SKILLS DEVELOPMENT WITHIN STATE OWNED ENTERPRISES: AN IMPLEMENTATION FRAMEWORK

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DECLARATION OF AUTHENTICITY

I declare that the research project, SKILLS DEVELOPMENT WITHIN STATE OWNED ENTERPRISES: AN IMPLEMENTATION FRAMEWORK is my own work, and all sources of information utilised within this research project has been acknowledged by means of complete reference.

This dissertation has not been submitted prior to this submission to any other research project and or degree to any other university or institution for examination.

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Date

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ABSTRACT

The research study on IMPLEMENTATION OF SKILLS DEVELOPMENT WITHIN STATE OWNED ENTERPRISES: THE DEVELOPMENT OF AN IMPLEMENTATION FRAMEWORK, explored and investigated the challenges that State-Owned Enterprises (SOEs) and Transport Education Training Authority (TETA) experience in the management and implementation of skills development projects within their respective organisations, and which are funded by TETA. The perceived inability of the SOEs to effectively and efficiently implement these projects has a direct impact on TETA's ability to disburse the associated project funding.

The research study applied a qualitative research design, using the case study method of enquiry. Five semi-structured interviews were conducted with project managers within SOEs in the transport sector, and one semi-structured interview was conducted with the management of the Transport Education Training Authority (TETA).

The findings from this research study were coded using the grounded theory method of coding, to manage the researcher's bias, and to ensure a systematic and accurate understanding of the environments and challenges being experienced within these organisations, and the impact of these challenges on the implementation of skills development projects and the disbursement of the associated project funding.

The resultant recommendations and framework emanating from this research study are based on the implications of the conclusions reached on the entire project management value chain of the skills development projects within SOEs and being funded by TETA.

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LIST OF ACRONYMS

APM	Association for Project Management
DHET	Department of Higher Education
ETQA	Education Training Quality Assurance
NDP	National Development Plan
NQF	National Qualifications Framework
NSDS	National Skills Development Strategy
PFMA	Public Finance Management Act
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
QCTO	Quality Council for Trade and Occupations
SAQA	South African Qualifications Authority
SETA	Sector Education Training Authority
SOE	State-Owned Enterprises
TETA	Transport Education Training Authority

CHAPTER 1. CONTEXTUALISATION

1.1. Introduction

The dawn of South Africa's democracy in 1994 brought with it many challenges and obstacles which had to be dealt with by the new government dispensation (DHET, 2009). One of the most critical challenges was, and still remains, the high unemployment rate and skills shortages being experienced within the South African economy, both in the private sector as well as the public sector (EDD, 2009).

With these challenges the South African Government, under the leadership of the Department of Labour formulated the National Skills Development Strategies (NSDS) I & II, and in 2009, the Skills Development and Training portfolio of Government was transferred to the Department of Higher Education and Training (DHET) when it was established, which then continued with the development and implementation of the NSDS III to address the skills shortages and challenges within the country.

The NSDS can be defined as the overarching strategic guide for skills development and provides direction to sector skills planning and implementation by the Sector Education Training Authorities (SETAs) (DHET, 2009). It provides a framework for the skills development levy resource utilisation of these institutions, as well the National Skills Fund (NSF), and sets out the linkages with, and responsibilities of, other education and training stakeholders (DHET, 2009).

Skills development has a very important role to play in addressing the numerous challenges in the South African economy; especially those of unemployment and social and economic inequality (DHET, 2009). This is based on the intended impact which is expected to be achieved by government in implementing the NSDS (DHET, 2009). There is an urgency within government to accelerate growth and equity in the context of an underperforming economy, as well as in terms of the impact the fragile global economy has on South Africa.

As a country South Africa currently ranks 61st out of 137 countries within the Global Competitive Index 2017-2018 (World Economic Forum, 2017). One of the critical measurements within the Global Competitive Index is the inadequately educated workforce. This reaffirms both the critical role of education and skills development, and the imperative for the country to ensure efficient and effective delivery of skills and training within industry, informed and driven by industry demands, within a clearly devised strategy in partnerships with all role players within the economy (DHET, 2013).

1.2. Context of the study

SETAs were formally established on 1 April, 2000 in terms of the Skills Development Act 97 of 1998, as well as the Skills Development Levies Act 9 of 1999. SETAs therefore are State-Owned agencies which act on behalf of DHET. Their mandate is to facilitate the development, quality assurance and

implementation of skills and training within all sectors of the economy and within the framework of the NSDS III (DHET, 2009).

The DHET grant regulations within the Skills Development Act 97 of 1998 provide the framework and mechanisms that allows SETAs to award discretionary grants as illustrated in Figure 1-1 below, in order to fund the implementation of various strategies developed for the achievement of goals as set out within the NSDS III and SETA Strategic Plans 2016-2018.

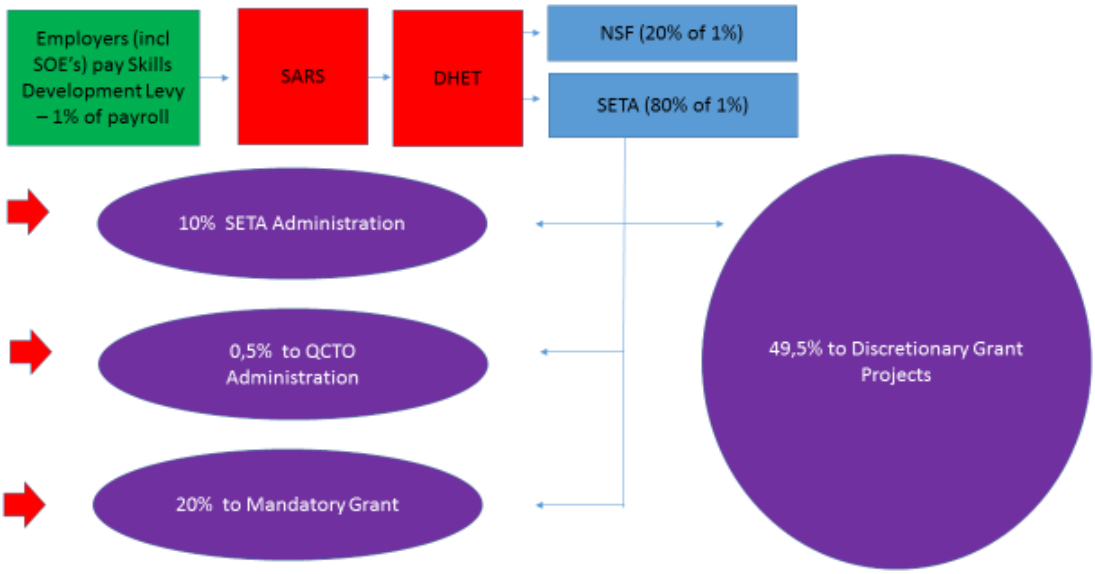

Figure 1-1: The skills development funding mechanism

SETA Strategic Plans (TETA, 2016) can be defined as the skills development blueprint for a specific economic sector as determined in consultation with the relevant industry. Skills needs and types of interventions are very specific to the skills requirements of that sector. SETAs award the discretionary grant funding to stakeholders (levy paying companies which include SOEs, non-levy paying companies, strategic government departments, community-based organisations and non-government organisations) within their respective economic sectors for the implementation of skills development projects. These are guided by the SETA Strategic Plan, which includes the following intervention types; learnerships, apprentices, graduate placements, work integrated learning, bursaries, skills programs or part qualifications and recognition of prior learning.

The funding is awarded to organisations by means of projects linked to discretionary funding contracts, with specific criteria, deliverables, and timeframes in accordance with the SETA Grant Regulations (DHET, 2012) and the DHET validation framework for performance reporting on project achievements.

The Transport Education Training Authority (TETA, 2000) is the SETA responsible for the implementation of the NSDS III within the transport sector. One of the main functions of TETA is to project manage those skills development projects awarded to stakeholders via the Discretionary Grant Funding, as mentioned previously. These projects within the context of the TETA are valued at approximately R500 million per annum, and are contracted over multiple financial years depending on the duration of the training interventions being funded and implemented within a project.

At any given time, TETA could be managing contracts over multiple financial periods which equate to approximately R1.2 billion. The SETA Funding Regulations (DHET, 2012) previously required that TETA disburse at least 75% of the annual budget within a particular financial year, which creates serious challenges for those project managers responsible for overseeing and managing the implementation of these skills development projects within the transport sector.

TETA currently manages and implements projects within private industry, government departments, non-government departments and SOEs etc. Since the TETA was established on 1 April 2000, it has managed to support and assist the transport sector with the implementation of their projects, developing various strategies to address the diversity of the transport sector skills needs. However, one main challenge that remains within the TETA is that of implementing and managing those skills development projects awarded to SOEs.

TETA currently has, for the 2015/2016 audited financial year, an amount of R11, 866, 856.00 and for the 2016/2017 audited financial year, an amount of R14, 935, 625.00 allocated to contracts with SOEs. These contracts are viewed by the Auditor General and the TETA Board as non-performing contracts, and which pose a great risk to the organisation with regards to meeting their goals and objectives within TETA's Strategic Plan 2016/2017 (TETA, 2016), as well as the low disbursement rate of the related funding (as per the DHET grant regulations).

The current TETA Discretionary Grant Policy (TETA, 2017) and the project management strategy of awarding the discretionary grant funding to SOEs is not providing TETA or the transport sector with the required returns on their investments, and there is currently a perception that the projects are not being managed effectively, and nor are the projects being implemented appropriately by the SOEs. The end result is twofold; one, the required skills are not being developed within the SOEs and projects remain incomplete, and secondly the funding associated with the projects is not being disbursed by TETA effectively to SOEs as SOEs do not meet the required deliverables and timeframes within their respective projects which inhibits TETA's ability to disburse the associated funding to SOEs.

1.3. Problem statement

It is within the context provided above that the researcher has identified the skills development projects within SOEs as a real research challenge that needs to be addressed within TETA as a matter of urgency. The risks associated with the low disbursement rate of the project management value chain within TETA have serious implications for both TETA and SOEs.

The risks for the organisations will, however, not be a risk to the research study in any form or manner. TETA operates within a bureaucratic and regulated environment from a governance perspective, and SOEs within the transport industry have their own industry-specific legislative (Aviation, Maritime, Rail and Road) environment within which they operate in addition to the governance legislation as SOEs.

The researcher defines the problem underpinning this research study as follows:

> There seems to be a lack of understanding within management and the leadership of TETA as to the reasons why skills development projects awarded by TETA to SOEs are not being implemented and managed effectively and efficiently; nor are they being successfully completed in certain instances, which directly has a negative impact on TETA's ability to disburse the associated project funding and meet the objectives and targets as set out in the NSDS III, and in particular, what TETA could do to improve the implementation, management and completion of skills development projects within SOEs.

The problem to be addressed is to establish what inhibits the implementation and management of skills development projects within SOEs. In so doing, it is hoped that the study will result in a revised and/or new framework for project implementation and management within SOEs specifically, which in turn will inform revised and improved practices within their respective project management value chains for both organisations, as they have a common goal to finalise skills development projects successfully; TETA from a funding and management perspective, and SOEs from an implementation perspective in order to address their skills needs.

1.4. The aim and objectives of the study

In view of the problem statement as discussed above in 1.3, the aim of this research study can be articulated as follows:

> To identify and develop a Project Implementation and Management Framework for TETA when awarding discretionary grants to SOEs, and the respective management and implementation thereof.

The following objectives have been identified in support of the above aim:

- To identify and understand the reasons why SOEs have challenges in implementing and completing skills development projects awarded to them by TETA.
- To determine the variables or factors within TETA that may contribute and affect the implementation and completion of skills development projects within SOEs.
- To evaluate the effectiveness of current project management policies, contract management procedures and methodology within TETA.

- To determine the impact of legislation, regulations and strategies on the actual implementation and completion of skills development projects.
- To develop a framework for TETA to ensure efficient and effective project implementation and management of skills development projects awarded to SOEs by the TETA.

1.5. Ontological position

Ontology can be defined as 'the science or study of being' (Blaikie, 2009), and it deals with the nature of reality. Ontology is a system of belief that reflects an interpretation of an individual about what constitutes a fact. In simple terms, ontology is associated with a central question of whether social entities need to be perceived as objective or subjective. Identification of the researchers' ontology at the start of the research process is critically important as it determines the choice of the research design. Figure 1-2 below illustrates the consequent impact of ontology on the choice of research methods via epistemology, research approach, research strategy, and methods of data collection and data analysis.

The context of the research study is the actual existing reality and therefore the ontology of the researcher. As an Executive Officer of one of the eight sub sector chambers within TETA that forms part of the Leadership/Management team that develops strategies and manages the implementation of skills development projects being referred to herein, the researcher is directly involved in the management and operational facilitation of implementing these projects.

The researcher has an interest in the research study, and her professional experience of some 15 years, assumptions, and knowledge will undoubtedly impact the research study. It is therefore important to position the researcher as the outcomes of the research will be based on the researchers' interpretations of the findings of the research. The ontological position of the researcher is relativist. Relativist ontology maintains that the world is unstructured and diverse. Our understanding and experiences are relative to our specific cultural and social frames of reference, being open to a range of interpretations (King & Horrocks, 2010).

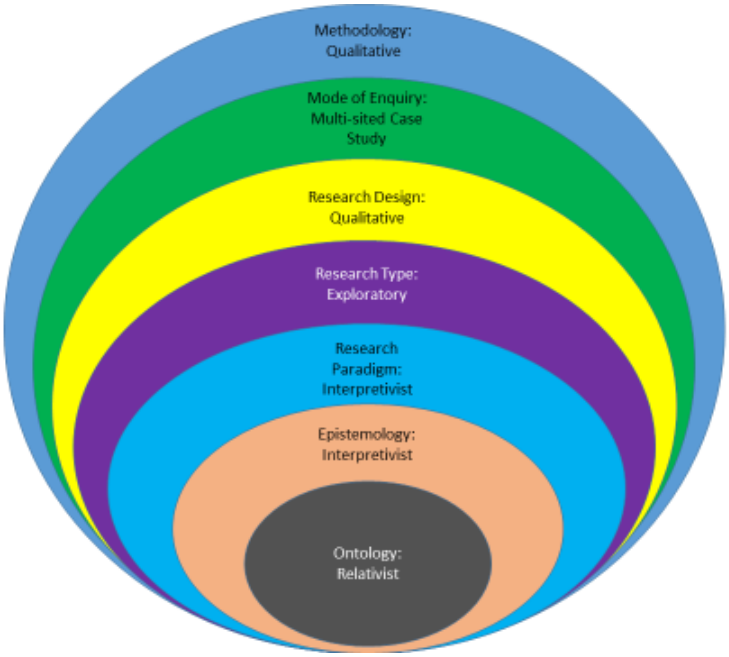

Figure 1-2: The 'research onion' as adapted for this research study (Saunders, Lewis & Thornhill, 2012)

1.6. Epistemological position

Epistemology as a branch of philosophy deals with the sources of knowledge. Specifically, epistemology is concerned with possibilities, nature, sources and limitations of knowledge in the field of study. Alternatively, epistemology can be branded as the study of the criteria by which the researcher classifies what does and does not constitute the knowledge (Hallebone & Priest, 2009).

As a research philosophy, the interpretivist approach is based on a naturalistic approach to data collection, such as interviews and observations. Secondary data research is also popular with an interpretivist philosophy. In this type of study, meanings emerge usually towards the end of the research process. This research philosophy will be applied to this research study, as the researcher is an active participant in the projects to be researched and the data collected, and the framework generated will be based on the researcher's interpretations thereof.

'Interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments' (Myers, 2009). The researcher's epistemology therefore is that from an interpretivist perspective, using the lens of the systems thinking approach to view the associated project management value chain.

The researcher is aware that there are varying difficulties within SOEs related to their ability to implement and manage skills development projects which are awarded to them by the TETA. The difficulties could, however, differ from entity to entity or be very similar in nature as all public entities are governed by the same legislation, regulations and policy frameworks. However, it is not the researcher's intention to identify or develop a single framework to address one single

component of the project management value chain, but to rather develop a framework that will encompass the requirements of all related bureaucratic processes and components emanating from the legislative, regulatory, and policy frameworks within which SOEs and TETA operate.

1.7. Design and methodology

The research study, being of an exploratory nature and aiming to explain a phenomenon (that phenomenon being the inability of the SOEs to implement and manage their skills development projects within their organisations), it seemed appropriate that the study be approached as a qualitative study from an interpretivist perspective.

The design of this research study would naturally be of a qualitative nature; to identify, explore and ultimately further explain the challenges within the research phenomenon. As a student within a mode 2 university, this research study takes place within the context of a mode 2 learning environment. The multiple site case study method of enquiry will be applied as one of the methods of enquiry which are applicable when conducting a qualitative research study. Creswell (2018) states that there are five different approaches which can be applied within a qualitative study; narrative research, phenomenology, grounded theory, ethnography, and case studies.

1.8. Theoretical Framework

The research study will be conducted within a specific theoretical framework. Theories are formulated to explain, predict, and understand phenomena; and in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions. The theoretical framework is the structure that can hold or support a theory of a research study. The theoretical framework introduces and describes the theory that explains why the research problem under study exists (Abend, 2008). Further to this, a theoretical framework also offers the researcher a specific lens, or view, through which the research topic is to be investigated (Boeije, 2009).

This research study will be based within the broader confines of the systems thinking approach, by observing the TETA project management value chain through the 'lens' of a system. Improving the performance of the parts of a system taken separately will not necessarily improve the performance of the whole; in fact, it may harm the whole (Ackoff, 1999).

The various components or 'systems' which affect the value chains within project management within the context of this research study, can also be identified as follows:

- Leadership and management.
- Governance and policies.
- Systems and processes.
- Resources – human and financial.

This study will be undertaken within the confines of the above listed project management value chain components within TETA and SOEs that are contributing levies to TETA, and which implement TETA discretionary grant projects.

Figure 1-3 provides a high-level perspective of the TETA operational value chain, identifying the various components within the 'system' which forms part of the phenomenon under study.

