the main reason why people do not trade. This strategy was used to stimulate awareness among team members on the notion that share trading is actually not expensive at all.

### 6.3.4 Use of static and standardised assessment

In this respect, this study discovered that the assessment tool used was disconnected from the legislative imperatives of, for example, SDA, NSDP and NDP in general and the DoE in particular. It was discovered that the assessment that was utilised was classroom-bound, examination-inclined and tests-orientated and abstracted in the learning of BOCS, the entrepreneurial skills on the live-share trading using ICT. The assessment was not continuous and did not afford learners the opportunity to engage in the planning process involving the identification, gathering and interpretation of information on market analysis, using various forms of assessment as prescribed. Furthermore, the assessment was ambiguous and hardly covered the significant business knowledge, skills and principles, as well as entrepreneurial initiatives, sustainable enterprises and economic growth (DBE, 2011).

The conclusion drawn from this finding relates to the possible disconnection of the assessment between the acquired classroom-based knowledge and skills and the required skills and knowledge important for the practical implementation in the real-life situation and the work environment. Correspondingly, the misalignment of the assessment could be because of the stifled trainings (assessment given by teachers to learners) received by Business Studies teachers, which were designed by the apartheid regime. This practice overlooked issues of equality, equity, human dignity, social justice and social transformation that made it difficult for learners to become productive and participative citizens in a democratic country.

#### *6.3.4.1 Use of dynamic and authentic assessment as recommended strategies*

The study therefore recommends that the assessment of the Business Studies subject or BOCS, the entrepreneurial skills on live-share trading using ICT, should be dynamic and authentic, enabling learners to implement the classroom-oriented assessment in the real-life situations. For example, the study revealed that firstly, learners were provided with the trading market analysis data, which they were supposed to study and analyse and therefore respond to the questions that were provided. In addition, the data generated revealed that learners were given a simulation where they were required to write trading journals in groups following the instructions provided. Lastly, the study revealed that learners were required to

do presentations of their demo trading accounts, which was taken as their real-life businesses (see Sections 4.3.7; (4) 2.3.6).

The study revealed that once learners have acquired a thorough understanding of their live demo accounts, they would then open their live-trading accounts, which the team agreed to take as a direct by-product and/or tangible product, which they would achieve through the teaching and learning of BOCS, the entrepreneurial skills using ICT, as captured in literature (DeJaeghere, 2017) (see Section (4) 2.3.6). The generated data revealed that these multiple and authentic assessment strategies were successfully implemented through the use of REAL, the venue with all the resources provided by the external stakeholder, Mr Mkhulise, the trader, together with the skills, knowledge and experiences of various internal and external stakeholders (see Section (4) 2.3.6).

Therefore, the study recommends that after receiving continuous professional development, teachers should align the assessment with the legislative imperatives, ensuring dynamic and authentic assessment. This would produce a dynamic, authentic and productive workforce (learners) that would become active co-researchers in the economic activities of a democratic country's digital economy.

### 6.3.5 Need for continuous and professional teacher development

Empirical data determined that teachers did not have adequate knowledge of both theory and practice in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. This means that the training received by teachers promoted the drilling and memorisation of skills, which is not enough and did not match the requirements of the types of learners to be produced for the current 4IR epoch. Furthermore, it was determined that even the continuous workshops scarcely translated into teachers' knowledge, skills, and attitudes that aimed at creating, preserving, evaluating and transmitting knowledge through continuous learning. The explanation for this state of affairs was that these workshops were provided for a short period of time, hence, they were insufficient.

#### *6.3.5.1 Recommended strategies are to promote continuous and professional teacher development*

The study therefore recommends that continuous workshops be provided for Business Studies teachers, especially for those topics that require teachers to equally teach practical lessons. The study recommends that external stakeholders, stemming from various departments, should be involved in the teaching and learning of BOCS, the entrepreneurial skills using ICT. The team recommends that Business Studies teachers, especially when tackling practical topics, for example, Investment on Shares, should rope in external stakeholders, such as professional traders with knowledge on market analysis and live-share trading skills, knowledge and expertise. The involvement of external stakeholders would help teachers acquire new knowledge, skills, values and expertise in BOCS, particularly in the live-share trading using ICT. That would aid them to impart knowledge and produce learners with skills and knowledge learners that are compliant with the expertise required in the 4IR characterised by the digital economy.

## 6.4 CHAPTER SUMMARY

In this chapter, the researcher discussed the background of the study, the research question, the aim and the objectives of the study, and the findings and recommendations. Recommended strategies for the enhancement of collaborative lesson planning were discussed. Recommended conditions conducive for collaborative planning were also discussed. The researcher also discussed the threats and risks undermining collaborative planning. Strategies recommended promoting REAL where team-teaching as well as the use of inter-sectoral team within and internal and external coordinating team were discussed. The use of dynamic and authentic assessment as recommended strategies was also discussed. Lastly, the researcher discussed the need and the recommended strategies to promote continuous and professional teacher development.

# CHAPTER 7
# CONCLUSIONS, CONTRIBUTIONS AND IMPLICATIONS OF THE STUDY

## 7.1 INTRODUCTION

The aim of this study was to design a strategy of teaching business opportunities creation skills using information and communication technology (ICT). The justification for designing such a strategy was discussed in the previous chapter. The study was instigated by the need for the infusion of the academic knowledge and theory acquired in classroom with practical lessons, which therefore enables learners to implement such knowledge in real-life situations while they are still in school and after exiting school. The findings of the study are not relevant to South Africa only, but also to other countries whose education systems are churning out the same redundant learners and/or graduates. This chapter presents conclusions drawn from the findings of the study. It also discusses the contributions and implications of the study. The following section presents a summary of the researcher's personal reflections in relation to the study.

## 7.2 PERSONAL REFLECTION

The researcher's extended experience in teaching commercial subjects at high schools prompted her interest in undertaking this study using a collaborative and inter-sectorial research approach, hence, the main question: "How should practical business opportunities skills be taught using ICT from a real-life situation?". Having taught for more than 15 years and producing quality results at secondary schools, the researcher always had a firm conviction that irrespective of the lack of implementation of the business studies' skills and knowledge, which have been acquired from the classroom environment, it is imperative, as an educational support service, that cognition be given its rightful position in the school curriculum. The study may variously handle the 'how question', depending on the diversity of contexts. Another reflection was that despite the purposes and general aims of Grade 12 Business Studies CAPS document, which states that when teaching, teachers should equip learners' entrepreneurial skills, knowledge, values and principles without considering learners' backgrounds, culture, etcetera, Business Studies teachers do not infuse theory and

practice to support national education goals. Even though it should be taken into cognisance that teacher-training institutions offer academic and theory in the curriculum for teacher-trainees, nothing much has been done to certify that the obtained business knowledge and skills are practically implemented in students "lived realities". For example, when teaching the topic, "Investment in Stock", Business Studies teachers teach concepts like definition of shares, advantages and disadvantages of investing in stocks, where most learners, after they have adequately grasped the knowledge, would acquire almost 50% pass percentage and above. This practice does not enhance the practical implementation of business skills and knowledge, which may lead to students opening their own live share trading accounts, which may be treated as their "businesses", "by-product" and/or "tangible products" that afford students the opportunity to make their own money (profit made from their demo and/or live-share trading accounts).