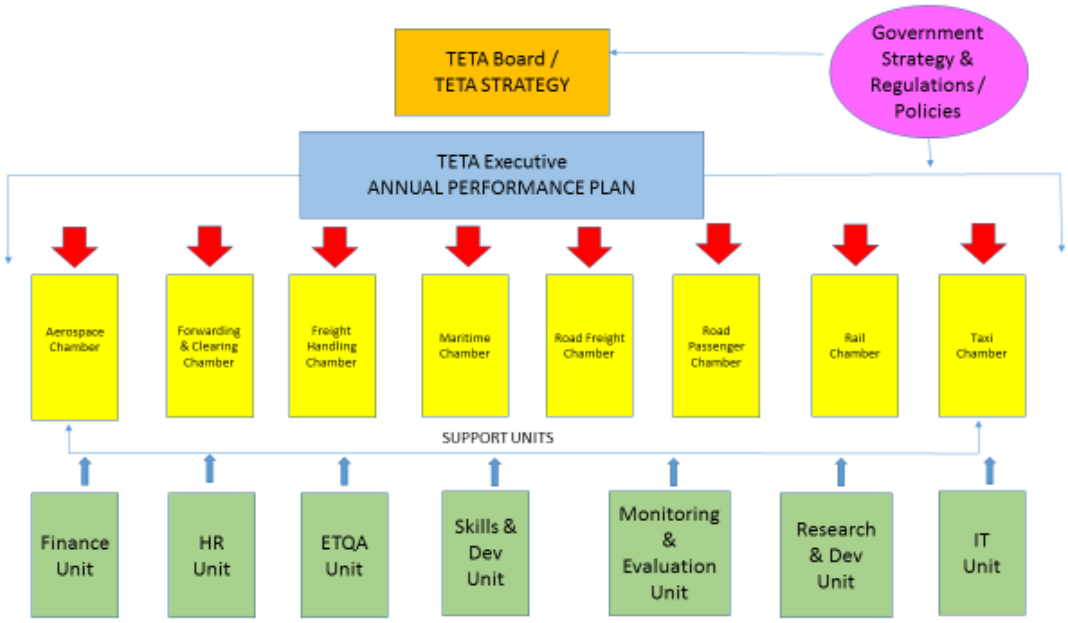

Figure 1-3: TETA operational value chain

1.9. Research questions/hypothesis

The main research question underpinning this research study is as follows:

> How does TETA enhance the management and implementation of skills development projects within SOEs?

The following are the sub-questions that will assist the researcher in answering the main question above:

- What are the factors that impact the SOEs' inability to implement TETA-funded skills development projects successfully within their organisation?
- Are the current strategies within TETA and the respective SOEs inhibiting the implementation of skills development projects within the respective organisations?
- Are the current TETA systems effective and sufficient to support the implementation and management of projects within SOEs?

The above questions are interrelated within the context of systems thinking and the project management value chain, and the ability of both organisations, i.e. TETA and SOEs, to successfully implement and manage these skills development projects.

1.10. Reliability and trustworthiness

The validity of the research study is said to be a compulsory requirement in any form of research conducted (Taylor, 2013). However, validity and reliability are terms which are synonymous with quantitative research, whilst terms such as credibility and trustworthiness are synonymous with qualitative research (Tobin & Begley, 2004).

It is therefore that in order to ensure the validity of this particular research study, the criteria for the study will be guided by policies and legislation relevant to the context of the phenomenon being explored. This will be done in order to ensure the trustworthiness of the sampling process and to ensure the consistency in the manner in which the data are collected.

Creswell (2011) further suggests that the validity of the study is affected by the researcher's perception of validity in the study and their choice of paradigm assumption. As a result, many researchers have developed their own concepts of validity and have often generated or adopted what they consider to be more appropriate terms, such as quality, rigour and trustworthiness (Seale, 1999).

Therefore, the quality of a research study is related to the generalisability of the results, and thereby to the testing and increasing the validity or trustworthiness of the research study. In contrast, Maxwell (2012) observes that the degree to which an account is believed to be generalisable is a factor that clearly distinguishes quantitative and qualitative research approaches. Although the ability to generalise findings to wider groups and circumstances is one of the most common tests of validity for quantitative research, Patton (2002) states generalisability as one of the criteria for quality case studies, and it depends on the case selected and studied.

To ensure reliability in qualitative research, an examination of trustworthiness is crucial. Seale (1999) states that the 'trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability'. When judging qualitative work, Strauss and Corbin (1990) suggest that the 'usual canons of "good science"… require redefinition in order to fit the realities of qualitative research'.

The reliability of the research study in turn deals with the subjectivity of the researcher, and how the researcher's bias will be limited. In order to conduct the sampling and data collection in this research study, the case study method of enquiry will be used, and the data analysis will be approached by using the grounded theory method of coding. This will be further explained in Chapter 2.

1.11. Ethical considerations

Ethics is defined as the morality of human conduct, and within the context of social research, it refers to moral deliberation, choice and accountability throughout the research process (Mauthner, Birch, Jessop & Miller, 2012).

According to Bryman and Bell (2007), there are various principles related to ethical considerations in dissertations which refer to the researcher's respect for the participants, obtaining their consent prior to the commencement of the study, as well as to protect their privacy and their anonymity. Honest and transparent communication, and accurate representation of information and primary data are critical, and any bias of the researcher must be avoided.

Within this research study, the researcher will manage her bias, and apply these ethical considerations across the sampling process and the data collection, as well as the analysis of the data. Consent from participants will be obtained in writing, and the appropriate approaches to the various stages of this research study will be applied. The ethical aspect will be further addressed in detail within the respective chapters in this dissertation.

1.12. Outline of the dissertation

This dissertation commences with Chapter 1, which has provided an introduction and an overview of the research study conducted.

Chapter 2 provides for the literature reviewed, focusing on the phenomenon under study; namely the challenges experienced in the implementation and management of skills development projects within SOEs, and the factors which contribute to this phenomenon.

Chapter 3 addresses and provides detailed information on the research design and methodology applied during this research study.

Chapter 4 provides detail specific to the fieldwork conducted during this exploratory research study.

Chapter 5 focuses on the data analysis and findings resulting from the study, and detail is provided on each of the specific concepts emerging in detail.

Chapter 6 is the final chapter within this dissertation, which presents the conclusions and their implications on the project management value chain, as well as the recommendations of a proposed framework for the implementation and management of skills development projects within SOEs awarded by TETA. The proposed framework will be based on the literature review and the research outcomes of this research study.

1.13. Conclusions

Chapter 1 provided an introduction to the research study, briefly providing the background and context thereof. The research design and methodology were also outlined, and the theoretical framework, as well as the outline of the dissertation, were briefly introduced.

The next chapter focuses on the literature review conducted in order to understand the nature of SOEs, their environment and the concepts and theories pertaining to the context of this study.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

In Chapter 1 an introduction to this research study was provided, including the design, methods and approaches to be utilised. Chapter 2 will address the literature review conducted within the context of this research study, and in line with the aspects covered in Chapter 1.

A literature review can be defined as a library, or desk-based, method involving the secondary analysis of explicit knowledge, so that abstract concepts of explicit and tacit knowledge are explored (Jesson, Matheson & Lacey, 2011). Similarly, a literature review is the most critical component of academic writing; it is the foundation upon which the work is built, and provides a sound base upon which new research can be founded (Oliver, 2012).

This chapter begins with the review of the literature which focuses on the main research question of this dissertation, and its sub-questions as stated in Chapter 1, section 1.9. Emphasis is therefore placed on SOEs and their performance, governance and legislations, and the role and mandate of SETAs. Areas concerning the skills development and training environment within South Africa, namely SAQA and the NQF, will also be discussed within the context of this research study. TETA's project management value chain, which is directly related to the phenomenon being explored, and the relationship TETA currently has with SOEs in the transport sector context, will also be defined.

It must, however, be noted that not much literature exists on SOEs within the specific context of this research study. The literature available covers project management within public/SOE a globally; however, within the South African context it is rather limited. Therefore, the literature on SOEs within the context of this research study is more of a regulatory nature, consisting of various acts, legislation and policies.

Further to this, the project management framework, as per the Project Management Body of Knowledge (PMBoK, 2008), will be explored to gain an understanding of the principles which generally guide project management and implementation globally within organisations. However, within the context of this research study, more emphasis will be placed on the theoretical framework to be used for this research study within the context of the systems thinking approach and the application of the Da Vinci TIPS Model.

2.2. State-owned enterprises

As the research phenomenon focuses on the implementation and management of skills development projects within SOEs, it would be prudent to gain an understanding of them within the context of South Africa.

SOEs are known by many names around the world; namely, government corporations, government business enterprises, government-linked companies, parastatals, public enterprises, public sector units or enterprises (OECD, 2015). As with the different names for SOEs, there are also varying definitions of SOEs around the world, and according to the OECD Comparative Report on Corporate Governance of State-owned Enterprises, it suggests there are a wider range of legal forms of an SOE, depending on various factors such as (1) the level of government that owns the enterprise (central/federal, state/regional or local); (2) the way in which the enterprise was founded, (3) the position in the public administration hierarchy, (4) the purpose of the SOE, (5) the status of the SOE if it is in the process of being privatised, (6) full, majority or minority ownership by the government, and (7) listing (or not) on a stock exchange.

In order for the South African government to conduct its business, it has various departments, as well as organs of state which are inclusive of SOEs that conduct business on behalf of government. SOEs within the context of the South African government are legally defined by the Public Finance Management Act (PFMA) of 1999 (Treasury, 1999). Section (1) of the PFMA of 1999 defines SOEs as a "National Government Business Enterprise" to be "an entity which (a) is a juristic person under the ownership control of the national executive, (b) has been assigned financial and operational authority to carry on a business activity, (c) as its principal business, provides goods and services in accordance with ordinary business principles, and (d) is financed fully or substantially from sources other than the National Revenue Fund or by way of a tax, levy or statutory money". All national government business enterprises are by definition 'national public entities' as described and referred to in the PFMA, of which some are companies and some are not. It is therefore, for the purposes of this research study, that the above definition as contained in the PFMA of 1999 supersedes any other definition within the South African context.

According to the OECD (2015), the evolution of SOEs in South Africa from the "Apartheid" era of industrialisation, and which was primarily driven by investments, was unsustainable given the inward looking, isolated nature of the Apartheid economy and the contradictions between the needs of a technologically dynamic industrialisation process and the Apartheid policy of low cost, poorly skilled migrant labour. This created skills shortages over time within and across the broader economy of South Africa. Further to this, the OECD (2015) also states that the underlying motivation for the establishment of SOEs by the government was to provide the state with the instruments to enable the building of a diversified industrial economy.

However, during the Apartheid era, SOEs were a significant source of artisans and development of skills for the country as a whole. SAPA (2011) states that in 1975 there were 30 000 registered artisans in South Africa, whereas currently there are only 3 000 registered; this equates to a 90% reduction. The decline in the numbers being trained within SOEs seems to be attributed to the corporatisation of SOEs since 1975; and their focus on turning to profitability and cost cutting, of which training is the first budget to be affected (SAPA, 2011).

The reduction of the numbers being trained appears to be related to the phenomena under study, and the inability of SOEs to manage and implement TETA-funded skills development projects. It also appears though, that the corporatisation of SOEs is not the only reason for the reduction in the numbers of artisans being trained currently, as the current skills development projects are being funded by the TETA, and therefore successful implementation of skills development projects is not solely dependent on SOE training budgets. This appears to also contribute to the continuous skills shortages as stated by Rasool (2011) in section 2.4, as well as the reduction of the number of artisans being trained within SOEs as stated above by SAPA (2011).

2.2.1 Performance of SOEs

The current performance of SOEs as a collective within the context of South Africa seems to be unsatisfactory. According to Gossel (2017), the current economic crisis being experienced within South Africa is directly as a result of the economic mismanagement of the country's SOEs. South Africa is currently in danger of slipping further into this economic crisis, as it finds itself in a recession, and facing further rating downgrades by international ratings agencies. Further to this, Gossel (2017) states that there are indications that the reforming of SOEs would need to go beyond replacing members of their boards, and attention must be given to ensuring greater accountability, financial responsibility, and more efficient management of their performance.

McGregor (2014) states that the main issues of poor performance identified within SOEs are related to corporate governance incompetence, poor selection of the executives and boards, inadequate structures and processes, high turnover of key staff; and lastly, the lack of moral norms within the respective organisations. This appears to influence the phenomenon under study, in that leadership and strategic alignment within the management and implementation of skills development projects appears to be lacking.

2.2.2 Governance within SOEs

Further to the current poor performance of SOEs as stated above, governance is also an important component within SOEs as organs of state, and which has been directly associated with the public sector with a political need to satisfy all stakeholders by demonstrating accountability and transparency, whilst effectively implementing strategies and policies on behalf of government (Crawford, 2009). Further to this, Thomas (2008) maintains that the development and maintenance of governance and service delivery capability through projects and programs requires investment by these organisations, and those responsible for project management and implementation within these organisations are regularly called upon to justify this investment leading to significant interest in providing "evidence of the value organisations recognise when project management is appropriately implemented". It therefore appears to the researcher that poor performance, as discussed in section 2.1.1, appears to be related to the lack of governance within SOEs as stated by McGregor (2014).

Thomas (2008) further argues that the value of investment in project management capability will be dependent upon the fit between the nature of the project management implementation and its context. Within the context of this research study, project management within SOEs, as well as TETA, appear to be critical in its ability to deliver a return on investment on the skills development projects to its stakeholders in an efficient and effective manner, and meeting the objectives of the NSDS.

Crawford (2009) also further states that the importance of project and program management capabilities in the public sector has been recognised in government initiatives in various countries around the world, and that in most cases they are associated with increasing the public's scrutiny and need for assurance of the value derived from public expenditure. This can also be directly related to the research phenomena within this research study; the ability or inability of SOEs to implement and manage their skills development projects, and which impacts TETA as an agency of the state to disburse the associated project funding and achieve the required return on investment.

Further to this, Crawford (2009) states that the significant initiatives of governments around the world are to provide encouragement and support for improved project management, which indicates the expectation of value in the public sector. The stated expectation of the value of project management to government is its contribution to effective governance, including transparency and accountability, efficiency and effective use of resources, improved implementation of policies and change, and maintenance of public confidence. This in fact therefore supports the notion that the lack of governance within SOEs leads to their poor performance, as stated previously by McGregor (2014), and therefore it appears that project management within the context of this research study, is not being implemented effectively by SOEs.

2.2.3 Skills development and job creation by SOEs

The poor economic environment over the last few years within South Africa, as well as the Apartheid legacy which lead to the majority of the citizenry to poverty, inequality and poor skilled labour within the country, lead to the South African Government developing and publishing the National Development Plan (NDP) (Presidency, 2013). In order to address the legacies of South Africa pre-1994, the focus of the government over the next few years was to implement the NDP, and given the underperformance of many SOEs as discussed in section 2.2.1, 'a radical transformation' of SOEs could be the way to improve their performance. Improving the corporate governance of SOEs will also assist government in implementing the NDP (Review, 2017).

Furthermore, SOEs are also seen as significant contributors to job creation and employment, due to the amount of work they undertake on behalf of the state (Chavez & Torres, 2014). They are also viewed as significant contributors to the upliftment of living and social conditions of a country's citizenry (Fourie, 2001). It is also further argued by various researchers that SOEs can be considered important elements for development in many economies of the world (Buge, Egeland, Kowlaski & Sztajerowska, 2013).

According to the SOE Review (Review, 2017), SOEs play a crucial role in providing a country's economic infrastructure. SOEs provide vital services and products, as well as providing employment and capacity building. Successful SOEs can assist in contributing to South Africa's competitive advantage, by improving their performance and implementing good corporate governance.

Good corporate governance provides the regulatory framework for acceptable practice, strategic direction, and sound business judgement. However, if one refers to the literature reviewed in section 2.2.1, as well as within this section, it would appear that the SOEs within the South African context are in direct contradiction to this, as the SOEs have been identified as a contributing factor to the country's economic decline (Gossel, 2017).

A report which was presented to the Standing Committee on Appropriations within South Africa's Parliament regarding SOEs (PMG, 2013), states that SOEs are a platform for sustainable human capital development and a catalyst for scarce skills within the country. This is directly related to the phenomenon within this research study, and provides sufficient indication that SOEs within South Africa should be playing a more significant and strategic role in developing skills and creating jobs within the economy of South Africa as discussed above, which currently does not seem to be the case within the context of this research study. The inability of SOEs to implement the TETA-funded skills development projects to address the skills shortages within their organisations and economic sectors seems to contradict the notion that they are a platform for human capital development, as stated in the above report.

The Deputy Minister of Economic Development presented a report to the South African Parliamentary Monitoring Group on the progress made thus far on the implementation of the social accords in September 2014 (of which the National Skills Accord is one component of the Social Accord), which states that work placements or internships had been provided for 8 025 students from Further Education and Training (FET) colleges since 2012. Internships had been provided to 14 287 third-year university of technology students, and Eskom had provided 5 078 trainees and work placements. State-owned companies (SOCs) had contributed R8.8 million to the project (PMG, Parliamentary Monitoring Group, 2014). It therefore appears from this report that the number of learners and the amount of funding being processed through SOEs within the context of skills development is significantly low compared with other institutions cited in the report. This could be attributed to the phenomenon currently under study.

2.2.4 Legislation affecting state-owned enterprises

The legislative environment, and legislation which affects SOEs (aside from those listed under skills development in section 2.4), and within the context of this research study, are related to the procurement of training providers or institutions for the implementation of their skills development projects. The main section within the legislation that affects the procurement of providers within the SOEs, and which is directly related to the phenomenon under study, is that of the supply chain management framework contained within the PFMA (Treasury, 1999).

The starting point of the supply chain management framework starts with the Constitution of the Republic of South Africa, section 217 specifically (President, 1996). It states that when an organ of state wishes to procure goods and services, it must do so in a manner that is fair, transparent, and cost effective. Therefore, the framework for procuring goods and services by an organ of the state is contained within the PFMA (Treasury, 1999) as previously stated, and is also directly related to the phenomenon under study.

The figure below is an illustration of the legislation which affects SOEs within the context of this research study.

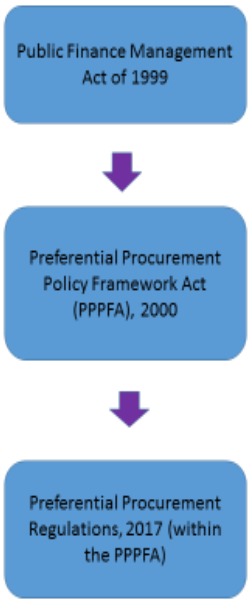

Figure 2-1: Legislation that affects SOEs within the context of this research study

2.3. Sector Education Training Authorities (SETAs)

In order for the DHET to deliver on their mandate, and in line with the NSDS to be discussed in section 2.4.1, the SETAs, of which there are currently 21, were effectively established by the Skills Development Act 97 of 1998 on 1 April 2000 (DHET, 1998). SETAs are effectively responsible for researching and identifying the scarce and critical skills and occupations within their respective economic sectors, the funding and implementation of those skills, development and training interventions to address the scarce skills identified, and those published within the respective Sector Skills Plans (SSP), and which are aligned with the NSDS III.

The implementation of skills development and training interventions is funded by SETAs by means of projects awarded. This is done in partnership with levy-paying stakeholders by means of discretionary grant projects. Levy paying stakeholders are required by the Skills Development Levies Act of 1998 (DHET, 1998) to contribute a percentage of their annual payroll as legislated to the South

African Revenue Services (SARS), which in turn disburses the levies to the DHET, then onward to the SETAs for further implementation of the NSDS III within the framework of the Skills Development Act, 97 of 1998. The distribution of the skills development levies paid by stakeholders is illustrated in the figure in section 1.1 of Chapter 1.

The SETAs' mandates are contained in, and enforced by, the Skills Development Act 97 of 1998 (DHET, 1998), and guided by the NSDS III (DHET, 2009) with specific emphasis on the strategic goals and objectives as defined therein. Essentially, SETAs' main objective is to implement and achieve the strategic goals and objectives as contained and stipulated within the NSDS III.

In order for SETAs to meet their strategic objectives, and those contained within the NSDS III, they implement their discretionary grant policies and criteria against which SOEs are required to apply to SETAs for their project funding. One of the key aspects measured by SETAs when assessing applications received from SOEs for project funding is that the funding application addresses the scarce and critical skills, as listed and published in the SSP of the respective SETAs.

2.4. Skills development and training in South Africa

The core of South Africa's skills development policies emanates as a result of the country's "Apartheid" regime, which implemented a very disintegrated education system, and which led to the establishment of the "Bantu" education system for the majority of the country's population. Simultaneously, South Africa's economy was extremely isolated during the period of Apartheid, also as discussed in section 2.2, and resulted in massive economic transformation post-1994 when the democratically elected government came into place, which required significant transformation of industries to become economically competitive (Daniels, 2007). Further to this, Daniels (2007) states that it required industries to reengineer their technologies and to employ the required skills to ensure competitiveness and revise their production lines for international markets.

However, Erasmus and Breier (2009) further argues that South Africa's skills shortage is widely regarded as a key factor preventing the achievement of South Africa's economic growth rate, and that there is some dispute as to the nature and the extent of the skills shortages, given that the country has a high level of unemployed graduates. The South African government has been addressing the challenge of skills shortages and has given it considerable attention, as previously mention in section 2.2.3. The concern, however, is that skills shortages are still a problem in South Africa currently. The proliferation of new legislation, such as employment equity legislation, aims to develop the skills and employability of all citizens in order to alleviate poverty, address historical inequalities, create employment opportunities, and improve the competitiveness of the national economy (Rasool & Botha, 2011).

The OECD (2015) also states that skills have the potential to transform lives and drive economies. However, in many countries, imbalances between the supply and demand for skills leads to significant skill mismatches and shortages, with as many as three in five workers in the OECD employed in jobs that do not make the best use of their skills. At the same time, a large number of

employers report hiring problems due to skill shortages. It therefore appears that the mismatch of skills could potentially contribute to the high number of unemployed graduates in South Africa as stated by Erasmus and Breier (2009).

Further to this, Rasool and Botha (2011) argues that the inability of the South African education and training system to meet the growing demands of local industries for skilled graduates aggravates the situation. The rising aspirations of the majority of the population further compounds the demand-driven needs of the South African labour market. Despite a number of education reforms, such as changes to the school curricula, the country still faces considerable skills shortages (Rasool and Botha, 2011).

Within the environment portrayed above, the industries (including SOEs) in partnership with SETAs and various other role players, are tasked to address the skills challenges currently facing the country by way of implementing skills development projects within the context of the NSDS as the strategic driver. This is further discussed in section 2.4.1. This is all related to the phenomena within this research study.

The education and training environment within South Africa is regulated and occurs within a vast framework of government strategies, SETA policies, industry and skills compliance requirements, and legislation. The National Skills Accord of South Africa (EDD, 2009), and the Human Resources Development Strategy of South Africa (Development, 2010), are two such significant strategies which drive the overall skills development and training environment within the context of South Africa.

There are various acts, legislation, and policies which govern the implementation of skills development within South Africa, and they are illustrated in the following figure. This list is not finite.

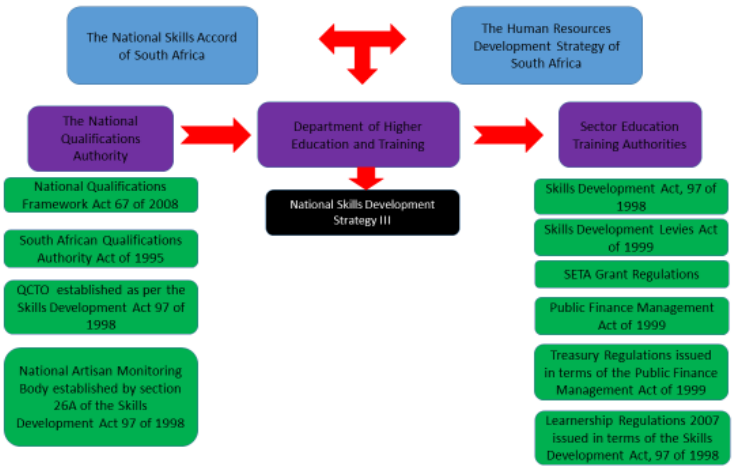

Figure 2-2: South African legislation related to the skills development environment

2.4.1 South African Qualifications Authority and the National Qualifications Framework

In order for the South African government to address the legacy of the past, and to address the unskilled labour force which emanated from the "Bantu" education system, and to alleviate the inequalities and poverty of the majority of the population as previously discussed, the establishment of the National Qualifications Framework (NQF), as the overarching framework that guides all education and training within the context of South Africa was established in terms of the National Qualifications Framework Act 67 of 2008.

The NQF was designed on the one hand to contribute to the drive for international competitiveness, and on the other hand to democratise and transform an elitist, discriminatory, and divided education system (Allias, 2003). Further to this, Allias (2003) states that, "Education was for a long time a major source of discontent in apartheid South Africa, and was often a rallying point in the broader struggle against it". The establishment of an integrated framework was thus meant to remove the disparities of esteem, and give value to learning wherever it may occur, and aid progression within education and training (Blom, 2007).

The skills development projects being implemented by SOEs and funded by TETA within the phenomena under study are directly related to the skills and training interventions as developed and registered within the broader framework of the NQF, and hence the emphasis on the implementation of these skills projects aligned with the NSDS as the main driver for addressing the disparities of the past. The development of the skills interventions and/or programs to address the scarce and critical skills as published in the SSP as previously discussed in section 2.3, is facilitated within the NQF under the authority of SAQA.

SAQA plays a significant role within the education and training environment within South Africa. SAQA is the custodian of the NQF, as per the National Qualifications Framework Act 67 of 2008 (DHET, 2008), for all the qualifications developed; including those occupational and trade qualifications which are developed and registered by SETAs through the Quality Council for Trades & Occupations (QCTO). SAQA is responsible for facilitating this integrated framework previously referred to, and as stated, by Blom (2007).

The quality assurance functions within the NQF are unique in that it has a fundamental point of departure; that being the integrated approach to education and training to ensure the parity of esteem between "academic education "and "vocational training" (Keevy, 2005). SETAs are delegated the quality assurance functions by SAQA and the QCTO. The delegation of authority to these two statutory bodies is enforced through the Skills Development Act of 1998 (DHET, 1998).

When SETAs develop skills and training interventions, they are developed in collaboration with, and according to, industry standards and legislative requirements within the NQF to ensure that learners are provided with relevant training and skills to address the vocational and academic scarce and critical skills shortages within the economic sectors in an integrated manner, as previously stated by Keevy (2005), as he refers to the integrated approach of education. This is also an attempt to

address the skills mismatch and the education system's inability to address the skills required by industries, as indicated by Rasool and Botha (2011).

The above integrated structures referred to above are implemented in support of the framework of the NSDS which will be discussed next.

2.4.2 The National Skills Development Strategy (NSDS)

The new government of South Africa post-1994 was faced with the challenge of developing skills for the new democracy and introduced the first NSDS in 2001, the second NSDS was implemented from 2005 to 2010, and the current NSDS is being implemented for the period 2010 to date. NSDS I placed the emphasis on equality and cultivating lifelong learning within the workplace, NSDS II again placed emphasis on equity and quality training within the workplace, and lastly NSDS III places the emphasis on institutional learning linked to occupationally-directed learning programs (Portal, 2011).

The NSDS III (DHET, 2009), is currently one of the enabling strategies for skills development within South Africa being implemented by the DHET nationally. The vehicles for implementation of this particular strategy are the 21 SETAs, of which TETA is the SETA responsible for the entire transport sector within South Africa. It is also directly related to the phenomenon being researched. SETAs were established by the Skills Development Act, Act 97 of 1998 (DHET, 1998) in order to facilitate the implementation of the various NSDS.

The NSDS III (DHET, 2009) is fundamentally the blueprint for vocational and occupational skills development and training within South Africa, focusing on the development of required skills across all economic sectors of the country. It has specific goals and objectives to be achieved by SETAs in collaboration with levy-paying stakeholders within the private sector, SOEs, government departments, community-based organisations and non-government organisations. The figure below illustrates the goals as contained within the NSDS III.

Figure 2-3: Goals to be achieved by TETA within the NSDS III (DHET, 2009)

The main objectives of the NSDSy III is to ensure increased access to training and skills development opportunities, as well as achieve fundamental transformation of inequities linked to class, race, age, gender and disabilities within societies (DHET, 2009). SETAs have a very good understanding of labour market issues within their respective economic sectors, and are therefore well placed to develop the skills and interventions required.

The research and development of the sector skills plan, which identifies the scarce and critical skills within the sector is a significant role the SETAs have, as it informs and guides the development of the required curriculum for the delivery of the training required, as well as the facilitation of the quality assurance of the associated training provision as delegated to SETAs by the South African Qualifications Authority (SAQA) Act of 1995 (President, 1995), and the Quality Council for Trades and Occupations (QCTO) as established by the Skills Development Act, 97 of 1998 (DHET, 1998).

Further to the above NSDS discussed, there is the White Paper for Post-School Education and Training, as published by DHET. The White Paper (DHET, 2013) outlines a framework which defines the government's priorities for developing South Africa's higher education and training system, and which enables government to develop its future strategies towards 2030. Its vision is for the development of an integrated system of post-school education and training, with all institutions contributing towards a coherent system. These institutions include the colleges, universities, SETAs, the NSF, and advisory, regulatory and quality assurance bodies such as SAQA and the Quality Councils.

2.5. Project management

SETAs today have generally evolved into project-driven organisations to sustain the management and implementation of discretionary grant projects aligned with the achievement of the NSDS III (DHET, 2009). Discretionary grants are allocated to the implementation of skills development interventions in the form of a project. Various stakeholders are involved in this process, including training providers, learners, levy paying companies, SOEs and SETAs.

According to Kaulio (2008), project management has become one of the most critical organisational activities within modern organisations today, as the momentum of an organisation's projects determines the future trajectory of the organisation. He further argues that the reason for this is that organisations across a multitude of industries organise their work to a large extent into projects and programs. These organisations are also referred to as project-based organisations or project-orientated organisations. Added to this, Aubrey, Hobbs and Thuillier (2007) state that innovation is essential to the survival of organisations; this means that the largest part of their strategy is to develop new products, services and processes; and therefore projects have become more important in the quest to reach ambitious strategic objectives.

The Project Management Body of Knowledge (PMBoK, 2008) defines project management as the,

> *"… application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project Management is accomplished through the application and integration of project management processes of initiating, planning, executing, monitoring and controlling, and closing".*

The Project Management Institute (PMI) sets the global standards which provide the guidelines, rules and characteristics of project management. Project management is illustrated in the figure below.

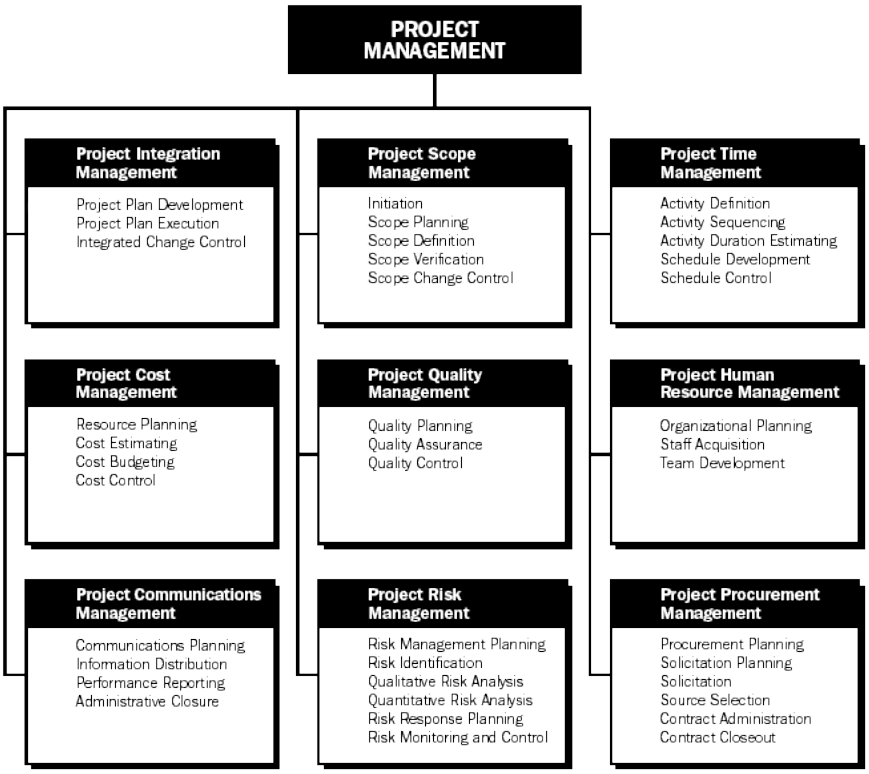

Figure 2-4: Project management overview (PMBoK, 2008)

Project management can also further be described as,

> *"… a concept which is based on cross functional teams that are assembled to achieve a specific purpose, usually in a specific time and within a limited budget. These teams are temporary; once they achieve their objective, they are disbanded, and team members assume traditional work or are assigned to other projects" (Englund & Graham, 2004).*

According to the Chartered Body for the Projects' Profession, the Association for Project Management (APM), project management can further be defined as the application of processes, methods, knowledge, skills and experience to achieve the project objectives (Management, 2017).

The various components or 'systems' which affect the value chains within project management within the context of this research study, can also be identified as follows:

- Leadership and Management.
- Governance and Policies.
- Systems and Processes.
- Resources – Human & Financial

The research study will be undertaken within the confines of the above listed project management value chain components within TETA and levy-paying transport-related SOEs.

The figure below illustrates the process level of the project management value chain of TETA:

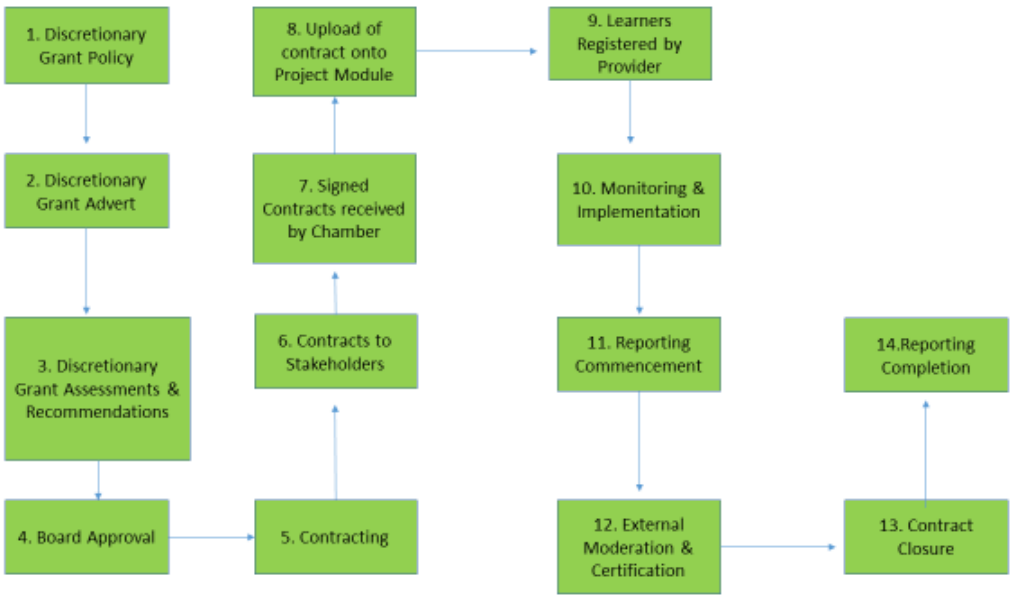

Figure 2-5: TETA project management value chain (process level)

In order for TETA to facilitate project management within the organisation, various policies and procedures have been developed within the framework of the various pieces of legislation referred to within the skills development context. This is to ensure compliance with legislative requirements. The figure below illustrates the application of the relevant policies and procedures across and within the TETA project management value chain.

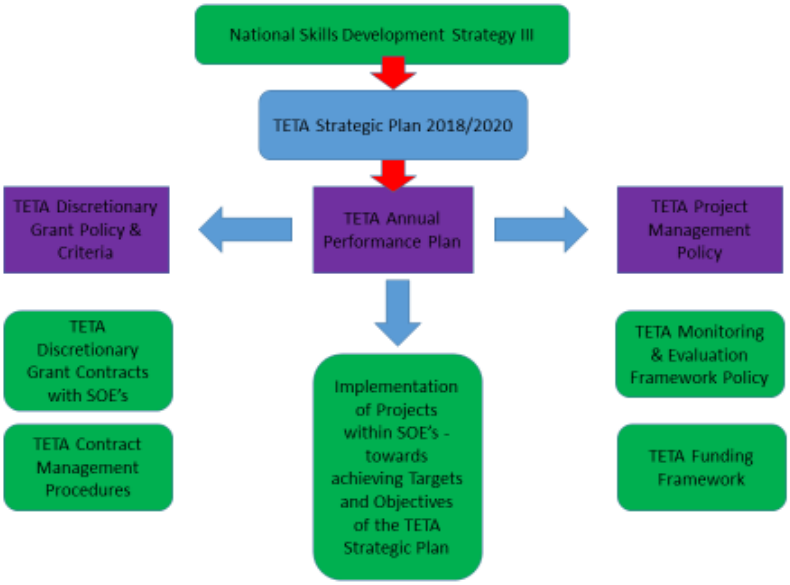

Figure 2-6: Policies and procedures within TETA to ensure legislative compliance of projects

2.5.1 Planning within project management

Project planning essentially is the foundation to a project. The PMBoK (2008) states that the project management plan is the primary source of information pertaining to how a project is planned, implemented, monitored and concluded.