Moreover, as an experienced Business Studies teacher, the researcher was motivated to reflect on the teaching of Business Studies in South African schools. The researcher learnt that it is not adequate to impart academic content and knowledge without reflecting on teachers' attitudes, readiness and efficacy on the application and implementation of the obtained business knowledge and skills on REAL in their daily teaching activities. This could be due to the fact that there is a lack of follow-ups by teacher-training institutions, as well as a lack of the inter-sectorial and coordinating team from both internal and external stakeholders with various skills, knowledge, values and expertise emanating from different backgrounds that could help teachers infuse theory and practice. The researcher contends that the significance of involving external stakeholders is stated in educational policies, but lacks practical implementation. Business Studies teachers do not work hand in hand with external stakeholders who can help them infuse theory and practice in investment on stock where learners can be taught in the classroom situation how live-share trading can be done in their real-life situations.

Therefore, it is this experience and observation that instigated this research journey to ensure that there is infusion of theory and practice through the collaborative process involving both internal and external stakeholders. The purpose of the study was to investigate and collaboratively learn how internal and external stakeholders can enhance the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT, ensuring that learners are taught practical trading skills and knowledge while they are still in school and when they have exited the school. The knowledge, multiple-skills, and multi-perspectives gathered from

the literature review and shared by co-researchers helped the researcher to learn through the research process how live-share trading skills can be taught through the infusion of theory and practice.

The research journey investigated on how the social transformation of students and the society at large can be enhanced through the live-share trading skills intended to be imparted through the study. Bricolage, as a theoretical framework, and in relation to the decolonisation and democratisation of the Business Studies curriculum, was utilised and added meaning to the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT.

## 7.3 SUCCESS AND CONTRIBUTION OF THE STUDY

### 7.3.1 Theoretical contributions

The theoretical contributions of the study are evident through the application of bricolage as methodological lens, which accomplishes a meaning-making task by combining and utilising multiple tools, which allowed the team to engage in fluid, diverse and creative approaches to the study. For example, bricolage afforded the researcher and the research team the opportunity to utilise whatever strategies, methods and empirical data at their disposal to ensure that multiple quality results were obtained for the study (Rogers, 2012). The study used PAR where one-on-one interviews, meetings, workshops and observations were used to generate data, which were then analysed textually, socially and discursively, using the CDA to depict the complexities underpinning the study.

In addition, as the theoretical bricoleur, the researcher managed to work as the producer and consumer of the new knowledge through the interpretation of the paradigms, which enabled the researcher and the entire team to become knowledgeable about the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. Furthermore, the study has contributed through critical bricolage by ensuring that the team questions, learns and seeks the knowledge of the “silenced” and the “excluded” which, in this case, are learners and Business Studies teachers. The contribution made by this study is that it ensured that the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT, infuses theory and practice where learners practically do live-share trading through demo and/or live accounts as agreed. Teachers, on the other hand, were fully trained on how to integrate ICT in the teaching of

BOCS, the entrepreneurial skills on live-share trading through the workshops and observations done during the enquiry.

Furthermore, the study contributed by dismantling the knowledge constructed and dominated by the colonial elites, who stated and ensured that the "natives" were taught the "industrious" skills that would enable them to write a curriculum vitae, apply for and get the job. Through critical and social bricolage, the study enabled learners to become meaningful and productive citizens by fully participating in the country's economic (one of PESTLE's elements) activities through live-share trading in the JSE, the largest institution embodying the South African economy. Through live-share trading by learners, as well as the integration and mastering of teaching the practical live-share trading skills, infusing theory and practice, social transformation (PESTLE element) from both teachers and learners, specifically emerged. For example, learners' saving capabilities, investment skills and knowledge were inculcated, as they were taught that shares could be bought even with their "caring money". This taught them that for them to be able to trade shares in a long-term investment, they do not need a huge sum of money, but with as little as R10 or even less, they could be able to trade shares in different companies listed on the JSE. This taught them to be economically active human beings who are capable of making critical decisions that can positively transform their lives. Further, bricolage allowed the research team to work collectively in identifying complex challenges and problems, making informed decisions, developing solutions to identified problems, which assured researchers that there is always 'unity in diversity'. The principal researcher chose bricolage, as a methodology, because is multi-perspectival, thus, the solutions to the challenges faced by teachers and learners in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading, are best known by them, hence the adoption of teamwork.

### 7.3.2 Methodological contributions (PAR)

The methodological contributions of the study are evident in its application of PAR principles during the data generation process, which proves PAR's appropriateness as it aims at advocates the social transformation of the South African education system. PAR enabled the research team to analyse the current situation on the teaching of Business Studies collectively by identifying challenges, creating a common vision and on drawing up plans on how they were going to work on designing a strategy of teaching BOCS, the entrepreneurial skills on

live-share trading using ICT. Through PAR, the main researcher and co-researchers collaboratively gained experiences, skills and knowledge that would bring social changes into their real-world. The experiences, skills and knowledge gained through PAR cascade into the teaching strategies that would lead to sustainable learning environments: REAL. PAR also encourages and allows co-researchers to apply their minds critically on identifying unfavourable conditions that stifle the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT and to determine final agreements on what should be done to change the current teaching and learning situation.

Another methodological contribution is the development of a collaborative, inter-sectorial and coordinating team with multiple skills, knowledge and experiences with an intention of obtaining a solution to the challenges impeding the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. The marginalised and historically disadvantaged groups (for instance, Business Studies teachers and learners), through PAR, are empowered and made aware that they have the power to find solutions to the identified challenges. This was done through the use of PAR, as the study shifted from a research approach that objectifies people, to research that is done with people, which encouraged the co-researchers to participate in finding solutions on the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT.