Project management requires the development of a plan that outlines how the project will be managed. Section 4.2 within the project management body of knowledge guidelines (PMBoK, 2008), states that the project management plan fulfils this purpose. Although it includes any and all items that define the management of the project, there are certain standard items. These are the components that provide the core, regardless of industry or type of project: (1) Scope Statement, (2) Critical Success Factors, (3) Deliverables, (4) Work Breakdown Structure, (5) Schedule, (6) Budget, (7) Quality, (8) Human Resources Plan, (9) Stakeholder List, (10) Communication, (11) Risk Register, and (12) Procurement Plan.

According to Carmichael (2006), planning concerns itself with the "means to an end product" problem. Planning establishes how and what work will be carried out, in what order and when, and with what resources (type, quantity or number). Melton (2011) further argues that the root cause for the lack of project success is the lack of a robust project development plan.

2.5.2 Implementation of projects

Further to project planning, Slevin and Pinto (1986) state that the project management process is a very complex one, and requires simultaneous attention to a broad variety of human, budgetary, and

technical variables. While numerous models have been developed providing technical support for the project manager (such as critical path, modelling, budgetary spread sheets, activity flow charts, etc.), a great need exists for a model that addresses the human and managerial aspects of successful project management. The project manager needs to know what factors are critical to successful project implementation.

The following 10 factors, according to Slevin and Pinto (1986), and as illustrated below, are critical to successful project implementation: (1) Communication, (2) Project Mission, (3) Top Management Support, (4) Project Planning, (5) Client Consultation, (6) Personnel, (7) Technical Tasks, (8) Client Acceptance, (10) Monitoring and Feedback, (10) Trouble Shooting.

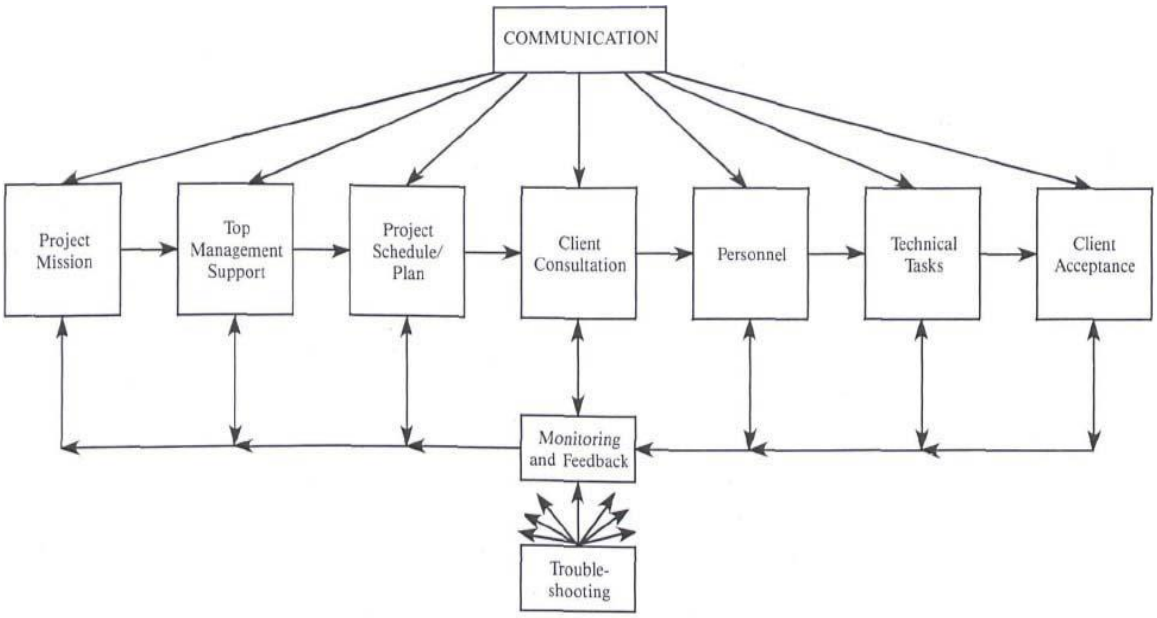

Figure 2-7: 10 factors critical to project implementation (Slevin & Pinto, 1986)

Pinto and Pinto (1991) argue that there is a need during the project implementation phase for cross-functional cooperation; this stems from the complex functional interdependencies which exist within organisations. Project teams often include individuals from various departments within the organisation whose functional areas are interrelated. Pinto and Pinto (1991) further define cross-functional cooperation as the quality of the different functional areas working together for the accomplishment of organisational tasks.

Within the context of the TETA project management value chain, the management and implementation of projects are the two main components which will be focused on during this research study; both within TETA and the SOEs. The initiation and planning phases of the project management value chain within this context are pre-empted by the NSDS III (DHET, 2009) which sets out the project types and learner targets to be implemented and achieved by the SETAs. The Skills Development Levies Act of 1999 provides the financial resources, through the SETA grant regulations

for the management and implementation of these discretionary grant projects by the various SETAs in partnership with SOEs.

2.5.3 Identification and management of risks

Project risk is defined by the Project Management Institute (PMI) as, "an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives." Project risk management remains a relatively undeveloped discipline, distinct from the risk management used by operational, financial and underwriters' risk management (PMBoK, 2008). Further to this, there are two basic components of risk:

The formula for risk is: Risk = Probability x Impact

Probability: The likelihood of a risk event happening

Impact: The consequences of the event

During the lifespan of a project, unexpected events will occur in projects that may result in either a positive or a negative outcome that generally would be a deviation from the project plan. Positive outcomes can be viewed as opportunities, whilst negative outcomes could generate a loss. Williams (1995) states that risk focuses on the avoidance of loss from unexpected events.

Ward and Chapman (2003) further argue that all current risk management processes induce a restricted focus on the management of uncertainty. In a project context these aspects of uncertainty can be present throughout a project's life cycle, but are particularly evident in the conception, design, planning, and allocation stages of a project. The figure below provides an overview of project risk management as defined by PMBoK (2008):

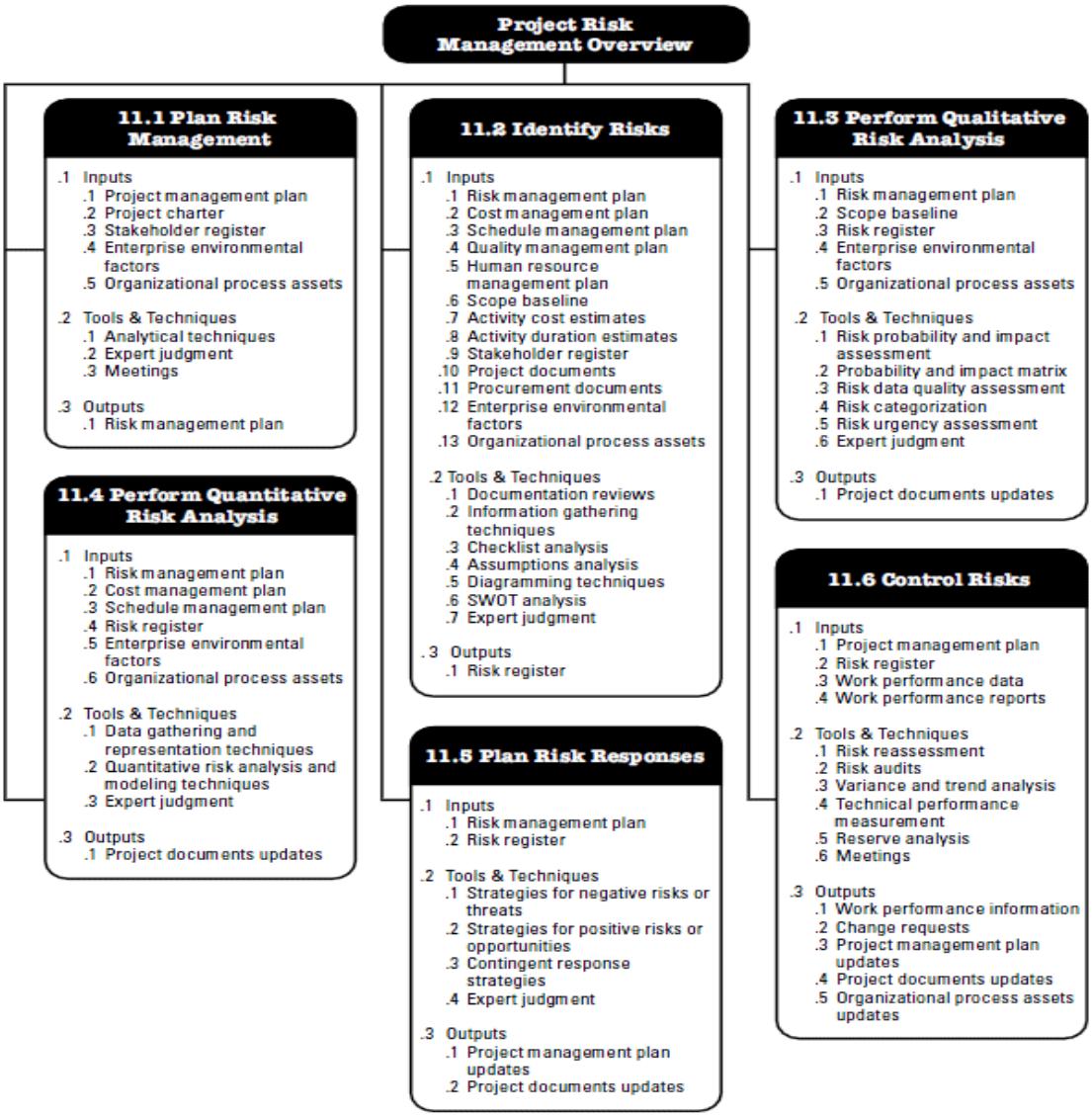

Figure 2-8: Project management risk overview (PMBoK, 2008)

2.5.4 Leadership in project management

Overall project leadership can be categorised into two components, (1) management and (2) leadership. Management deals with the planning, budgeting, controlling and structuring of a project (i.e. to manage complexity), and in contrast, leadership refers to a process of directing, visioning and motivating, and the development of individuals (i.e. management of change) (Kaulio, 2008). Kaulio (2008) also states that the work of project leaders can be described as a combination of managerial roles and leadership roles, as well as internal and external roles; all with complex relationships.

Pinto (1998) recognises the characteristics of a project leader to be (1) credible, (2) creative problem solving, (3) tolerance for ambiguity, (4) flexible management style, and (5) effective communication.

He further identifies the skills required by project managers as (1) technical (budgeting and planning), (2) administrative, (3) leadership skills (visioning and example setting).

According to Turner and Muller (2006), there are six schools of leadership discussed within project management literature to date. They are as follows: (1) trait, style and contingency schools, (2) charismatic school, (3) competence school, (4) emotional intelligence school. Leadership is widely considered to be a critical aspect of project based organising Keegan and Den Hartog (2004) therefore state that there are several reasons to suggest that transformational leadership is of particular relevance within the context of project management.

Further to this, Keegan and Den Hartog (2004) argue that transformational leadership is associated with strong personal identification with a leader, the creation of an organisation's shared vision, and a relationship between leader and followers. Bass (1990) further describes transformational leaders as inspiring, energising, and intellectually stimulating to their employees. He further argues that through training, managers can learn the techniques and obtain the qualities they need to become transformational leaders. Dulewicz and Higgs (2003) maintain that certain leadership styles are not appropriate on all projects, but different types of leadership styles are appropriate on different types of projects.

2.6. Theoretical framework – systems thinking approach

The systems thinking approach will be used as the lens through which the research study of the phenomenon will be conducted. This approach will assist in the study of the components within the phenomenon, and to identify the interrelations in the various functions of the system. TETA's project management value chain will be viewed through this lens as a "system" made up of various components.

The rationale for applying this approach is that according to Dyehouse, Bennett, Harbor, Childress and Dark (2009), logic models are based on linear relationships between program resources, activities, and outcomes; much the same as the general project management approach as stipulated by PMBoK (2008). The linear nature of the logic model makes it difficult to capture the complex relationships within larger, multifaceted programs (Dyehouse *et al.,* 2009). Hence, this research study will explore the TETA project management value chain by applying the systems thinking approach in order to explore the interrelationships within the TETA project management value chain and to understand the cause of the phenomenon under study.

In order to explore and understand the interrelationships within the "system" of the TETA project management value chain, the key elements of the Da Vinci TIPS model will be applied; the key elements being technology, innovation, people and systems. It would therefore be critical to analyse and explore each of these elements within the TETA project management value chain in order to understand the interrelationships within the "system" that impact on the management and implementation of discretionary grant projects within SOEs in support of the NSDS (DHET, 2009).

Here is a brief summary of each element within the TIPS Model:

2.6.1 Technology

White and Bruton (2011) define the management of technology as the linking of different disciplines to plan, develop, implement, monitor, and control technological capabilities to shape and accomplish the strategic objectives of an organisation. This definition clearly recognises the planning and implementation processes, while recognising the role of evaluation and control that many other definitions have omitted.

2.6.2 Innovation

Tidd, Bessant & Pavitt (2001) maintain that innovation can be defined as a process of turning opportunity into new ideas and of putting these ideas into widely used practice within an organisation. White and Bruton (2011) further state that they prefer the definition of innovation by Rubenstein, who defined innovation as "the process whereby new and improved products, processes, materials, and services are developed and transferred to a plant and/or market where they are appropriate."

Afuah (2009) states that when an organisation makes the decision to innovate, it is critical that the organisation's overall strategy is taken into account. There has to be some form of organisational strategy behind the decision to innovate. How the organisation makes this decision to innovate, and which strategy to use, depends on the impact of the intended innovation on the organisation's operational value chain and the organisation's service delivery to their stakeholders. Afuah (2009) refers to this as "competitive consequence". Further to this, Von Hippel (1986) states that relationships with stakeholders are the most important factors affecting innovation strategies of organisations, and input and feedback from stakeholders can lead to unique innovations within organisations.

2.6.3 People

The development of a people management strategy and framework within an organisation would underpin the application of the Da Vinci TIPS Model, as it focuses on the human aspect of the organisation. The 5-disciplines of creating a learning organisation, as developed by Senge (1990), provide the foundation to transform an organisation into a learning organisation, which would encompass and support the remaining components of the Da Vinci TIPS Model. The figure below provides an illustration of the TETA people management framework developed.

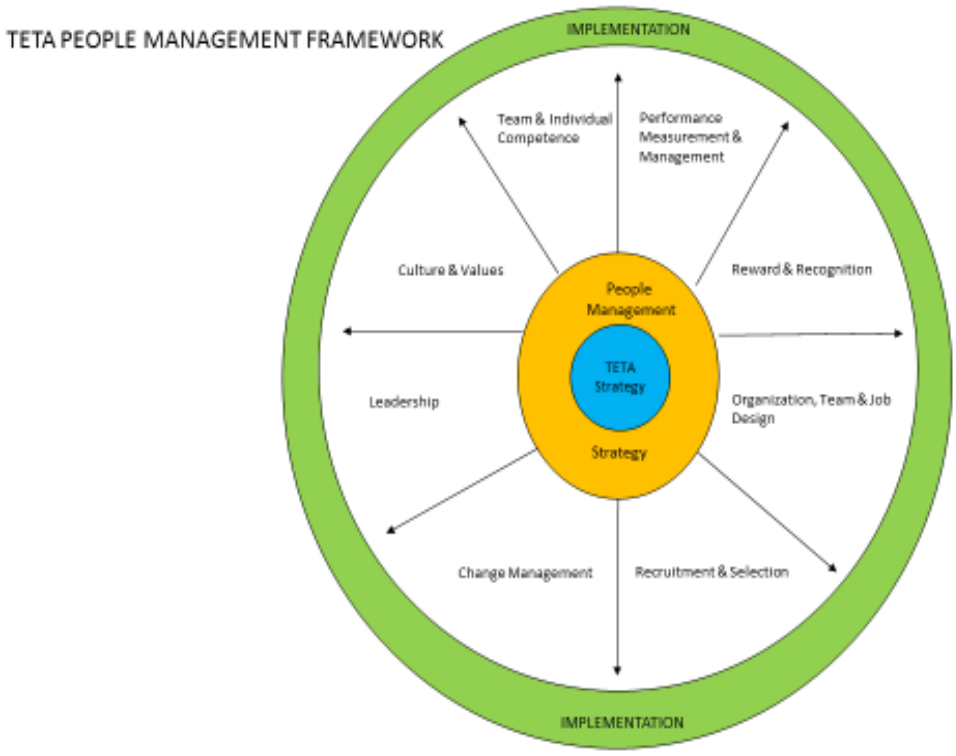

Figure 2-9: TETA people management framework

Senge (1990) defines a learning organisation as one that discovers how to tap people's commitment and capacity to learn at all levels, where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together. Argyris (1995) further defines organisational learning as the detection and correction of error, whereas Dodgson (1993) states that organisational learning is the way in which organisations build, supplement, and organise knowledge and routines around their activities and within their cultures, and adapt and develop organisational efficiencies by improving the use of the broader skills of their workforces. The five disciplines of a learning organisation, as defined by Senge (1990), are briefly explained:

Shared Vision - This component implies that all employees within an organisation need to have a shared vision of where the organisation needs to go, as opposed to a vision statement where management determines where the organisation should be going. It is only when all employees embrace a shared vision, will they participate in the improvement processes of the organisation in order for it to accomplish this shared vision. Senge (1990) describes a shared vision as one where employees are not playing according to the rules of the game, but rather that employees feel responsible for the game.

Mental Models - The first step would be to have employees adjust or change their mental models, and reflect on their own behaviour and their own beliefs. According to this, one of the mental

models within any organisation is that of the official hierarchy within that organisation. An important value identified by Senge (1990) is one of openness and honesty, and steering away from playing "power games".

Team Learning - This component has two aspects; (1) when teams work effectively together it leads to individuals achieving results they would not have been able to achieve alone, and (2) individuals within teams tend to learn more and faster than without a team. This will require employees within the organisation to change their mental models and become more open to learning from their team colleagues.

Personal Mastery - This component refers to the strength of an individual employee's ability to be proactive and to keep on learning to achieve those results which are important to them. There are two factors in this component which are important, (1) identifying and recognising what is important to them, and (2) recognising what the current reality of the organisation is.

Systems Thinking - According to Senge (1990), systems thinking is the fifth discipline that integrates the technology, innovation, and people aspects of the model. Systems thinking is a framework utilised within an organisation to analyse patterns within inter-relationships that underlie complex situations within the organisation as a whole, rather than simplistic linear cause-effect chains which are mostly inaccurate. An organisation is viewed as a living organism, and it therefore should be managed as one. Systems thinking allows teams within an organisation to analyse and identify hidden underlying issues, influences and intended/unintended consequences of plans, programs and to gain a deeper understanding of the interrelationships and interconnectedness behind changing systems and processes within an organisation.

A system can be defined as an entity, which is a coherent whole, such that a boundary is perceived around it, in order to distinguish its external and internal elements and to identify the input and output relating to and emerging from the entity (Ng, Maull & Yip, 2009). A systems theory is therefore a theoretical perspective that analyses a phenomenon viewed as a whole, and not simply as the sum of elementary parts. Systems theory focuses on the interrelationships between the elementary parts in order to understand the entity's organisation (Mele, Pels & Polese, 2010). Cabrera, Colosi and Lobdell (2008) further emphasise that the construct of systems thinking is an understanding of the patterns that connect various systems, ideas, methods, theories and models.

Scott and Davis (2007) further differentiate between an "open system" and a "closed system". Open systems can be defined as organisations that are congeries of interdependent flows and activities, linking shifting coalitions of participants embedded in wider materials, resources and institutional environments. Ackoff (1991) defines a closed system as one which has no environment and which is isolated. Therefore, a closed system is one which is conceptualised so that it has absolutely no interaction with any external elements which are not contained within itself.

The figure below illustrates the organisational, transactional and contextual environment of the TETA project management value chain as a "system" within the organisation.

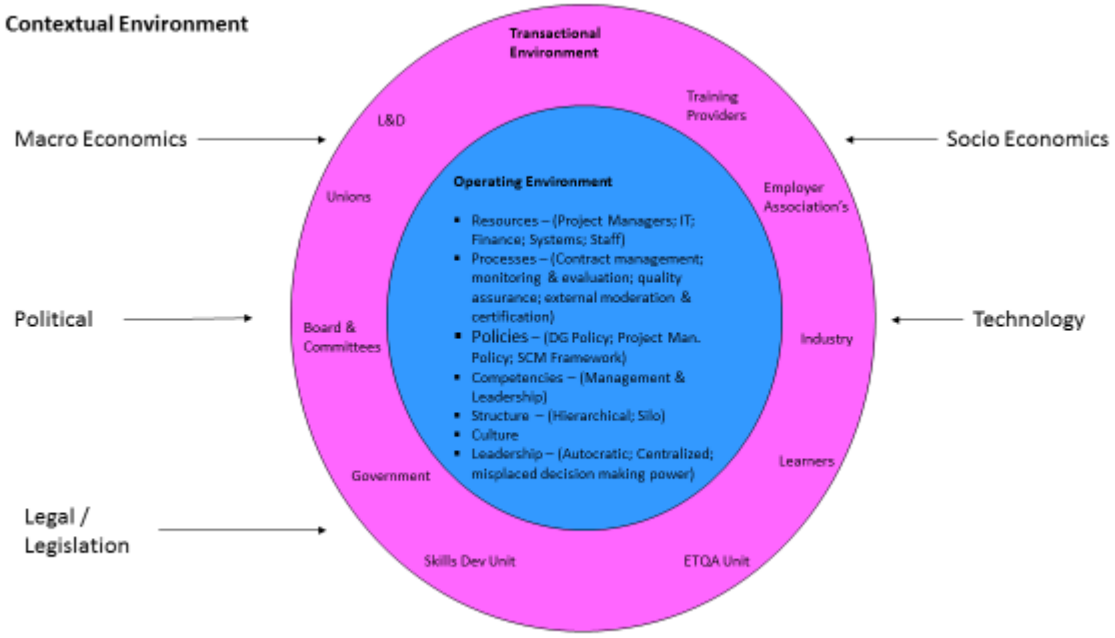

Figure 2-10: TETA project management value chain - a systems analysis

Companies and organisations traditionally will only affect changes in order to achieve a specific milestone at a time. Implementing change within an organisation is normally as a reaction to a challenge, and often is not sufficient within the context of a continuously changing world to become competitive and to maintain a competitive edge. One significant challenge many organisational leaders face today is the ability to create and lead an organisation that is fluid and adaptive to their ever-changing environment. This type of an organisation can be referred to as a fractal like organisation (Fractal.org, 2017).

Systems thinking has been described as a language for conversing about the complex, interdependent issues faced by organisations (Lannon, 2017). Within this framework, causal loop diagrams provide a language for articulating our understanding of the dynamic, interconnected nature of our world. We can think of them as sentences which are constructed by linking together key variables and indicating the causal relationships between them. By stringing together several loops, the researcher can create a coherent story about a particular phenomenon (Kim, 1992).

Further to the above, causal loop diagrams, based on a systems thinking approach, can better capture a multidimensional, layered program model while providing a more complete understanding of the relationship between program elements, which enables evaluators to examine influences and dependencies between and within program components.

The figure below illustrates, in a causal loop diagram, the current interrelations between the operational components of the systems analysis conducted on the TETA project management value chain which is directly related to the disbursement of the associated project funding to SOEs.

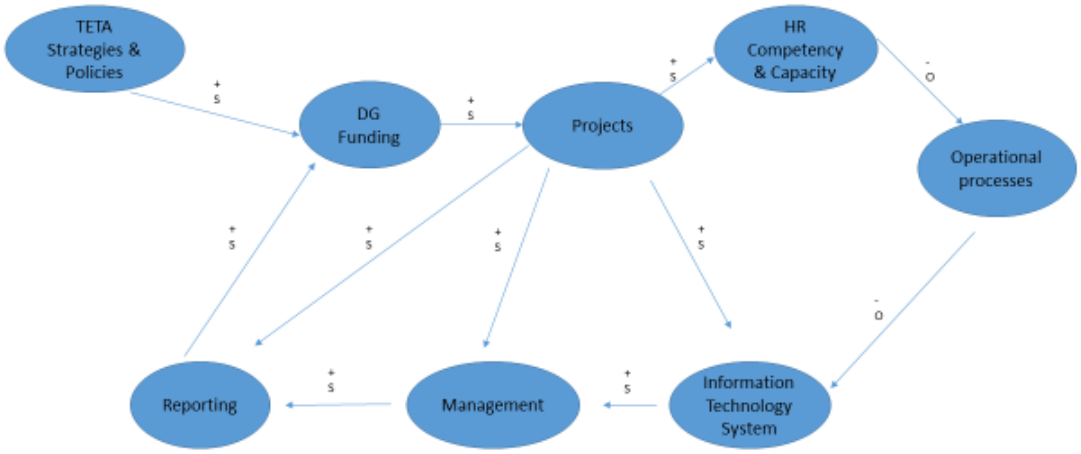

Figure 2-11: The causal loop of the TETA Project Management Value chain "as is" state

The purpose and the outcome of this research study is to develop a framework for TETA, within which the organisation will be able to manage and implement projects within SOEs being funded, and within the context of the TETA project management value chain. The causal loop diagram to be developed for this required "ideal state" of the project management value chain will be based on the conclusions reached from the study and the final recommendations made.

2.7. Conclusion

This chapter provided the views of various scholars pertaining to SOEs, which was found to be very limited within the context of this research study. Literature on project management from a global perspective was reviewed to gain an understanding of the global norms and standards for managing and implementing projects within organisations, and emphasis was placed on the literature regarding systems thinking, which has a multitude of scholarly views which the researcher found very helpful.

The next chapter, Chapter 3, will address the research design and methodology to be applied to this research study in more detail.

CHAPTER 3. RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

The previous chapter focused on the literature review conducted on the main aspects within the context of this research study, and which form the foundation thereof. Chapter 3 aims to define and outline the qualitative research design and the multisite case study method of enquiry, as briefly discussed in Chapter 1 as the qualitative research methodology used in this research study, as well as to outline the collection and analysis of the research data.

Further to this, Chapter 3 will also discuss and outline the data integrity and validity discussed briefly in Chapter 1, and will specifically address the limitations of the study and how the researcher will address her bias during the research study.

3.2. Research design

Research design can be described as a general plan about what one will do to answer the research question. Research designs can be divided into two categories; namely, exploratory and conclusive (Creswell, 2018). As this research study is qualitative in nature, the research will be exploratory, and as briefly explained in Chapter 1, section 1.7, this research study will be conducted from an interpretivist perspective.

The research methodology which the researcher will apply to this research study is qualitative in nature, as discussed in Chapter 1, section 1.7. The most important aspect of utilising a qualitative research method is that it allows the researcher to explore each SOE to be sampled within this research study as a case study, by applying the multisite case study method of enquiry. This method of enquiry will be further discussed in section 3.8.

Exploratory research aims to explore specific aspects of the research area and does not aim to provide final and conclusive answers to the research question (Creswell, 2018). Furthermore, in exploratory research the researcher may even change the direction of the study to a certain extent, however not fundamentally, according to new evidences gained during the research process (Creswell & Plano Clark, 2011). As briefly discussed previously in Chapter 1, the researcher's ontology and epistemology influence the design and methodology of the research study.

As the research phenomena within this study is not understood and needs to be explored, the researcher will apply a qualitative research design, which according to Maxwell (2012) is flexible rather than fixed, and is inductive rather than following a specific sequence, or derived from a decision at the beginning of the project. Further to this, Maxwell (2012) states that research designs should be a reflexive process operating through every stage of the research project.

Within the context of this research study, a qualitative design is more appropriate, as the study seeks to explore and explain the challenges of the research problem, and to further influence the review and development of related TETA project implementation and management frameworks.

The design of the research study would therefore naturally be of an exploratory nature. As the researcher is a student of the Da Vinci Institute, which is a mode 2 institution, the research will take place in the context of a mode 2 learning environment. According to Partington (2000), mode 2 is knowledge created in a context of application, and the principle features of mode 2 research are trans-disciplinary; i.e. beyond the scope of any one contributing discipline.

The researcher seeks to gain an in-depth understanding of the research problem in order to inform alternative frameworks for project implementation and management, and using a case study approach will allow the researcher to gain an in-depth understanding of the complexities of each SOE, as each SOE is bound by a contract with specific boundaries and context. This will also allow the researcher to explore the problem areas within the research study and generate certain insights to the problem areas within the research study.

3.3. Research methodology

The advantage of using qualitative methods is that they generate rich, detailed data that leave the participants' perspectives intact and provide multiple contexts for understanding the phenomenon under study. In this way, qualitative research can be used to vividly demonstrate phenomena or to conduct cross-case comparisons and analysis of individuals or groups (Strauss & Corbin, 1990).

Qualitative research is generally based on a social constructivism perspective; on words, feelings, emotions, sounds, and other non-numerical and unquantifiable elements. It has been noted that 'information is considered qualitative in nature if it cannot be analysed by means of mathematical techniques. This characteristic may also mean that an incident does not take place often enough to allow reliable data to be collected' (Herbst & Coldwell, 2004).

The term 'qualitative' implies an emphasis on the qualities of entities, and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasise the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasise the measurement and analysis of causal relationships between variables, not processes. Qualitative forms of inquiry are considered by many social and behavioural scientists to be as much 'a perspective on how to approach investigating a research problem as it is a method' (Denzin & Lincoln, 2000).

The researcher will be exploring various transport industry specific SOEs as a case study across multiple sites, and which are currently implementing skills development projects funded by TETA.

Each SOE will be as a specific case study (all meeting the same set of criteria to be explored further on in this chapter). Each SOEs has their own context and participants. Each SOE has a respective manager responsible for the management and implementation of the TETA-funded projects, and each SOE also has its own boundaries and limitations which make it unique. As there are multiple SOEs within the transport sector, it would seem that this would emanate into a multisite case study approach.

3.3.1 Case study methodology

According to Yin (2009), case studies are a preferred method when (a) 'how' or 'why' questions are being posed, (b) the investigator has little control over events, and (c), the focus is on a contemporary phenomenon within a real life context. Applying the case study methodology, researchers are able to examine the data collected within a specific context of the research being conducted. Case studies explore and investigate the phenomenon. Yin (2013) defines the case study method as an empirical inquiry that investigates a phenomenon within a real life context, when the boundaries between the context and the phenomenon are not clear, and where multiple sources of evidence are used.

One of the common pitfalls associated with case studies is that there is a tendency for researchers to attempt to answer a question that is too broad, or a topic that has too many objectives for one study. In order to avoid this problem, several authors, including Yin (2009), have suggested that placing boundaries on a case can prevent this explosion from occurring. Suggestions on how to bind a case include (a) by time and place, (b) time and activity (Stake, 1995), and (c) by definition and context (Creswell, 2018). Binding the case will ensure that one's study remains reasonable in scope (Baxter & Jack, 2008).

As the scope of the research will be limited to TETA and SOEs funded by TETA, the qualitative research methodology could focus on those SOEs that have existing TETA-funded projects which can be researched; each SOE being a specific case study. The case study method is a popular qualitative research method in the business area. Case studies aim to analyse specific issues within the boundaries of a specific environment, situation or organisation. According to its design, case study research method can be divided into three categories: explanatory, descriptive and exploratory (Baxter & Jack, 2008).

The qualitative method will allow the researcher to explore each case study in detail. Data collection could incorporate interviews with research participants; in this case SOEs, their respective project managers and TETA project managers, questionnaires, and/or archival data could be analysed. The interpretation of the research data collected can be based on a combination of the researcher's perspective and data collected (Creswell, 2018). The interpretations derived from data are dynamic and can be continuously revised throughout the various phases of the study. Maxwell (2012) states that a researcher's perspective, and that of the research participants, is centrally important to the study.

Based on related evidence gathered during the research process, the researcher will develop the most appropriate framework that will inform the appropriate changes that would need to be implemented in practice. This, however, requires active participation and collaboration between the researcher and research subjects within the TETA and the SOEs.

3.4. Research sampling

Gentles, Ploeg and McKibbon (2015) define sampling in qualitative research as the selection of specific data sources from which data can be collected to address the research objectives. Further to this, they also state that there are variations in the concept of sampling; namely in grounded theory, which relates to 'where one goes to obtain the data' (Strauss & Corbin, 1998), phenomenology which relates to 'choosing informants' (Cohen, 2006), and case studies which relate to 'sampling of selected cases and selecting data sources' (Stake, 1995).

The researcher will approach the sampling of the research case studies by applying the principles of purposeful sampling. Purposeful (purposive) sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources (Patton, 2002). In this approach, the selection of participants is criterion-based or purposive (Patton, 2002), and it will involve the researcher identifying those projects within SOEs which are funded by TETA as the phenomenon of interest, and who meet the sampling criteria as set out by the researcher. The participants must be willing to participate in this research study and have the ability to clearly communicate their experiences and opinions in a reflective manner.

Within the context of TETA, the researcher will purposely sample those SOE projects which have been identified and confirmed by management of TETA as problematic and non-performing. The TETA criteria applied to identify and confirm non-performance of projects is as per the list provided:

- No or low disbursement of associated project funding – funding is only disbursed to SOEs when certain evidence/verifiable information is submitted as evidence of certain milestones being achieved within a specific project.
- Lack of implementation of the project within the SOE – this can be defined as those projects that are not being implemented within the timeframe and specifications of the project plan, or have difficulty in initiating or achieving milestones of a specific project.
- Poor performance of learners participating in a project – learners not achieving their milestones within a project and delaying completion of their training.
- High turnover of learners within a project – refers to learners dropping out of a learning program due to various reasons, and the learners being replaced with other learners during the program.
- Continuous extension of project contract – project contracts being extended due to above issues listed.
- Overall poor management of the implementation of project – lack of proper management oversight on the different components of the project value chain.

3.5. Sampling criteria applied

The sampling criteria as discussed and explained above in section 3.4 was applied to SOEs within the context of this research study as follows:

- Samples will only be selected from TETA-levy paying SOEs within the Transport Sector which have been awarded discretionary grants by TETA. TETA may only fund those stakeholders that pay their Skills Development Levies (SDL) to the TETA via SARS (South African Revenue Services) as per the Skills Development Levies Act 9 of 1999.
- Samples will be selected from SOEs which have projects meeting the TETA criteria for non-performance – the research study is focused on developing a framework for project implementation focusing on non performing projects.
- Samples to be selected from the 2016/2017 financial year – this will allow the researcher sufficient time to explore these projects from inception; projects identified commenced on July 2016.
- Projects with a duration of 2 to 3 years to completion – this will allow the researcher to explore these SOEs and their projects to completion phase.
- Projects awarded to SOEs only – the projects awarded to SOEs are those that have been identified as problematic and require an enhanced/revised strategy for implementation and management.
- Projects awarded for Apprentice Training within their respective subsector – this training type is applicable across all SOEs, and is one of the criteria for the sampling of data from this research study.

3.6. The strategy

The researcher will select the sample of SOEs for the purpose of this project by applying the above criteria to the list of all non-performing projects as confirmed by TETA management's criteria (as listed above), as well as across the various subsectors within transport (i.e. Aerospace, Rail, Maritime, Logistics etc.). The rationale for sampling from various subsectors is to determine whether subsector specific regulatory/legislative frameworks and policies have an impact on the project value chains and systems. Within the context of SOEs, the internal procurement strategies, policies and supply chain management regulatory frameworks will be explored to determine the impact on projects (if any), as well as the project management methodologies and strategies that are in place within SOEs.

The majority of the data are submitted by SOEs to TETA as part of their contractual obligations. In order for TETA to disburse funding to SOEs, certain project information and reports are submitted to allow TETA to conduct an evaluation and desktop monitoring on the implementation of all projects, as well as actual physical monitoring of all projects on a quarterly basis for verification purposes.

3.7. Data collection methods

The data collection methodologies most common with qualitative research approaches are observations, surveys and fieldwork. As this is also an action-based research methodology, the researcher will conduct fieldwork, and use the TETA monitoring tool (which is compulsory on all TETA site visits on the TETA-funded projects), semi-structured interviews, and systematic observations. The researcher will utilise the following methods:

3.7.1 TETA monitoring tool

This particular monitoring tool is structured specifically for the TETA performance monitoring & evaluation strategy and framework (PM&E, 2015), and is very closely aligned with the criteria of the projects. The tool includes specific questions related to the project being implemented, which will assist the researcher in collecting project-related data. Some of the questions within this tool focus on the learner and the training provision within the projects, as well as any challenges encountered. The questions within this monitoring tool will also influence the questions when conducting interviews with respondents involved in a particular project.

3.7.2 Interviews

Interviews are a qualitative research technique widely used by qualitative researchers; their key feature is their ability to provide an undiluted and detailed investigation of people's personal perspectives for in-depth understanding of the personal context within which the research phenomena are located. They are also particularly well suited to research that requires an understanding of deeply rooted or delicate phenomena, or responses to complex systems, processes or experiences because of the depth of focus and the opportunity they offer for clarification and detailed understanding (Ritchie & Lewis, 2003).