In addition to PAR, CDA was used to analyse the generated data, which enabled all the relevant discourses in the study to be critically and radically interpreted, which thus contributed to an in-depth understanding that Business Studies teachers, learners, the LED manager, business people (professional trader), the NAFCOC representative and other people who partook in the current study had regarding insights into the issues of the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. As a result, through CDA, different political, economic, social, technological, legal and environmental backgrounds; opinions; knowledge systems, skills and experiences from different team members were reconciled and a common vision and a better understanding were reached to ensure the infusion of theory and practice in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT.

### 7.3.3 Practical contributions

The study showed that the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT, requires the participation and collaboration of the inter-sectorial and coordinating 4-D team. The study, through the utilisation of PAR and CDA, found that the lack of a collaborative and coordinating team comprising the relevant internal and external sectors was responsible for the incapacitation characterising the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. This suggests that the South African education system needs to devise strategies that make it imperative for schools to adopt collaborative and coordinating teams that are inclusive of both internal and external stakeholders from various sectors to enhance collaborative teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT.

Accordingly, Business Studies teachers, with the help of the School Management Team (SMT), should ensure that the learners, business people (professional traders), the LED manager, the Business Studies specialist and the NAFCOC representative, work together to develop practical ways of enhancing the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. This would enable learners to infuse the theory and academic knowledge and skills acquired in the classroom with practical live-share trading occurring in real-life situations. Moreover, the study also recognised a gap in the teaching methods used by Business Studies teachers when teaching BOCS, the entrepreneurial skills on live-share trading using ICT, which emanates from the module, “Investment in Stock”. The study found that teachers used conventional teaching methods that scarcely promoted the infusion of theory and practice in learners’ “lived realities”. Through the CDA approach, it was discovered that teachers used conventional methods of teaching mainly because they were producing “quality results” which, nonetheless, were found to be impracticable in real-life situations. The study further established that the knowledge and skills acquired through conventional teaching methods did not promote the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT.

Therefore, the study established that the use of REAL mingled with the inter-sectorial and coordinated team with business skills, knowledge, values and principles, is critical in improving the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT endeavours. Being cognisant of the gap in the teaching methods, the study contributed to the designing of a strategy that has the potential to positively transform the teaching methods and

strategies and thus integrate theory and practice to enable learners to practically engage in live-share trading through the opening of demo and/or live-share trading accounts. This strategy enhances the awareness that the teaching methods used by Business Studies teachers and the involvement of inter-sectorial stakeholders could improve learners' skills, knowledge, values and principles required in and relevant to the 4IR. The strategy intends to allow learners an opportunity to have "the voice" through live-share trading and for them to become productive co-researchers in the South African economy propped by the economic institution, the JSE.

Moreover, this study was successful in operationalising the bricolage principle of multi-perspectives in research to bring forth and utilise various skills and knowledge emanating from marginalised individuals (internal stakeholders), like Business Studies teachers and learners, as well as of the external stakeholders, such as business people, the LED manager, the Business Studies subject specialist and the NAFCOC representative, which is the first practical lesson that was ever done in Amajuba District, KZN, if not in the entire country. Usually, most research projects done in South African schools involve teachers and/or learners and other stakeholders, but these research groups are not given a chance to give their perspectives and voices. The research is conducted superficially without them being involved in proffering solutions to the problems that affect them on a daily basis. Thus, they are not empowered and respected. Therefore, this study has positive contributions and implications.

## 7.4 LIMITATIONS OF THE STUDY

The lack of inter-sectorial and multidimensional stakeholders in the education sector limits the need to design a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. The absence of REAL was perceived as another limitation. This limitation is justified by realising that REAL could provide the technology-driven environment that could allow for the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading.

Furthermore, this limitation is justified when realising that the use of dynamic and authentic assessments could enable learners to practically infuse academic and theoretical knowledge acquired from the classroom with the practical opening of demo and/or live-share trading accounts. This could equip learners with business skills, knowledge, values and principles for self-fulfilment, which let them become productive citizens in a democratic society, as

required in the 4IR. The absence of REAL, the technology-driven environment, further limits the implementation of continuous teacher development programmes where teachers could be trained on how to utilise digitalisation and robotics the integration of ICT in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading.

## 7.5 IMPLICATIONS OF THE STUDY

First, the preparation stage of the study was found to be a crucial and imperative implication , which was of the greatest importance to designing of a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. Therefore, during the preparation process, the study found the establishment of the inter-sectorial and multi-dimensional team to be of utmost importance. This was because the designing of the strategy that fosters the teaching of BOCS, the entrepreneurial skills on live-share trading, needed to have different internal and external stakeholders, emanating from various historical, social, cultural, and political backgrounds with multiple and relevant skills, knowledge, values and principles. The study found that what is critical in ensuring that the strategy that could be used to teach BOCS, the entrepreneurial skills on live-share trading using ICT, would be learners equipping students with business skills, knowledge, values and principles applicable to their real-life situations.

Through preparation, the study coordinator identified, engaged and recruited co-researchers with relevant skills, knowledge and expertise to participate in the study as coordinating team members. All the co-researchers, upon their recruitment, were made aware that for the success of the establishment of the team, they should have the patience, hope and passion to pursue the team's common vision and mission. After the establishment of the team, it was agreed that the team's strengths, weaknesses, opportunities and threats, together. In addition, the team agreed that the political, economic, social, technological, legal and environmental macro environments where the research would be (…) , were put into cognisance to ensure the success of the strategy. Therefore, equality was ensured amongst team members, thus enhancing social cohesion and transformation in the society, especially among students who would be equipped with the skills, knowledge, values and principles required in the current regime of the 4IR.

The study concluded that it was crucial to establish the inter-sectorial and multi-dimensional team as the first step towards the performance of collaborative planning that would help

integrate the team members' diverse skills, knowledge, values and principles required for the teaching of BOCS, the live-share trading using ICT. Furthermore, implications, such as the need to use REAL, the use of dynamic and authentic assessments and the need for developing and implementing continuous teacher development programmes, foster and support the creation of conditions essential for the successful implementation of the strategy. These implications are discussed below.

### 7.5.1 Implications for the use of inter-sectorial and multi-dimensional team

The study recommends the establishment of an inter-sectorial and multidimensional 4-D team that would provide an institutional and financial framework that would help enhance the effective provision of REAL, ensuring the infusion of theory and practice in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. The inter-sectorial and multidimensional team consists of Business Studies teachers, learners, business people (professional traders), a Business Studies specialist, a LED manager, a NAFCOC representative who, with their multiple skills, knowledge and expertise, would advance the effective infusion of theory and practice. On the other hand, the institutional and financial framework comprises the National Skills Authority; National Skills Fund; and Sector Education Training Authorities (SETAs), amongst others, which may help provide infrastructural and financial resources that may enhance and support the integration of theoretical learning from schools with practical learning for the enablement of a skilled and knowledgeable livelihood entrepreneur.