According to Boyce and Neal (2006), there are three categories of interviews:

- Structured Interviews – A series of pre-determined questions.
- Unstructured Interviews – Unprepared, least reliable and very biased.
- Semi-structured Interviews – A combination of structured and unstructured questions; however, other questions may be added to seek clarity and r expand on issues.

In the case of this particular research study, the researcher will conduct semi-structured interviews, with predetermined questions, with the specific participants; namely the projects managers within TETA and the project managers within the five SOEs. Semi-structured interviews will enable the researcher to learn more about the answers provided, as it will allow the respondents to elaborate on their answers according to their experiences which will assist in contextualising their experiences, and it will assist the researcher to fully understand the respondent’s impressions on the research study.

Interviews will also allow the researcher to gain the full range and depth of the information provided, and clear up any misunderstandings or perceptions related to the questions being asked in the interview. The questions within the interview are semi-structured, open and focused on the areas listed below within the TETA project management value chain, but are not be limited to:

- Specific to project managers within SOEs that are responsible for managing the implementation of projects within their respective organisations.
- Specific to project managers within TETA who are responsible for managing the implementation of the projects awarded to SOEs by TETA.
- Training providers and learners involved in the training and implementation of the related skills development projects within SOEs.
- Legislation and regulations within the context of the phenomenon under study.

3.7.2.1 The research instrument (questions)

The following are the research instruments (questions) to be utilised during the semi-structured interviews conducted and as discussed above in section 3.7.2. These questions are related to the main research question, and the aim and objectives as briefly discussed in Chapter 1, sections 1.4 and 1.9 respectively. The questions are also interrelated within the theoretical framework of this study, and within the context of systems thinking approach as briefly discussed in Chapter 1 in section 1.8.

- Which are the factors that impact the SOEs' inability to implement TETA-funded skills development projects successfully within their organisation?
- Are the current strategies within TETA and the respective SOEs inhibiting the implementation of skills development projects within the respective organisations?
- Are the current TETA systems effective and sufficient to support the implementation and management of projects within SOEs?

The assurance of the quality of the research instruments is addressed by ensuring that the questions are directly related to the research phenomena, as well as the aim and objectives of the research study. The questions are deliberately very open in the spirit of an exploratory qualitative study. The same set of questions will be consistently used with all participants. Where necessary, follow up questions will be asked for purposes of seeking clarity from the participants.

3.7.2.2 The method followed for the semi-structured interview process is herewith summarised

Formal letters of request were sent to all six participants via e-mail, requesting them to participate and contribute to the research study. The letter introduced the researcher and provided the background, rationale and an introduction to the research study. The letter also pointed out to the prospective participants that their participation was voluntary, not for monetary gain, and that they

could opt out of the study at any point in time. Their participation and contribution to the research study would be confidential and anonymous, and any queries were addressed telephonically when and if required.

Based on the response from the invited participants, an interview schedule was compiled and agreed upon, the consent form and research questionnaire were e-mailed to all participants, and all invited participants responded positively to the request. All appointments were scheduled and the participant's willingness to participate was confirmed in writing. Five face-to-face interviews were held with participants, each interview was 60 to 90 minutes in duration, and permission was given by all participants to have their interviews digitally recorded when they signed the consent form provided. A commitment was made by the researcher in the interview process that all recorded interviews would be transcribed and forwarded to each respective participant for their verification and sign off before being included as a sample within the research study.

The sixth interviewee was not able to make or reschedule the appointment initially agreed on, and was therefore requested to make a written submission based on the interview questionnaire emailed to her previously. A formal written submission was made by this participant, including submission of the signed consent form. Electronic interviews can be conducted without people actually meeting, and an advantage of this is that there is no need to transcribe the verbal data, and interviewees can revise their responses (Klenke, 2016).

All interviews were held at the participant's place of employment, in a quiet boardroom without any interruptions. The questions contained in the interview questionnaire were read out at each scheduled interview prior to the actual commencement of the interview, and the researcher ensured that the question was well understood where clarity was sought. The question was again repeated during the actual interview according to the questionnaire. All interviews were recorded on a digital recorder; and each interviewee was provided a code, so as to eliminate as much bias as possible, and to protect identity of the participants.

Once all the interviews were concluded, the recordings were saved onto a hard drive, as well as an external drive, and the external drive was provided to a professional transcriber. The professional transcriber returned all five written transcriptions in Microsoft Word format to the researcher via e-mail. The data were analysed using the grounded theory method of coding, and the summary of the transcriptions was sent back electronically by e-mail to each participant for final acceptance and approval. The outcome of the analysis was cross referenced with the literature review previously conducted in Chapter 2.

3.7.3 Documentation review

A documentation review allows the researcher to gain an impression of the research study without causing any interruptions, as well as the fact that documents relevant to the research can also provide the researcher with a background and context of the research study. It is therefore

important to limit the review of documents specific to the research study. Documents that will be reviewed during this research study are as follows, but are not limited to:

- TETA project contracts with SOEs.
- TETA financial reports on disbursement rate of associated project funding.
- Project implementation plans.
- Project monitoring reports which provide an overall status of the project.
- Project related policies.

The researcher will also incorporate the various policies affecting project management and implementation within the organisation into the literature review to determine whether the identified policies were enablers or disablers to the implementation and management of the projects to be sampled.

3.7.4 Case studies

The researcher will treat each SOE within the samples selected to be researched as a case study in order to explore and understand the nature and complexities of their projects, and how they contribute to the challenges of their implementation and management. In other words, this research will entail a multisite case study across five SOEs. This will enable the researcher also to gain a thorough understanding of each respondent's experience of the program's strategies, processes and outcomes.

3.8. Data analysis and integrity

Data analysis is the breaking up, separation, or disassembling of research material into pieces, parts, elements, or units. With facts broken up into manageable pieces, the researcher sorts and sifts them, searching for types, classes, sequences, processes, patterns or wholes. The aim of this process is to assemble, or reconstruct, the data in a meaningful or comprehensible fashion (Miles & Huberman, 2014).

A qualitative research design (interactive approach) has a flexible structure as the design can be constructed and reconstructed to a greater extent (Maxwell, 2012). Thus, the thorough and appropriate analyses of an issue can be produced by utilising qualitative research methods, and therefore the participants have sufficient freedom to determine what is consistent for them (Flick, 2014). As a result, the complex issues can be understood easily. Further to this, the grounded theory method of analysis is an inductive coding process of building theory up from the data itself. Induction of theory is achieved through successive and continuous comparative analysis. Part of the process of concurrent data collection and analysis is the constant comparison of incident to incident, incident to codes, codes to codes, codes to categories, and categories to categories (Birks & Mills, 2015).

As this research is based on multi-site case study methodology, it is critical that the appropriate method of analysis is applied. Therefore the researcher applied the grounded theory method of coding to the data collected in order to manage her bias during this research study, as illustrated in Figure 3-1 below. As the researcher is actively involved in project management and implementation within TETA, the researcher will be viewed as subjective during the research study, as the researcher has her own experiences and opinions and will be biased. However, the data accuracy, validity and integrity will limit the researcher's subjectivity and influence on the outcome of the study to a large degree.

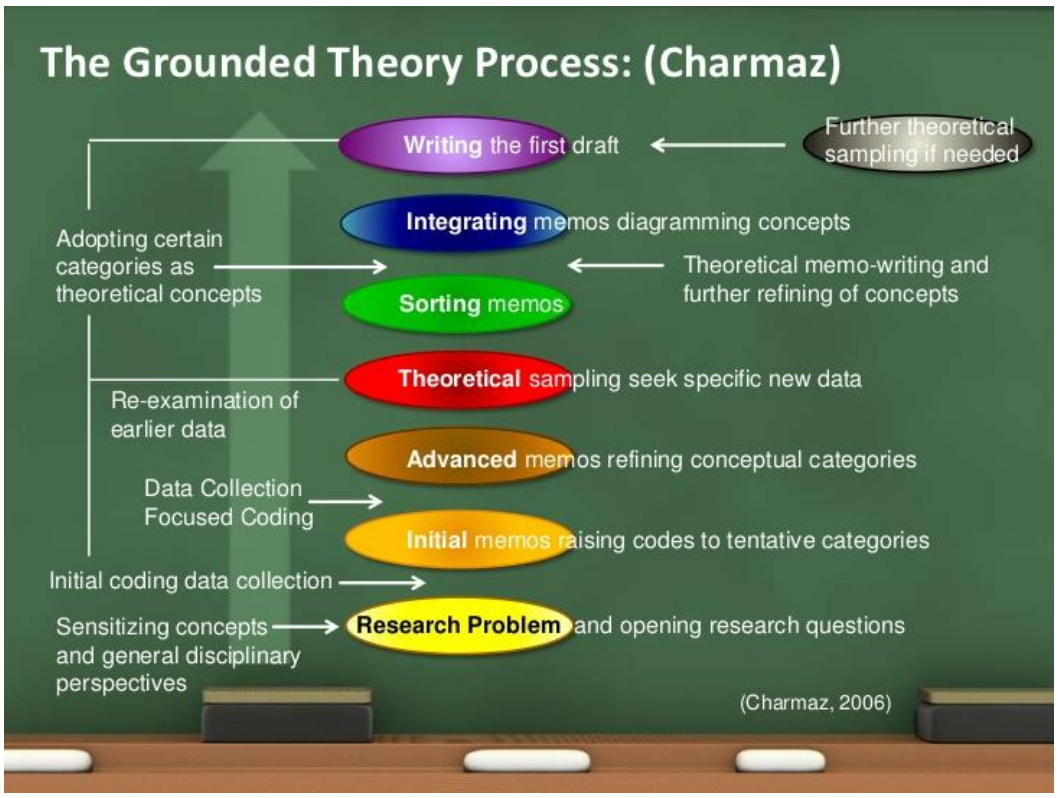

Figure 3-1: The grounded theory process of coding (Charmaz, 2006)

3.8.1 Replication or repeatability

Within the context of this research study, the data collected will be specific to each SOE, and therefore the replication of information will not be significant. Data collected will be specific to an SOE, their funding contracts, and their specific projects.

The researcher can confirm that the data were analysed, validated and audited by both the Department of Higher Education (DHET) in terms of the DHET Validation Framework, and the Auditor General, and duplication (if any) of any associated data was identified during this validation and auditing process. This process in fact informs the annual reporting to the Auditor General and the South African Parliament of Government.

3.8.2 Accuracy

The data pertaining to the various projects or case studies involved in this research study will be specific in respect of SOEs. The accuracy of the data will be measured as per the specifications in the associated contracts for each project, as well as monitored in line with the TETA monitoring tool.

This data which are submitted to TETA by the SOEs are audited and measured by the DHET in line with their DHET validation framework, and the performance information is also audited and measured by the Auditor General on a quarterly basis against the TETA strategic plan. The researcher acknowledges that the accuracy will never be 100%; however the information can be confidently used.

3.8.3 Validity and reliability

The aspects of validity and trustworthiness were briefly discussed in Chapter 1, section 1.10. According to Wilson (2010), reliability issues are generally associated with the subjectivity of the researcher, and once a researcher adopts a subjective approach towards the study, then the level of reliability of the work is going to be compromised. Reliability is a concern every time a single observer is the source of data, because 'we have no certain guard against the impact of that observer's subjectivity' (Babbie, 2016).

The reliability of the data and information collected during the interview process, which will be subjective, can be addressed by using the semi-structured interview model, in that pre-determined questions will be set by the researcher in line with the set criteria and the DHET validation framework. However, it will allow the researcher to ask additional related questions to gain clarity and/or expand on the pre-determined questions being asked, and also allow the respondent to elaborate on their answers specific to their projects. As this research study is exploratory and of a qualitative nature, the researcher has to address her subjectivity and her bias towards the phenomenon under study in various ways; one of which is by applying the grounded theory method of data analysis as previously explained above in section 3.8.

Very specific criteria have been set for the sampling of the projects as discussed in section 3.5. This will ensure that the data collected are representative of the sample to be researched, and its validity ensured through the application of the DHET validation framework. The only differentiator on the samples to be selected is the differing transport sub-sectors where the projects are being implemented. The projects are measured against exactly the same measurements; i.e. intervention being apprentice training, size of project in respect of number of learners and training providers, and all projects being implemented within an SOE.

Validity of the research study, and as briefly explained in Chapter 1, section 1.10, can be explained as the extent to which the requirements of scientific research method have been followed during the process of generating research findings. Oliver (2010) considers validity to be a compulsory requirement for all types of studies. There are different forms of research validity, and main ones

specified by Cohen and Manion (2011) are content validity, criterion-related validity, construct validity, internal validity, external validity, concurrent validity and face validity.

Measures to ensure validity of a research include, but are not limited to, the appropriate time frames for the study selected and the appropriate methodology applied, specifically taking into account the characteristics of the study. The sampling method applied is also directly related to the validity of the data collected (Taylor, 2013).

The researcher will apply DHET's validation framework (DHET, 2016) and policy for measuring the validity of data collected. Each skills development project awarded to an SOE has an associated funding contract, which requires the SOEs to submit documents, reports and information within the DHET validation framework. This is done to ensure the validity and consistency of evidence being submitted in lieu of contractual payment, as well as performance measurement and reporting. The application and use of the DHET validation framework will ensure that that the performance of the projects and the measurement thereof is valid.

The researcher set specific criteria for the sampling of the various projects within SOEs, as detailed in sections 3.4 and 3.5 respectively, which will form part of this research study, and which are aligned with the DHET validation framework. The researcher can also confirm that the validity of data is supported by the audits conducted by both DHET and Auditor General on a quarterly basis.

3.9. Limitations of the study

The scope of this research study will be limited to TETA and SOEs within the transport sector that are currently implementing skills development projects funded by TETA, and that have been identified as high risk and non-performing as per the criteria set out in section 3.4. SOEs implementing skills development projects which have at least two years' timeframe have been explored, as that allowed the researcher sufficient time to research and assess projects of that duration, and that allowed the researcher sufficient time to observe, assess and make qualitative deductions on the challenges within the various components or 'systems' within the projects value chains of the projects being researched.

The utilisation of a qualitative methodology will introduce limitations of its own, in that the researcher will be gathering data outside the DHET validation framework during the interview process, and which in most instances cannot be independently verified. The information or data collected during the interview process will contain several sources of bias, which the researcher must be aware of and take note of, depending on the participants being interviewed and their own experiences and perspectives. However, as stated in 3.7.4, the multisite case study method of enquiry will be applied, as well as the grounded theory method of coding will be used, which will assist to address the bias of the researcher in this regard.

3.10. Conclusion

Taking into account the research phenomena within this research study, and the fact that the research is of an exploratory nature, the researcher can conclude that the appropriate approach will be applied.

It must be noted that the topic of project management and implementation of skills development projects within SOEs is not a topic that has been extensively researched (if at all). No literature or previous research could be found on this topic within a South African context. It is the researcher's hope that this study will encourage further research, as SOEs have a tremendous contribution to make in skills development and the growth of the economy within South Africa, and which requires the appropriate skills.

CHAPTER 4. FIELDWORK

4.1. Introduction

The previous chapter provided detail pertaining to the method and design of the research study and the various approaches to sampling, data collection, and analysis to be utilised within the context of this research study. Chapter 4 covers the fieldwork conducted by the researcher, the data analysis conducted, and the results achieved. This chapter needs to be read within the context of Chapter 3, as it covers the research design and methodology adopted for this research study.

4.2. Research design

As previously discussed in Chapter 3, the design of this research study is of an exploratory nature, and the researcher applied a purposive sampling strategy, and utilised the multisite case study method of inquiry. In order to analyse the data, and to manage the researcher's bias in this study, the grounded theory method of coding was applied. All of the design aspects are explained in further detail below.

4.2.1 Sampling

Thompson (2012) states that sampling concerns every aspect on how data are selected during a research study, out of all the possibilities that may have been observed, and how to utilise the data to make inferences about the larger population of interest.

As previously mentioned in Chapter 1, this research study is aimed at exploring the challenges being experienced by TETA in implementing and managing skills development projects within SOEs being funded by TETA, and disbursing the associated project funding. The inability of TETA to disburse the associated project funding to SOEs is a risk for TETA, as the minimum requirement of disbursement as stipulated by the SETA funding regulations per financial year is 75% of associated budget.

Qualitative research utilises non-probability methods of selection of their samples within the context of their research study. Therefore, samples are deliberately selected to reflect specific features within the sampled population. Furthermore, it is the characteristics of the population which is used as the basis for selection (Ritchie, Lewis, Nicholls & Ormston, 2014). Based on this approach, the target sample of SOEs was identified within this study by applying the sampling criteria as provided in section 3.4 of Chapter 3.

The researcher therefore followed a purposive sampling strategy, in that purposive sampling represents a group of different non-probability sampling techniques. Also known as judgmental, selective or subjective sampling, purposive sampling relies on the judgement of the researcher when it comes to selecting the elements to be studied (Patton, 2002). With respect to this research study, the researcher specifically identified those SOEs that are being funded by the TETA, by applying this

strategy. In total, there are five SOEs as previously defined by the PFMA in Chapter 2, being funded by the TETA within the transport sector.

Further to this, the researcher specifically applied the critical case sampling technique, which is very useful during exploratory qualitative research or research with limited resources, or research where a small number of cases can be decisive in explaining a phenomenon of interest (Schutt, 2012). As all five SOEs met the sampling criteria as provided in Chapter 3, each of them were sent written communication providing the background and rationale for the study. Of the five SOEs invited to participate in this research study, all five accepted the request for participation. However, one of the SOEs could not make the appointment for the semi-structured interview scheduled, and was therefore requested to submit input to the researcher in writing, based on the questions provided in the research interview schedule sent to the participants. Added to this, the Senior Management of TETA responsible for the management of the SOE projects being funded by TETA, as well as the Chief Finance Officer, Chief Operations Officer, and TETA Financial Accountant were interviewed as a focus group to gain the perspectives and insight from a TETA perspective.

In total there were six semi-structured interviews conducted, representing 100% of the current SOEs being funded by TETA, as well as TETA management. The fact that 100% sample was interviewed during this research study satisfied the researcher that theoretical saturation was reached, based on the fact that all funded SOEs had been interviewed and participated, and the fact there was a repetition of various themes across the interviews conducted. The failure to reach data saturation has an impact on the quality of the research conducted, and impacts on the research content validity (Fusch, 2015).

Table 4-1 below provides the sub-sector and demographic breakdown of each of the participants within this research study.