The study recommends that, for example, Education, Training and Development Practices ETDP, Sector Education and Training Authority (SETA) and Finance and Accounting Services Sector Education and Training Authority (FASSETA) may start at school level to supply internship to Business Studies learners, which would allow them to have their live-share trading account being opened once they are fully acquainted with the trading skills, knowledge and expertise through demo accounts. That will ensure that learners are equipped, irrespective of their socio-economic backgrounds, race, gender, physical ability or intellectual ability, with the business skills, knowledge and value that necessitate their self-fulfilment and meaningful participation in the society as productive citizens of a free country as stated in the general aims and purposes of the South African Curriculum.

### 7.5.2 Implications on collaborative planning

Another implication is collaborative lesson planning that includes and prioritises activities, resources, people responsible for each activity and the time frame when activities ought to be executed. The study recommends that activities should be divided between and among all the stakeholders, for example, Business Studies teachers, learners, business people and all other relevant internal and external stakeholders, according to their respective skills, knowledge and expertise that emanate from their numerous historical, social, cultural, political and economic backgrounds. Precisely, the study recommends that the continuous professional teacher development and the practical part in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT, should be done by the professional trader as he or she is a specialist.

In addition, the study recommends that when planning a lesson that needs prerequisite skills, knowledge and expertise from external stakeholders such as a professional trader, there is need to deviate from the normal timetable to one that infuses theory with practice. The change should be communicated with the School Management Team (SMT) and School Governing Body (SGB); the SGB should be involved in discussions as they represents the parents of the learners, the SMT cannot take decisions alone where 'line day' and/or 'Flexi-Friday' (as discussed in Chapter 3) can be used.

### 7.5.3 Implications for the use of REAL

The study further recommends the use of REAL where the teaching and learning environment is technology-driven and would enable students to implement the knowledge and skills acquired in the classroom to their real-life situations. The use of REAL changes normal Business Studies classes to "laboratory classroom" with infrastructural resources that enable students to practically open their demo and/or live-share trading accounts, infusing academic theory with practical, real-life world work experiences.

Furthermore, the study recommends the use of REAL in the teaching and learning of BOCS, the entrepreneurial skills on live-share trading to equip learners with the global competitive skills, knowledge and expertise that are compliant with the demands of the 4IR. After careful considerations, the researcher further recommends that robotics and digitalisation, as teaching methods, should be utilised to ensure that learners are acquainted with skills, knowledge and

expertise suited for self-fulfilment and life-long learning in the 4IR epoch would decrease the unemployment rate as learners would be able to execute live-share trading and make profits.

### 7.5.4 Implications for the use of dynamic and authentic assessments

The study advocates that the assessment of BOCS, the entrepreneurial skills on live-share trading using ICT, should be dynamic and authentic. This means that teachers should refrain from subjecting students to standardised and static assessments that promote drilling and memorisation. Through dynamic and authentic assessments, students are afforded an opportunity to practically apply academic skills and theoretical knowledge in real-life situations. For example, this ability was evident when studentsmanaged to critically analyse real trading markets using the PESTLE analysis, a critical tool utilised before the execution of trades (buying or selling of shares), which was given as a simulation. When using the PESTLE analysis, learners, for instance, have to politically, economically, socially, technologically, legally and environmentally analyse the share market before executing the trades, a crucial skill traders should acquire. During the simulation, students were required to collaboratively keep a track record of market trends by writing the trading journal for that particular market shareprice. By having to take critical decisions on shares to be traded, students felt honoured as they took control of their assessment, which led to the infusion of both their theoretical and practical learning.

In addition, students after keeping records on particular share markets, students were required to do presentations of their demo accounts, which represented their “businesses”, the by-product and/or tangible product of their learning where profits and/or losses were made. They were supposed to tell the team, what, why and how shares were selected, which enhanced their cognitive skills development while acquiring critical thinking, problem-solving, communication and presentation skills. Thus, learners through trading skills, learners were prepared for the transition from school to the world of work where they could start their own “businesses” (live-share trading accounts) while they were still in school and/or after exiting the school.

### 7.5.5 Implications for the continuous teacher development programmes

Another implication is that the continuous teacher development programme would help teachers to be always acquainted with current knowledge, skills and expertise required for the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. The study recommends the adoption of CTDP, as it was evident from the study that Business Studies teachers can only teach part of the theoretical knowledge without the practical part of share trading. The study therefore recommends that teachers be continuously trained by professional traders who are fully acquainted with the live-share trading skills. This would help teachers grasp the trading skills and knowledge for future use in the teaching and learning of BOCS, the entrepreneurial skills using ICT.

## 7.6 CONCLUSIONS

A number of conclusions were derived from the findings of the study. This summary of findings, conclusions and recommendations on the need to develop a strategy of teaching business opportunities creation skills using ICT is based on the ones stated above. Having demonstrated the need to design a strategy that enhances the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT, it is thus concluded that the anticipated strategy could address the shortcomings that have seen the education system producing learners with redundant skills and knowledge. The strategy can thus help produce learners that are equipped with the skills, knowledge, values and principles that are consistent with the 4IR with its digital economy. This would also help equip learners with the skills required as per the policy framework. The study, therefore, recommends that teachers be fully equipped with the skills, knowledge and expertise, which would help them produce learners that are capable of proudly implementing skills and knowledge in real-life situations and thus be globally marketable.

These conclusions were drawn after the radical and critical data analysis and interpretation processes were executed using CDA with the aid of research questions. The research questions and objectives helped in answering the main research question: *"How to teach practical business opportunities creation skills, the entrepreneurial skills on live-share trading using ICT from the real-life situation?"*

One of the subsidiary research objectives was *to analyse and understand the challenges in the designing of a real-life-situation strategy of teaching 'business opportunities creation' skills using ICT*. This research question justifies the need to enhance the practical teaching and

learning of BOCS, the entrepreneurial skills on live-share trading using ICT. This required the researcher to engage with people who are affected by the problem under investigation to enable the collective analysis of the fundamentals of the current situation of teaching BOCS, the entrepreneurial skills on live-share trading using ICT to justify the need for its enhancement. Furthermore, to achieve the mentioned objective, the researcher invited other external stakeholders who were believed to have ample knowledge, skills and experience that would be vital to the problem under investigation. Moreover, as a data generation approach guided by the principles of bricolage, PAR helped in the creation of safe communication spaces, which provided co-researchers with a conducive atmosphere to share their views and perspectives, thus leading to a common understanding of the nature of the problem encountered in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. In addition, CDA was used to analyse the generated data and from the textual level, the findings revealed that the current situation in the teaching of BOCS requires an urgent intervention as numerous challenges were discovered through an analysis and discussion of co-researchers' responses. These challenges include the lack of involvement of the inter-sectorial and coordinating team, the need for REAL, use of static and standardised assessments and absence of continuous professional development programmes for teachers. Furthermore, it was discovered that through social practices, Business Studies teachers received teachers' training, which excluded the practical part of teaching BOCS, the entrepreneurial skills on live-share trading using ICT. Learners also showed that they did not know that after having learnt the theory and classroom knowledge, they could practically do live-share trading while they are still at school. Those who were aware of the business opportunity stated that they did not know that live-share trading could be practically done within the time scheduled by the school.

The conclusions regarding these findings are that the challenges originate from the lack of the inter-sectorial and coordinating team that could enhance the mingling of multiple skills, knowledge and experience regarding the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. People from different sectors could have come together and shared their live experiences, skills and knowledge to ensure that learners are taught practical skills on the trading of live shares using ICT. People find themselves working in isolation and solos without teamwork and cooperation in the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. The study therefore concludes that there is a dire need for the designing of a strategy that enhances the teaching of BOCS, the entrepreneurial skills on live-

share trading using ICT, to ensure that learners are equipped with the skills, knowledge and experiences that would make them productive citizens who participate in the country's economic activities.

Another analysis was done to determine *the components that are necessary for the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT*. Through discussions, the components suitable for teaching BOCS, the entrepreneurial skills on live-share trading using ICT, were identified using the same approach that was utilised to address the first question. The principles of Bricolage guided the researchers throughout the discussions. Again, CDA was applied to analyse the discourses, which revealed the need for Business Studies teachers to adapt to REAL to ensure that the practical part of teaching the practical component of live-share trading using ICT is enhanced. The research team concluded that this can be done through the use of inter-sectorial and coordinating teams through which skills, knowledge and experiences can be inter-mingled and utilised to enhance learners' understanding of both theoretical and practical teaching of BOCS using ICT.

Moreover, an analysis was done to critically consider *the responses to the conditions that are necessary for designing a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT*. The findings generated conclusions. The utilisation of PAR and the free-attitude interviews allowed the research team to create solutions from their experience of participating in PAR. Through the research process itself, co-researchers were allowed to reflect on and relate to their day-to-day experiences and work conditions that have muted the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT. The conditions that were found to significantly enhance the teaching of BOCS using ICT were those conditions that were conducive for the inter-sectorial and coordinated team; conditions that were conducive to a shared vision and conditions that supported the effective use of REAL**.** It was then concluded that in the presence of these conditions, the teaching of BOCS, the entrepreneurial skills on live-share trading using ICT can be successfully heightened.

In addition, an analysis was further done on the findings which related to *the possible threats that might hamper the design of the strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT*. The findings revealed threats such as teachers' resistance to change to REAL and a lack of infrastructure and resources. The study concludes that teachers should be trained and developed on how to use REAL so that they teach BOCS accordingly and matching the current 4IR. In addition, the study recommends that other stakeholders, for

example, business people (professional traders) should be involved so that they contribute towards the provision of the necessary infrastructure and resources (through their venues) for the effective teaching of BOCS, the entrepreneurial skills using ICT.

Moreover, findings emanated from the analysis of *the indicators of success on the designing of a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT*. The identified indicators of success were the scope of content knowledge, technological content knowledge and practical live-share trading skills, which allowed learners to open their demo/live-share trading accounts, which served as their "practical businesses". Additionally, PAR was guided by the principles of bricolage to ensure the designing of a strategy of teaching BOCS, the entrepreneurial skills on live share trading using ICT.

The study concludes that a strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT has the potential to empower learners and instil in them entrepreneurial skills that allow them to become entrepreneurs while they are still at school. Furthermore, through the opening of live-share trading accounts, learners' savings and investment skills were enhanced. This was evident from learners' use of their pocket monies as they were taught that it does not require hundreds of thousands of South African rands for anyone to be able to conduct trade. Through the strategy of teaching BOCS, the entrepreneurial skills on live-share trading using ICT, learners were taught that it was possible to trade shares with as little money as less than R10,00, which prompted them to save money and perform long-term investment (investment on stocks) on shares from different companies. Therefore, the success of learners becoming successful business people depended on the utilisation of the inter-sectorial and coordinating team who had the opportunity to air and share their multi-perspectives, multi-skills and knowledge with regard to the teaching of BOCS, the entrepreneurial skills on live-share trading skills using ICT. The study concludes that a positive social change was brought into practice, thus allowing learners to become lifelong productive citizens who participate in the economic activities of their country.

In addition, the study concluded with the use of PAR as the theoretical framework as the most appropriate approach for the generation of data in the teaching and learning environment. The generated data inform the ways in which people (co-researchers) who are troubled by the identified problem find local solutions. In addition, people engaging in PAR are empowered as they formulate strategies of tackling the identified problems, realising their potential. Therefore, the use of PAR emancipates and gives hope to teachers as co-

researchers by allowing them to solve their own problems instead of letting the “most knowledgeable” to “lionise” themselves over them. Therefore, the use of PAR empowers and educates teachers on formulating strategies that enhance the teaching and learning of BOCS, the entrepreneurial skills on live share trading using ICT.