Table 4-1: Subsector and participant's demographics (semi-structured interviews)

Participant	Sub sector	Position	Race	Gender
SOE 1	**Aerospace**	Skills Development & Bursary Manager	Coloured	Male
SOE 2	**Rail**	Senior Manager: Learning & Development	Indian	Male
SOE 3	**Aerospace**	Head of Technical Academy	Indian	Female
SOE 4	**Aerospace**	Manager: Skills Development & Employment Equity	Black	Male
SOE 5	**Rail**	Training Manager	Black	Female
TETA 6	**TETA**	Chief Operations Officer	Black	Male

Participant	Sub sector	Position	Race	Gender
		Acting Aerospace Executive Officer	Black	Male
		Acting Rail Executive Officer	Black	Male
		Finance Accountant	White	Female
		Asst. Education Training Development Practitioner	Black	Female
		Project Administrator	Black	Male

All the participants participated voluntarily and freely; they shared their views and insights on the phenomena under study.

4.3. Data collection

The data collection process followed within this research study will be dealt with within the following sub-sections below:

4.3.1 Finalisation of data collection instrument

The data collection instrument utilised for the semi-structured individual interviews conducted during this research study was drafted and forwarded to the academic supervisor. The academic supervisor was satisfied that the instrument was suitable for the exploratory grounded theory on which the study was based. The instrument allowed for semi-structured open questions, which allowed for soliciting adequate and relevant responses from the participants, as well as allowing the researcher to seek clarity to those responses. The questions were very clear and to the point.

4.3.2 Individual semi structured interviews

Semi-structured interviews, according to Cohen (2006), are best used when one only has one opportunity to interview a participant. The semi-structured interview can provide reliable, comparable, qualitative data. Further to this, the validity and reliability depends not on the repeated use of the same words in the questions, but rather on the conveyance of equivalence of meaning. Equivalence of meaning assists in standardising the semi-structured interview and assists with facilitating comparability (Denzin, 1989). During this research study, the same questions were used for all the interviews held with participants, and this was done in order to manage the bias of the researcher (Turner, 2010).

It is the researcher's ability to facilitate interaction during the interview that a context is created where participants share data regarding their insights and experiences. It is the researcher that

facilitates the flow of communication, who identifies cues, and that sets respondents at ease (Poggenpoel, 2003).

The rationale for using semi-structured interviews for this exploratory research study was to enable the researcher to explore and gain the insights and experiences of the participants in implementing and managing skills development projects within their respective organisations. The interview duration ranged from 90 minutes to 120 minutes maximum, and they were conducted in the various boardrooms of the participant's organisation. All six interviews were recorded digitally so as to ensure that the interviews were captured accurately, and all interviews were transcribed professionally to enable coding and analysis of the data gathered (Charmaz, 2012).

4.3.3 Data analysis

The researcher's approach to the data analysis of this study was based on the grounded theory data analysis approach of Charmaz (2006) as explained in Chapter 3.

Charmaz (2008) states that grounded theory allows for systematic, as well as analytic, strategies that combine explicitness and flexibility. Fundamental components of the grounded theory method also include the minimising of the researcher's preconceived ideas about the research phenomena and the resultant data. Charmaz (2008) further states that using simultaneous data collection and analysis to inform each other, and remaining open to varied explanations and the understandings of the data, as well as focusing on data analysis, allows the researcher to construct middle-range theories. The analysis of data within this research study will be explained further in the transcription of data and the coding process followed in order to achieve the end results.

4.3.4 Transcription of data

The transcription of all the five digitally recorded interviews were outsourced to a professional transcriber to ensure that the interviews were accurately captured, and which allowed the researcher to read through each transcript of each interview thoroughly and in detail. This allowed the researcher to remain close to the data, which also assisted the researcher in avoiding coding and categorisation of themes prematurely (Charmaz, 2006).

4.3.5 The coding process and results

For the purposes of this exploratory research study, the grounded theory method of coding was applied in order to manage the researcher's bias. The reason for applying this method during this research study was that the researcher is an active participant within the phenomenon under study, and the research paradigm is interpretivist.

The application of this method of coding is supported by Charmaz (2015), who states that grounded theory is a general methodology with systematic guidelines for gathering and analysing data to

generate middle-range theory. The analytic process consists of coding data; developing, checking, and integrating theoretical categories; and writing analytic narratives throughout the inquiry. From the beginning of the research process, the researcher codes the data, compares data and codes, and identifies analytic leads and tentative categories to develop through further data collection.

Grounded theory coding is interactive and comparative, and further to this, line-by-line coding forces the researcher to interact with the data collected. Charmaz (2006) argues that the researcher should avoid making assumptions when analysing the data, but should rather pay attention to the actual data collected and search for patterns. Saldana (2016) also states that coding in qualitative research is assigning a word or a phrase that symbolically assigns a summative, salient or evocative attribute for a portion of language based data. The data can emanate from interview transcripts, field notes, documents and or other sources. Furthermore, in qualitative data analysis, a code is a researcher-generated construct that symbolises or translates data (Vogt, Gardener & Haeffele, 2014). Glaser (1992) argues that by applying the grounded theory method of coding, the researcher allows the data to control her as much is humanely possible.

Therefore, in order to manage the researcher's bias during the process of data analysis, the grounded theory method of coding seemed appropriate to address this and to ensure accuracy and reliability of the results emanating from the analysis. The grounded theory method of coding consists of two phases, (1) initial coding and (2) focused coding (Charmaz, 2006). However, according to Strauss and Corbin (1998), their version of grounded theory method relies not only on the emergence of theory, but view the starting point of the study with a broader lens. They further point out that in addition to the research study there are other components that influence the study, such as both the personal and professional experiences of the researcher, which may influence or initiate the enquiry. Strauss and Corbin (1998) introduce axial coding as the second phase which focuses on developing individual categories with connecting sub-categories, which in turn links related categories within one another.

Herewith below, the researcher seeks to explain the various phases implemented during this study's coding process.

4.3.5.1 Initial coding

Grounded theorists conduct coding as they gather data, and specific forms of grounded theory coding lead researchers to focus on possible meanings of the data and to remain close to the data while actively interrogating the data collected (Charmaz, 2008).

The researcher commenced with initial coding of the actual transcripts, line-by-line, carefully reading and searching for phenomena in each transcript. The phenomena identified were assigned conceptual labels or codes, as illustrated below in Table 4-2; the outcome of which was a list of codes identified within each of the transcripts.

Table 4-2: List of concepts and frequency

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews
TETA lacks expertise and knowledge on industry	3	1
TETA contracts, deliverables, timeframes and duration problematic	4	0
TETA DG Criteria too prescriptive	2	0
SETA Financial year not synchronized to academic year of institutions	1	1
No TETA criteria to encourage learner absorption	1	1
SOE is both an employer and an accredited training provider	2	0
Economic Impact of legislation adhered to by SOEs	5	0
Economic environment inhibits absorption, highly unionized	2	1
Mandatory Grant received is used as capital for projects	2	0
Negative Impact of reduction of Mandatory Grant	1	0
Non certification of learners by Quality Assurance	2	1
Insufficient TETA funding to support implementation of projects	1	0
Insufficient occupational qualifications developed to support projects	2	1
Organizational strategy not embraced by leadership	3	1
Leadership within SOEs reactive and not progressive	2	0
Lack of TETA leadership understanding of the funding problem	2	0
Decision making in TETA problematic, in that its top down, chamber / industry not consulted	3	0
Leadership within SOE not conversant with operational challenges	2	1
Bureaucratic processes within SOEs very problematic	3	1
Different units within TETA do not understand their impact		

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews
when delivery is lacking internally	1	1
Lack of support from SOE business units - releasing staff for training	1	1
Low learner stipends	1	0
Reskilling of staff within SOE	1	0
High decline in student numbers at SOE	1	1
Focus is turning to international training of students, nationally there is a huge decline	1	0
Industry pre-entry requirement very high due to nature of the industry	1	1
Learner stipend complaints to DHET	1	1
Learner issues causing delays on projects	1	1
Lack of orientation of learners leads to mismatch of training	1	1
Insufficient training provided to learners	1	1
Learners are widespread across the country	1	1
SOE absorption of qualified learners non existent	1	1
Supply Chain Management Legislation inhibits implementation	4	1
Adherence to Industry subsector related legislation	2	1
Training very highly regulated and industry specific	1	1
Sectoral Determination document outdated	1	1
High cost implications on industry regulatory compliance	2	1
SOE DG funding application a matter of compliance	1	1
TETA focus on compliance not on quality	0	1
Developmental needs to be defined then required projects could be better defined	1	1
Alignment of needs in SSP in collaboration with TETA	1	1
SOE highly unionized internal, affects selection process of learners	1	1

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews
Continuous TETA funding even if SOE do not perform	0	1
Political influence on allocation of SOE funding	0	1
Administrative processes and infrastructure critical	2	0
Insufficient document control within SOE and TETA	2	1
Trade test certification of learners delays payment from TETA	3	1
High labour costs a significant component of operational costs within SOEs	2	0
SOEs receive multiple funding streams for projects	3	1
Government funding received is not what is applied for	2	0
TETA funding model does not allow for project start-up capital	2	1
SOE has a unique funding model as they depend on government subsidies	3	0
Many projects rescinded due to lack of appropriate funding	2	0
TETA funding model not sufficient to cover costs of required training	5	0
Upfront funding from TETA required to start project	3	0
TETA Funding not always approved for full application	2	0
TETA funding process misaligned to government funding	2	0
Learner stipend insufficient for transport and accommodation	2	0
Lack of financial planning within SOE	3	1
SOE lack of understanding on TETA Funding Framework	1	1
Low stipends cause conflict amongst learners on different programs	3	0
TETA payment of funds after project implementation is an inhibiting factor	2	1
External projects requires SOEs to tender - SCM process bureaucratic, causes delays	3	1
Contingency fund required for SOEs	5	1

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews
SOEs have sufficient budget	0	1
TETA funding framework does not cover actual costs	3	1
Lack of project management capacity within SOEs	3	1
Chamber staff are not experts in the sector they serve	3	1
TETA Monitoring only compliance not quality of provision	0	1
SDF capacity within SOEs problematic - high turnover of SDFs, no proper project handover	4	1
SOEs have a project management capacity issue	0	1
TETA internal systems are lacking to support efficient project management	0	1
TETA systems are not integrated	0	1
Monitoring of projects not effective, purely compliance	0	1
Insufficient skills development strategy within SOEs	1	1
Lack of support to Project Manager within SOEs	3	1
Insufficient collaboration with Chambers	4	1
Limited industry participation within TETA	3	0
Lack of partnership and collaboration between TETA and SOEs	3	0
TETA SOE alignment of Skills Development strategies	3	1
Misalignment of funding vs training needs	3	0
Strategic alignment of Skills Development as enabler to Employment Equity and Transformation	1	1
Strategic alignment of SOE business strategies to skills development	5	1
No engagement or alignment of stakeholder needs to DG Policy	1	0
SOE cannot define the future trajectory of the organization	2	0
Union reps representing SOE support strategy at TETA Board level, conflicted at implementation	3	1
TETA SOE Collaboration and partnership to align Sector Skills	2	1

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews
Plan		
No thorough needs analysis is conducted by SOEs,	3	1
DG applications not linked to actual organizational needs	3	1
SOEs project implementation not align with TETA funding window	0	1
Targets set for SOEs by Dept. of Transport not based on needs analysis	2	1
High numbers of learners are recruited without sufficient infrastructure and equipment	3	1
No proper integration by SOEs to needs analysis, demand or supply	3	1
KPAs not aligned to the project management value chain internally at TETA	0	1
No staff alignment to higher demand of projects	2	1
Lack of strategic application of funding by SOEs	0	1
TETA targets are instructed from DHET, not based on actual industry needs.	2	1
TETA has no strategy for SOEs	5	1
SOE and TETA systems need alignment to allow learner data uploads	1	1
TETA Quality Assurance function isolated	0	1
Revitalization of skills required to meet demands of the sector	2	0
Subsector industry has very specialized skills set	3	1
Shortages of aviation trade instructors - resource issue	1	1
SOEs require infrastructure for training, not more learners	2	1
Vetted providers required to assist with implementation	1	0
Industry commanding highly specialized people	3	1

The method of initial coding was applied consistently and thoroughly throughout each of the transcripts. The researcher was satisfied that the first phase of the analysis was concluded

accurately and that the concepts documented were an accurate representation of the content of the data captured within the transcripts.

As mentioned previously, the researcher then followed the first phase with the second phase; namely axial coding as defined by Strauss and Corbin (1998) which will be explained in detail below.

4.3.5.2 Axial coding

Axial coding is a process of relating the sub-categories to categories, which is fairly complex as it involves inductive and deductive thinking. This is achieved by comparing the categories and asking the right questions. However, according to Strauss and Corbin (1990), this process is more focused towards discovering and relating categories in terms of the paradigm model.

The researcher applied the axial coding phase, and managed to reduce the number of categories, due to the fact that the phenomena within this research study is fairly complex, as well as the phenomena itself is a system which is exceptionally integrated within itself. It therefore resulted in many of the categories having a common denominator, and hence sub-categories that emanated from this phase were found to be related.

However, Charmaz (2008) states that this phase is seen to be far too rigid and formal for grounded theory data analysis. It must be noted that the researcher preferred to follow the axial coding as a second phase to further support and validate the accuracy, reliability and validity of the data analysis within this research study.

4.3.5.3 Selective coding

Selective coding continues from the axial coding phase; however at a much higher level of abstraction. This is the third phase of coding, and aims to elaborate the core category around which the other developed categories can be grouped together and integrated (Klenke, 2008).

Selective coding is a critical phase in the theoretical development, and one which calls for highly developed theoretical sensitivity on the part of the researcher. Selective coding is almost an automatic result of the previous two phases of data analysis, where relationships between data have been repeatedly and consistently compared and contrasted (Strauss & Corbin, 1990).

The researcher endeavoured to identify the core categories that are specific to the phenomena under study, as even the core categories within the system of the phenomena are integrated in some form or manner. Below are the details of the selective coding results in Table 3.

Table 4-3: Results of the selective coding phase

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA lacks expertise and knowledge on industry	3	1	**Chamber expertise**
Chamber staff are not experts in the sector they serve	3	1	
TETA contracts, deliverables, timeframes and duration problematic	4	0	**Contract management**
TETA DG Criteria too prescriptive	2	0	**DG Policy**
No TETA criteria to encourage learner absorption	1	1	
SOE is both an employer and an accredited training provider	2	0	**Dual employer & provider**
Economic Impact of legislation adhered to by SOEs	5	0	**Economic**
Economic environment inhibits absorption, highly unionised	2	1	
Mandatory Grant received is used as capital for projects	2	0	
Negative Impact of reduction of Mandatory Grant	1	0	
Non certification of learners by Quality Assurance	2	1	**ETQA**
TETA Quality Assurance function isolated	0	1	
Insufficient occupational qualifications developed to support projects	2	1	**Lack of training infrastructure**
Leadership within SOEs reactive and not progressive	2	0	
Lack of TETA leadership understanding of the funding problem	2	0	**Leadership**
Decision making in TETA problematic, in that its top down, chamber / industry not consulted	3	0	
Leadership within SOE not conversant with operational challenges	2	1	
Bureaucratic processes within SOEs very problematic	3	1	

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Different units within TETA do not understand their impact when delivery is lacking internally	1	1	
Lack of support from SOE business units - releasing staff for training	1	1	
Low learner stipends	1	0	Learner
Reskilling of staff within SOE	1	0	
High decline in student numbers at SOE	1	1	
Focus is turning to international training of students, nationally there is a huge decline	1	0	
Industry pre-entry requirement very high due to nature of the industry	1	1	
Learner stipend complaints to DHET	1	1	
Learner issues causing delays on projects	1	1	
Lack of orientation of learners leads to mismatch of training	1	1	
Insufficient training provided to learners	1	1	
Learners are widespread across the country	1	1	
SOE absorption of qualified learners non existent	1	1	
Learner stipend insufficient for transport and accommodation	2	0	
Low stipends cause conflict amongst learners on different programs	3	0	
SETA Financial year not synchronized to academic year of institutions	1	1	Legislative compliance
Supply Chain Management Legislation inhibits implementation	4	1	
Adherence to Industry subsector related legislation	2	1	
Training very highly regulated and industry specific	1	1	
Sectoral Determination document outdated	1	1	

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
High cost implications on industry regulatory compliance	2	1	
SOE DG funding application a matter of compliance	1	1	
TETA focus on compliance not on quality	0	1	
Trade test certification of learners delays payment from TETA	3	1	
External projects requires SOEs to tender - SCM process bureaucratic, causes delays	3	1	
TETA Monitoring only compliance not quality of provision	0	1	
Monitoring of projects not effective, purely compliance	0	1	
Subsector industry has very specialized skills set	3	1	
No thorough needs analysis is conducted by SOEs,	3	1	
DG applications not linked to actual organizational needs	3	1	
Targets set for SOEs by Dept. of Transport not based on needs analysis	2	1	**Needs analysis**
No proper integration by SOEs to needs analysis, demand or supply.	3	1	
TETA targets are instructed from DHET, not based on actual industry needs.	2	1	
Political influence on allocation of SOE funding	0	1	**Political influence**
Administrative processes and infrastructure critical.	2	0	**Project administration**
Insufficient document control within SOE and TETA	2	1	
High Labor costs a significant component of operational costs within SOEs	2	0	**Project costs**
Insufficient TETA funding to support implementation of projects	1	0	**Project funding**
Continuous TETA funding even if SOE do not perform	0	1	

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
SOEs receive multiple funding streams for projects	3	1	
Government funding received is not what is applied for	2	0	
TETA funding model does not allow for project start-up capital	2	1	
SOE has a unique funding model as they depend on government subsidies	3	0	
Many projects rescinded due to lack of appropriate funding	2	0	
TETA funding model not sufficient to cover costs of required training	5	0	
Upfront funding from TETA required to start project	3	0	
TETA Funding not always approved for full application	2	0	
TETA funding process misaligned to government funding	2	0	
SOE lack of understanding on TETA Funding Framework	1	1	
TETA payment of funds after project implementation is an inhibiting factor	2	1	
Contingency fund required for SOEs	5	1	
SOEs have sufficient budget	0	1	
TETA funding framework does not cover actual costs	3	1	
Lack of project management capacity within SOEs	3	1	**Project management capacity**
SDF capacity within SOEs problematic - high turnover of SDF's, no proper project handover	4	1	
SOEs have a project management capacity issue	0	1	
Lack of support to Project Manager within SOEs	3	1	
TETA internal systems are lacking to support efficient project management	0	1	**Project resources**

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Shortages of aviation trade instructors - resource issue	1	1	
Insufficient collaboration with Chambers	4	1	**Stakeholder Engagement**
Limited industry participation within TETA	3	0	
Lack of partnership and collaboration between TETA and SOEs	3	0	
Organizational strategy not embraced by leadership	3	1	**Strategic alignment**
Developmental needs to be defined then required projects could be better defined	1	1	
Alignment of needs in SSP in collaboration with TETA	1	1	
SOE highly unionized internal, affects selection process of learners	1	1	
Lack of financial planning within SOE	3	1	
Insufficient skills development strategy within SOEs	1	1	
TETA SOE alignment of Skills Development strategies	3	1	
Misalignment of funding vs training needs	3	0	
Strategic alignment of Skills Development as enabler to Employment Equity and Transformation	1	1	
Strategic alignment of SOE business strategies to skills development	5	1	
No engagement or alignment of stakeholder needs to DG Policy	1	0	
SOE cannot define the future trajectory of the organization	2	0	
Union reps representing SOE support strategy at TETA Board level, conflicted at implementation	3	1	
TETA SOE Collaboration and partnership to align Sector Skills Plan	2	1	
SOEs project implementation not align with TETA funding window	0	1	

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
KPAs not aligned to the project management value chain internally at TETA	0	1	
No staff alignment to higher demand of projects	2	1	
Lack of strategic application of funding by SOEs	0	1	
TETA has no strategy for SOEs	5	1	
SOE and TETA systems need alignment to allow learner data uploads	1	1	
TETA systems are not integrated	0	1	**Systems alignment**
High numbers of learners are recruited without sufficient infrastructure and equipment	3	1	**Training infrastructure**
Revitalization of skills required to meet demands of the sector	2	0	
SOEs require infrastructure for training, not more learners	2	1	
Vetted providers required to assist with implementation	1	0	**Training providers**
Industry commanding highly specialized people	3	1	**Training requirements**

4.3.5.4 Comparative analysis

A critical component of the grounded theory methodology is the constant comparative analysis of data, as stated by Strauss and Corbin (1998). The researcher further applied this process during each phase of the coding process so as to ensure validity, reliability and consistency in the coding of the concepts (Strauss & Corbin, 1998). The triangulation of the data collected through the four individual interviews of SOEs, one written submission of SOE, and the one focus group of TETA management, was conducted and will be further elaborated on in Chapter 5.