## 7.7 RECOMMENDATIONS FOR FUTURE RESEARCH

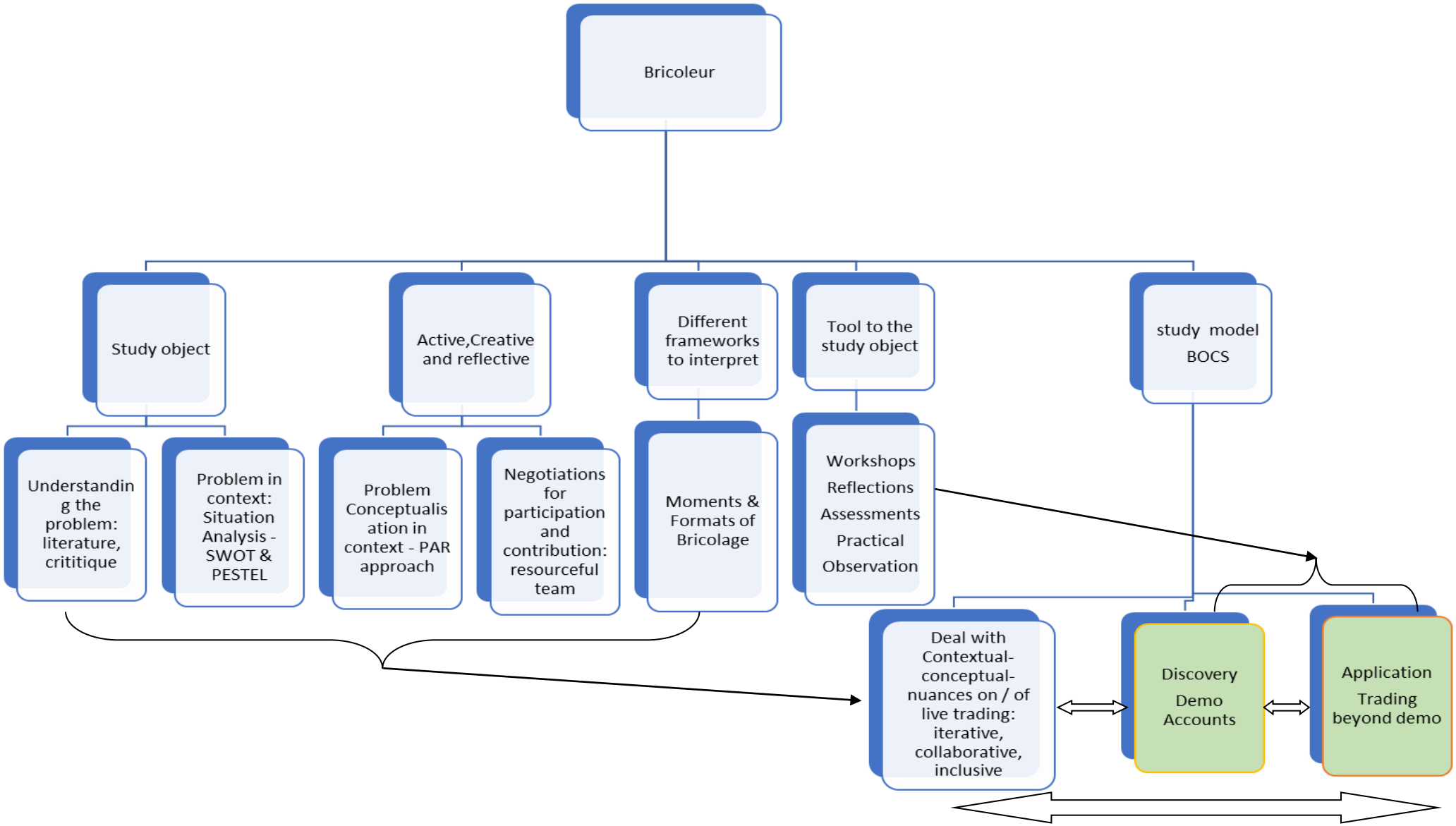
The study recommends that continuous research be conducted, with a focus on the identification of Business Studies topics that would infuse theory and practice in the teaching and learning environment. These topics should inculcate in students the entrepreneurial skills that would allow students them to establish their own businesses while they are still at school. Furthermore, investment on cryptocurrencies should also be considered. This would promote entrepreneurship and contribute to a positive social transformation of the education sphere in general.

## 7.8 CONCLUSION

This chapter presented the significance of the study (the mingling of theory and practice) in the current education system. Among other things, it presented the success and limitations of the study in relation to the teaching and learning of BOCS, the entrepreneurial skills on live-share trading using ICT. It further presented the theoretical, methodological and practical contributions the study has made and its implications for policy, practice and research. Moreover, the chapter also presented the recommendations for future research.

**Summary**

The diagram below, represents BOCS as an extension of the conceptual map depicted on page 19. The levels from Bricoleur which in this case represented me, the study leader, and the second level comprising study object, active, creative and reflective to study model are where part of the conceptual map I aadopted, ends.the third level starting with the block on understanding the problem to the one on methods, viz., workshops, reflections and others, are represent the actions and activities I engaged in preparation for the collaborative conceptualisation of BOCS with the relevant yet to be identified participants.


Bricoleur
Study object
Active,Creative and reflective
Different frameworks to interpret
Tool to the study object
study model BOCS
Understanding the problem: literature, crititique
Problem in context: Situation Analysis - SWOT & PESTEL
Problem Conceptualisation in context - PAR approach
Negotiations for participation and contribution: resourceful team
Moments & Formats of Bricolage
Workshops
Reflections
Assessments
Practical
Observation
Deal with Contextual-conceptual-nuances on / of live trading: iterative, collaborative, inclusive
Discovery
Demo Accounts
Application
Trading beyond demo

The study model block of the initial conceptual map turned out to become BOCS which constituted of three pillars / steps represented by, at the initial stage dealing with contextual-conceptual nuances and or veracities, followed by inquiry-discovery demo accounts and finally the application of trading skills, knowledge and values inauthentic situation. The reversible arrows between the steps and among them represent the iterations of PAR (see methodology chapter) we followed from conceptual, through implementation / action, and reflection.

The input to each of the three stages of BOCS is indicated by the two arrows from the extended aspects of the conceptual map. For instance, the conceptual-contextual nuances referred to in the first block and pillar of BOCS were guided and based on the aim and objectives of the study including what the study team adopted as their strategic aspects, namely vision, mission and values as discussed earlier in the chapter. These permeated the discussion from inception to encourage ownership of the problem and therefore the processes and solutions thereto. In other words, the justification for the need to design a real-life strategy to learn and teach business studies opportunities creation skills using ICT, was endorsed by the considerately selected participants based on the needs from situation analysis. The analysis of the situation considerate of internal and external factors, risks associated with trading, learning and teaching in rich environments for active learning (REAL) enjoyed priority and technical know how from different perspectives brought to the team by the participants.

The workshops on trading conducted by the professional trader, exposed the team to the real work environment where one takes charge of one's business with utmost care and responsibility. These also exposed learners / particpants to real time conditions for trading and the inherent risks associated with it. The demo account which also served as academic assessment opportunity, further elucidated implications of theoretical knowledge regarding trade on practice in anticipation and preparation for the actual applications. The back-and-forth interactive, reflective and participatory movements and engagement of participants throught the interwoven steps of BOCS, enriched the students critical and analytic thinking skills about share live trading. The excitement of going through these processes bore evidence of the learners aspirations for improving their lives and interest to learn more about trading. The fact that some of the students maintained their collaboration in this regard and the positive feedback received from the professional participants was heartwarming.

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# APPENDICES

## APPENDIX A: ETHICAL CLEARANCE

UFS·UV

**Faculty of Education**

24-Apr-2017

Dear **Mrs Lindelihle Pretty-Girl Donda**

Ethics Clearance: **A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS(BOCS) USING INFORMATION COMMUNICATION TECHNOLOGY(ICT)**

Principal Investigator: **Mrs Lindelihle Pretty-Girl Donda**

Department: **School of Higher Education Studies (Bloemfontein Campus)**

**APPLICATION APPROVED**

With reference to you application for ethical clearance with the Faculty of Education, I am pleased to inform you on behalf of the Ethics Board of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2015/0663**

This ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours faithfully

Dr. MM Nkoane
Chairperson: Ethics Committee

**Education Ethics Committee**
**Office of the Dean: Education**
T: +27 (0)51 401 9683| F: +27 (0)86 546 1113 | E: NkoaneMM@ufs.ac.za
Winkie Direko Building | P.O. Box/Posbus 339 | Bloemfontein 9300 | South Africa
www.ufs.ac.za

## APPENDIX B: PERMISSION TO CONDUCT RESEARCH FROM KZN DoE

education

Department:
Education
**PROVINCE OF KWAZULU-NATAL**

Enquiries: Nomangisi Ngubane | Tel: 033 392 1004 | Ref.:2/4/8/512

Mrs Lindelihle Donda
PO Box 24122
NEWCASTLE
2940

Dear Mrs Donda

**PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS**

Your application to conduct research entitled: **"A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING INFORMATION, COMMUNICATION AND TECHNOLOGY (ICT)"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 15 August 2015 to 30 November 2016.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Connie Kehologile at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report / dissertation / thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

Amajuba District

**Nkosinathi S.P. Sishi, PhD**
**Head of Department: Education**
**Date: 13 November 2015**

**KWAZULU-NATAL DEPARTMENT OF EDUCATION**
POSTAL: Private Bag X 9137, Pietermaritzburg, 3200, KwaZulu-Natal, Republic of South Africa ...dedicated to service and performance beyond the call of duty
PHYSICAL: 247 Burger Street, Anton Lembede House, Pietermaritzburg, 3201. Tel. 033 392 1004
EMAIL ADDRESS: kehologile.connie@kzndoe.gov.za / Nomangisi.Ngubane@kzndoe.gov.za
CALL CENTRE: 0860 596 363; Fax: 033 392 1203 WEBSITE: WWW.kzneducation.gov.za

## APPENDIX C: CO-RESEARCHER ADVERT

**A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS (BOCS) USING ICT**

### CO-RESEARCHERS ADVERT

**Vacancies have risen in the area of research, to be eligible answer the following questions**

Are you interested in academic research?

Do you have passion on Business Opportunities Creation Skills?

Do you want to contribute towards the economic growth and development of our country through Business Opportunities Creation Skills?

Do you wish to address the issue of economic equity in our country through the introduction of practice while learners are still at school through BOCS?

Do you wish BOCS to address issues of democracy, social justice, and violation of human rights in your society?

Do you have a suggestion on how and when the theoretical knowledge can be transformed to practical knowledge in ABET centres through BOCS?

Do you have passion on Information Communication System?

If your answers to the above question is YES

Then

You are the right person to participate in the research; I kindly invite you to be part and parcel of this research. Your contribution will be treated with respect and confidentiality

For more information contact

Lindelihle Donda

072 363 8051

lpvndo@gmail.com

**APPENDIX D: REQUEST FOR PERMISSION TO CONDUCT RESEARCH (ABET CENTRE)**

P.O Box 24122

Newcastle

2940

The Principal

……..

……

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR ABET CENTRE

I am s PhD student at the University of Free State (UFS), conducting a study under the topic: A Strategy to Teach Business Opportunities Creation Skills (BOCS) using Information Communication and Technology (ICT). Aim of the study is to design a strategy to teach business opportunities creation skills using ICT. This study will help teachers change from using traditional teaching methods to Rich Environments and Learning Environments (REALS) and help learners to infuse theory learned in class and practice in their real life world.

I hereby request permission to conduct this educational research at your centre. This study suggest collaboration of the inter-sectoral participants of Business Studies teachers, Business studies specialist, Local Economic Development (LED), professional trader, farmer, Nafcoc representative and learners.

I am prepared to observe all the stipulations of conducting research such as among others:

- Prior arrangement will be made to get consent from possible co-researchers.
- Participation in the study is voluntary and co-researchers may withdraw his/her participation at any time should he/she feels uncomfortable or conditions compel them to.
- All information obtained will be treated as confidential and be used for the purpose of the study only.

Thanking you in advance

Yours in education

---

LP Donda (2014218537)

## APPENDIX E: INFORMED CONSENT FORM

APPENDIX


| **Researcher:** | **Study Leader:** |
|---|---|
| Lindelihle Pretty-girl Donda | **Dr Tlali** |
| 24 Flamingo Street | Faculty of Education |
| Aviary Hill | University of the Free State |
| NEWCASTLE | BLOEMFONTEIN |
| 2940 | 9300 |
| C: 0723638051 | T: +27 (0)51 401 7756 |
| Email: lpvndo@gmail.com | TlaliMF@ufs.ac.za |


Date:

INFORMED CONSENT: A STRATEGY TO TEACH BOCS USING ICT

Dear Sir/Madam

I would like to invite you to partake in this research project: A strategy to teach Business opportunities creation skills (BOCS) using Information, Communication and Technology (ICT). We would like you to participate together with us in this research as it propose to design a strategy that promotes the interaction between the internal (teachers, learners, education specialist in Business Studies in the education sector) and external stakeholders (business people, LED manager, organisations) in the teaching of BOCS using ICT. The strategy aimed at enhancing the collaboration and co-ordination of both stakeholders to ensure the school produces learners that can implement and apply the theoretical entrepreneurial skills and knowledge learnt in class to their real life situation practically.

This study aims at designing a real life situation strategy to ensure that there is infusion of entrepreneurial theoretical knowledge and skills and practice in the real life situation by learners. Such a strategy refers to a situation where teachers uses REALs as teaching techniques and strategy as well as dynamic assessments that allows and enable learners to apply and implement practically that which has been theoretically done in class. Your experience, knowledge and skills as the will play a crucial role in developing learner's entrepreneurial knowledge and skills. The reason why we invited more than one participant is that we do not want to dictate which entrepreneurial skills and knowledge should be imparted to learners. Instead, we agreed that, the agreement should be taken by the team to ensure that learners tap from the multi-voices, multi-perspectives, skills, knowledge and experiences of the diverse inter-sectoral stakeholders. This will help us produce the workforce (learners) that is globally competitive which is suitable in the current Fourth Industrial Revolution (4IR) regime.

Your involvement will help in enhancing equity, equality, social justice, freedom, hope and fairness in terms of learning opportunities for all regardless of their diverse background. Indeed, your contribution will add value to this field of teaching and learning strengthening and deepening the understanding of educational value in the business studies field, especially in BOCS, the entrepreneurial skills on live share trading using ICT.

In addition, there are no risks to you that will emanate on your participation in this study. While I am appreciating your valuable and significant participation in this study, you should be aware that your participation is entirely voluntary and you are under no obligation to take part in this study. If it happens that you do partake and some pressing issues arises which makes you uncomfortable, you may stop your participation at any time without further implications. Moreover, if you are not happy with the way research is conducted, you are at liberty to contact me and/or my supervisor (indicated above) for discussions at any time. Again, please note that, ethically your real name will not be used in my publications or reports on the study.

Please fill in and return this page. Keep the letter above for future reference

Study: A STRATEGY TO TEACH BOCS USING ICT

Researcher: Lindelihle P. Donda

Name and Surname: _____

Age: _____

A STRATEGY TO TEACH BOCS USING ICT (Field of practice)

Contact number: _____

- I hereby give free and informed consent to participate in the abovementioned research study.
- I understand what the study is about, why I am participating and what the risks and benefits are.
- I give the researcher permission to make use of the data gathered from my participation, subject to the stipulations he/she has indicated in the above letter.

By placing your signature below, you declare that you are fully informed about the research project, and give your permission that the information may be used for research without identifying you as an individual.

Signature: _____ Date: _____

## Consent Form

**Research Project: A STRATEGY TO TEACH BUSINESS OPPORTUNITIES CREATION SKILLS USING ICT**

I hereby voluntarily consent to participate in a research project about teaching business opportunities creation skills using ICT. I have been informed on the purpose of this study and also on the right I have to terminate the research process on the event that my religion, personality and character is compromised in the process without threat or harm in any form. I understand that the interview will be recorded, and that all information shared in the interview is confidential, and that I have the right to review the draft narrative, prior to publication, for accuracy and completeness. I also understand that the recorded data will be protected and will be disposed after the publication of this thesis.

Name of participant:_____

Signature:_____

Date:_____

**APPENDIX F: MINUTES FROM FORTH PHASE MEETING**

**MINUTES OF THE MEETING (FORTH PHASE) HELD AT NEWCASTLE IN JUNE 2019**

Chairperson: Mcimeli

Agenda:

1. Opening prayer and remarks
2. Welcome and apologies
3. Review of the previous minutes
4. Matters of the day
   4.1 Strategies to be utilised
   4.2 Action plan (discussed)
   4.3 Development of on-going objectives
   4.4 Exit discussion
5. Closure

Mcimeli asked Mr Mkhulise to pray before the start of the meeting. Mcimeli welcomed all members who were present and mentioned all members who apologised. The previous minutes were read and adopted as true. The findings were tabled and included:

a) The need for inter-sectoral collaborative and coordinated team
b) Collaborative planning and preparation
c) Need to adapt to rich environment and active learning (REALs)
d) Use of realistic and authentic assessment
e) Need for continuous and professional teacher development

Mcimeli alluded and reminded the meeting about the urgency of coming up with the strategies to be utilised to ensure that theory and practice are infused in the teaching and learning of Business Studies (Investment Securities) entrepreneurial skills using ICT.

**Miss Nkosi** stated that since Investment Securities in shares is the practical topic, it would be better that Business Studies teachers invite people from outside (inter-sectoral team) to come and teach how learners can practically trade (invest in shares) in their real life world experiences.

**Mkhulise** concurred with Miss Nkosi as he emphasised the need for teamwork to fill the huge skills gap that South Africa, as a country, has. He further agreed that for the implementation of the REALs, he would provide us (the team) with his venue as he had all the infrastructure (computers, data projector, etc.) needed. He cited that this would ensure the infusion of theory and practice in the teaching of Investment in Securities.

**Nondoyi, in agreement with** Mr Mkhulise's promises, she stated that it would now be easy for them as teachers to answer learners' questions as she once struggled to respond to their questions regarding investment (trading) in shares as she only knew that shares were bought and sold at JSE as written in the textbook.

**Nkehli** raised the issue of implementing the plan of action as it was drawn up. She also expressed her happiness with the venue and all equipment needed for the infusion of theory and practice. She commented that she would use her skills and experience of using ICT as she was trained but never utilised it as the school lacked it. She stated that it was going to be easy for her to teach her colleagues how to use computers to teach.

**Mcimeli** congratulated teachers as well as learners for the opportunity afforded by Mkhulise and registered her happiness as teachers as well as external stakeholders would collaboratively plan and prepare lessons.

**Miss Xulu** thanked all members of the team for the rich knowledge and its importance especially to the current paradigm as learners were going to open their live trading accounts (businesses) while they were still in and exiting school.

**Khanya** (learner) expressed her gratitude and happiness as they were the first learners at school and the district that would have live share trading accounts (businesses). She pointed out that they would be able to participate economically by helping at home with the profit earned as they would own their "businesses".

In closing, Mcimeli thanked the committee and all the members who attended. He informed them of the date for the next meeting. He further applauded all the members for unity and collaborative teamwork shown. He then asked Mrs Nondoyi to close with a prayer.

The meeting adjourned.

## APPENDIX G: LETTER FROM LANGUAGE EDITOR

Mufasa Research Consultancy SERVING WITH DISTINCTION

Serving with distinction

04 November 2022

To Whom It May Concern,

Re: Editor's Letter

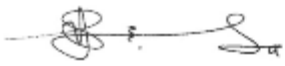
**A strategy to teach business opportunities creation skills using information and communication technology**

Below is the scope considered during language editing of the above titled MS:

- Grammar check
- Sentence construction
- Spelling check
- Punctuation
- In-text referencing
- Reference checking

As a professional editor, I pledge that the above aspects of the MS were, to the best of my knowledge, meticulously and correctly done at the time the work was sent to the authors. However, I am not responsible for any corrections that were made after the editing process.

Yours faithfully,



Kemist Shumba (PhD)

PhD in Health Promotion: University of KwaZulu-Natal [UKZN]
Master of Social Science in Health Promotion (*now lauded*): UKZN
Bachelor of Social Science Honours in Cultural & Media Studies: UKZN
Postgraduate Certificate in Education: Great Zimbabwe University
Bachelor of Arts (English): University of Zimbabwe

**Cell:** +27 78 315 6186 **Email:** info@mufasarc.co.za **Web:** www.mufasarc.co.za
**Address:** 7 Chartham House,180 Brand Road, Glenwood 4001, Durban, South Africa

**APPENDIX H: TURN IT IN REPORT**

LINDELIHLE PRETTY-GIRL DONDA

ORIGINALITY REPORT

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