4.4. Conclusion

Chapter 4 provided a very detailed synopsis of the data collection and analysis phase of this research study, and the complexities involved in the grounded theory method of coding. As the sample size was small, but covered 100% of the SOEs being funded by the TETA, the matter of saturation was addressed. The findings of this chapter will further be shared and explained in Chapter 5.

CHAPTER 5. RESEARCH FINDINGS

5.1. Introduction

Chapter 4 provided the detail, as well as an overview of the entire fieldwork conducted by the researcher during this research study. The purposive sampling method applied, the data collection process followed, and the semi-structured interviews conducted, were explained in detail.

The grounded theory method of coding applied as a method of data analysis was also explained in detail, which assisted in addressing the accuracy and validity of the data collected, as well as specifically addressing the researcher's bias within this research study.

Chapter 5 will address the specific findings that emanated from the fieldwork and provide a summary of these findings within the various core themes identified. In order to contextualise the findings within this chapter, herewith a reminder of the research questions related to the findings as previously listed in Chapter 1, section 1.9, which will be further explained:

- Which are the factors that impact the SOE's inability to implement TETA-funded skills development projects successfully within their respective organisations?
- Are the current strategies within TETA and the respective SOEs inhibiting the implementation of skills development projects within the respective organisations?
- Are the current TETA systems effective and sufficient to support the implementation and management of projects within SOEs?

5.2. The approach to presenting the findings

In order to present the findings and to seek a systemic solution to the phenomena within this research study, the researcher will apply rules in order to achieve an accurate and valid outcome of the findings resulting from the grounded theory method of coding applied to the data collected as discussed in the previous chapter. As stated before, the application of the grounded theory method of coding was to manage the researcher's bias towards the phenomena within this research study, and to ensure accurate and reliable outcome of the findings.

The concepts indicated by the five SOEs and TETA management will be considered a finding if the weighting exceeds 25% of all the participants indicating the concept. Strauss and Corbin (1990) state that concepts earn their way into theory provided they recur in the data collected. It is for this reason that the researcher applied the rule of a 25% weighting to the concepts emerging.

However, if TETA management indicated a concept in isolation, it was allocated a weighting of 100%. Mason (2010) states that one occurrence of a concept does have the potential to be useful and influence the gaining of understanding and meaning of the concept. This is due to the fact that the

TETA project management value chain is the only legal entity that funds the SOEs projects, as well as the entity which reports and validates the related performance information across all the five SOEs within the project management value chain, as per the Skills Development Act 97 of 1998. In view of this fact, it seemed prudent for the findings to be given a 100% weighting due to the impact across the entire project management value chain.

5.3. Presentation of the findings

The findings which will be presented within this chapter emanate from the data analysis conducted in Chapter 4, specifically in section 4.3.5.3, where the researcher developed categories from the concepts identified from the data analysis. Having interrogated the concepts and their relationships within the context of this research study, the researcher developed various categories, and from the categories was able to identify and confirm eight themes which emerged from the data analysis. The findings can be triangulated back to the sub questions. Below is a list of the various categories and associated eight emerging core themes:

Table 5-1: Core themes emerging from the data analysis

Categories	Themes
Chamber Expertise	Contract Management
Discretionary Grant Policy	
Management of contracts	
Economics	Economic Environment
Learners	The Learner
Legislative Compliance	Legislative Environment
Training Requirements	
Political Influence	Politics
Project Administration	Project Management
Project costs	
Project Funding	
Project Management Capacity	
Project Resources	
Leadership	Strategy & Leadership
Needs Analysis	

Stakeholder Engagement	
Strategic Alignment	
Systems Alignment	
Dual Employer & Provider	Training Provision
ETQA	
Training Infrastructure	
Training Providers	

Within Chapter 5, the findings which emanated from the eight core themes will be discussed in detail, and in the order of the list provided in Table 5-1 above. The researcher will provide specific detail to all concepts which emerged from the various interviews conducted, and which were found within the eight themes. It must be noted that most of the eight themes confirmed have various dimensions to them, which are respectively illustrated.

5.3.1 Contract management (Theme 1)

The first theme is related to the overall contract management component within the project management value chain within TETA, and it concerns the contractual agreement entered into between TETA and the various SOEs in respect of the funding which is awarded by TETA to SOEs upon their successful application for discretionary grant funding.

The structure of this particular theme is illustrated in the figure below. Further to this, this theme emanated from Question 1 which was posed to the interviewees, and which specifically dealt with the factors that impact on the SOE's ability to implement TETA-funded projects. This particular question was aimed at establishing those factors which inhibit implementation and management of skills development projects within SOEs.

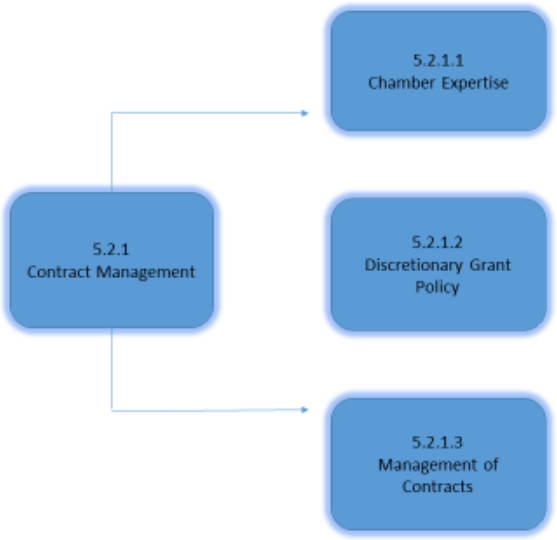

Figure 5-1: Contract management

5.3.1.1 Chamber expertise

The research study found that two specific concepts emanated significantly within this dimension; both relating to the Chamber (sub-sector) expertise of the specific industry being served by TETA as being severely lacking; and secondly, that TETA, strategically as an organisation, did not have sufficient knowledge of the industry nor the expertise of the industry to inform effective and efficient management of contracts within the various projects being funded. This is specifically indicated as an inhibiting factor to the implementation and management of projects.

As can be seen in the table below, three (60%) of the five SOEs participating indicated these two concepts within this dimension as equally inhibiting and problematic to the management and implementation of projects, as well as the fact that this was also indicated by TETA management during their focus group interview. This resulted in 67% of the six participants supporting a conclusive finding regarding the lack of TETA expertise of the industries they serve.

This finding is corroborated by Slevin and Pinto (1986), as they argue that the project management process is a complex one which requires simultaneous attention to a variety of human and technical variables to address the implementation of a project.

Table 5-2: Chamber expertise

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA lacks expertise and knowledge on industry	3	1	**Chamber Expertise**
Chamber staff are not experts in the sector they serve	3	1	

5.3.1.2 Discretionary grant policy

The TETA discretionary grant policy is the second dimension within the current theme, and emanated as an inhibiting factor towards the management and implementation of projects. Participants found the discretionary grant policy criteria too prescriptive, in the sense that it limited their options for application of programs, resulting in applications being purely compliance-driven. Two (40%) of the five SOEs indicated this concept as an inhibiting factor, as can be seen in the table. This may therefore be viewed as a fairly conclusive finding.

This finding is supported by the legislative framework, as provided by the Skills development Act 97 of 1998 (DHET, 1998), and the SETA Grant Regulations (DHET, 2012), as discussed during the literature review. These two respective pieces of legislation essentially provide and influence the criteria within the Discretionary Grant Policy.

The second concept which emanated from this dimension relates to the lack of criteria to encourage learner absorption by SOEs upon completion of projects. This arose during one interview as a contentious issue, as SOEs do not retain any learners once their training is completed. Only one (20%) of the five SOEs indicated this as an inhibiting factor to project management and implementation, as learners tend to drop out of respective programs due to the lack of employment prospects. TETA management also indicated this concept as problematic and inhibiting.

Therefore, of the six participants, two (33%) of the participants, as can be seen in the following table, indicated this concept as problematic, and therefore can be viewed as a fairly conclusive finding.

Table 5-3: Discretionary Grant Policy

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA Discretionary Grant Criteria too prescriptive	2	0	**Discretionary Grant Policy**
No TETA criteria to encourage learner absorption	1	1	

5.3.1.3 Management of contracts

Management of funding contracts within the project management value chain is the third and final dimension within this theme. This relates to the TETA discretionary grant funding contracts awarded by TETA to SOEs upon successful application for project funding. It is a legally binding contract with specific deliverables and timeframes to be achieved prior to actual funding being disbursed to the SOE by TETA.

As can be seen in the following table, four (80%) of the five SOEs indicated TETA funding contracts to be problematic and an inhibiting factor. They specifically indicated the deliverables (milestones), timeframes, and duration of contracts, as a problem and being too restrictive. This can be corroborated by Carmichael (2006), who states that planning establishes how and what work needs to be carried out, in what order, by when, and with what resources. Essentially, this aspect informs the project contract which aligns itself with the project implementation plan.

Table 5-4: Management of contracts

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA contracts, deliverables, timeframes and duration problematic	4	0	**Contract Management**

In summary, it can therefore be concluded that this finding is a conclusive one, as 80% of SOEs indicated this concept as a problematic and inhibiting factor to the management and implementation of projects within their respective organizations.

5.3.2 Economic environment (Theme 2)

The economic environment of projects is the second theme which emanated from the research study and is also related to the first question posed to the interviewees. Various economic factors emerged from the data analysis that impact on the implementation and management of projects

within SOEs; however, only one dimension was found within this theme as is illustrated in the following figure.

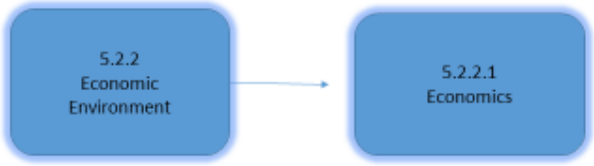

Figure 5-2: Economic environment

5.3.2.1 Economics

Within this dimension, the most significant concept indicated by all five (100%) of the SOEs was the economic impact of the various pieces of legislation which SOEs have to adhere to within the context of project management and implementation. This can be seen in the following table. Some of the legislation cited comprised the Treasury Regulations, Public Finance Management Act (PFMA), and more specifically, the Supply Chain Management Framework and regulations as contained within the PFMA. These various Acts were defined in Chapter 2 during the literature review.

The entire tender process, which SOEs as government entities (as defined) have to follow during the procurement of training providers, results in projects being severely delayed and/or cancelled even before they have commenced. This finding can therefore be viewed as conclusive.

The second most significant concept emanating within this dimension was the weak economic environment of South Africa, which has resulted in the labour unions, which are highly organised within the SOEs, inhibiting the training of youth and unemployed learners due to the current retrenchment policies of the respective organisations. It therefore results in learners being abandoned or not absorbed within organisations either during or after completion of their training. It was indicated during interviews that labour unions had significant influence on the implementation and management of projects awarded to SOEs. As can be seen in the following table, two (40%) of the five SOEs indicated this concept as an inhibiting factor, and TETA management cited this as a cause of project delays and cancellations. Therefore, of the six participants, three (50%) indicated this factor as inhibiting, and it can therefore be viewed as a conclusive finding. This particular finding is supported by the fact that currently South Africa ranks low on the Global Competitive Index 2017-2018 (World Economic Forum, 2017).

The third concept which was fairly significant was that of mandatory grants, as two (40%) of the five SOEs indicated that in fact this grant was being used as start-up capital for their various skills development projects. Mandatory grants (as defined within the Skills Development Act 97 of 1998) are received by SOEs and other stakeholders if they comply with the required legislation and criteria;

it is a separate grant applied for by SOEs and not related to the discretionary grant funding they receive for project implementation. This finding can be viewed as fairly conclusive.

Lastly, however, related to the previous concept but in a different context, is the actual reduction of the mandatory grants received by SOEs from TETA, and which therefore directly impacts their start-up capital for their skills development projects within their organisations. The mandatory grant previously was equivalent to 50% of the 1% skills development levies paid by SOEs, which was reduced by legislation to only 20% of the 1% skills development levies currently.

This emanated as an inhibiting factor to the implementation and management of their projects, as TETA does not provide funding prior to the commencement of projects. This has a significant impact on projects commencing within SOEs. This concept, however, was only indicated by one SOE which represents 20% of the five SOE participants, as can be seen in the following table. It therefore cannot be viewed as a conclusive finding.

Table 5-5: Economics

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Economic Impact of legislation adhered to by SOEs	5	0	Economics
Economic environment inhibits absorption of learners, highly unionised	2	1	
Mandatory Grant received is used as capital for projects	2	0	
Negative Impact of reduction of Mandatory Grant	1	0	

5.3.3 The learner (Theme 3)

The learner is the third theme which emanated from this research study, and which is also related to the first question asked within the interviews. The learners are significant participants within the skills development projects implemented and managed within SOEs, and there are a wide variety of concepts which emerged relating to the learner. However, there is only one dimension to this theme, as illustrated in the figure below, which will be explained further.

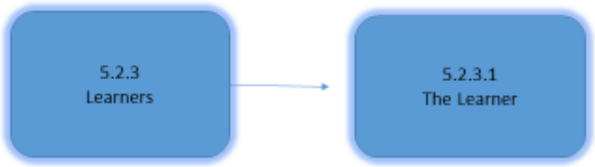

Figure 5-3: The learner

5.3.3.1 The learner

The learner is a key component within all skills development projects being implemented and managed by SOEs, and contributes significantly to the success or failure of the respective projects. A significant number of concepts emerged during the research study, as illustrated in the table below, of which some are not deemed significant as less than 25% of the participants indicated this as an impeding factor. Therefore, the researcher will provide feedback on those concepts which can be deemed a finding; i.e. exceeding at least 25% as indicated by the participants. Reference should be made to the figure below when reading the explanations provided on the varying concepts.

The first concept the researcher will address is the issue of the decline in the number of students being taken up by SOEs within their projects. Participants indicated that over the last three years, SOEs have significantly reduced the number of students on their respective projects, citing various legislative and economic reasons. This concept is also related to a previous theme on economics (section 5.2.2.1), and therefore confirms the previous finding to be reliable and valid. However, only one (20%) of the five SOEs indicated this, and it was also indicated as an inhibiting factor by TETA management. Therefore, of the six participants, two (33%) indicated this concept as a factor. It can therefore be viewed as a fairly conclusive finding.

Also related to this concept is another emerging factor related to qualified learners not being absorbed by SOEs once their training is completed, which has been previously cited in economics in section 5.2.2.1, and which therefore also confirms the previous finding to be valid and reliable. One (20%) of the SOEs cited this concept as a factor, as well as TETA management. Therefore, two (33%) of the six participants deem this concept as being a fairly conclusive finding.

The next concept concerns the pre-entry requirements of learners into industry-specific programs which are guided by legislative requirements and standards, and which are significantly high due to the complex nature of the industries. Participants stated that the high level of pre-entry requirements, such as pure mathematics and science, were deemed as difficult for potential learners to achieve, and that most learners found it very difficult to enter and/or maintain their studies, even though they had the right subjects. Only one (20%) of the five SOEs cited this as a factor; however TETA management also indicated the same concept as a challenge to the success or failure of projects. Therefore, it can be concluded that of the six participants, two (33%) cited this concept, and can be deemed as a fairly conclusive finding.

Complaints by learners regarding the non-payment of their stipends is another concept which emerged, and which is seen as quite a contentious issue by the participants, due to the fact that learners tend to report the SOEs either to TETA and DHET, or both. Learners also tend to report TETA to DHET if they believe it to be related to a TETA-funded project. Various reasons are cited for non-payment of learner stipends; however, the main complaint is normally the delayed submission of contractual obligations to TETA by the SOEs, which in turn causes delays of the payments by TETA to SOEs. This concept is a direct result of the poor management and implementation of the overall project by SOEs. Only one (20%) of the SOEs indicated this as a factor; however, this was also indicated by TETA Management, and therefore, two (33%) of the six participants indicated this concept as a factor which makes this a fairly conclusive finding.

Also related to this factor are the following two concepts which emerged; insufficient stipends and inconsistency in stipend values paid to learners, which cause conflict amongst learners on different programs. Two (40%) of the five SOEs indicated insufficient stipends as an impeding factor, and three (60%) of the five SOEs indicated inconsistency in stipend values paid as an impeding factor. Therefore, both these findings can be deemed as conclusive.

Learners have significant personal issues which emerged too, and these issues vary depending on their social backgrounds. However, it can be noted that the majority of learners are from previously disadvantaged backgrounds. Attendance at training sessions and work, maternity leave, transport constraints etc. are some of the challenges that learners need to deal with, and which directly impact the training programs and overall projects. Only one (20%) of the SOEs indicated this as a factor, as well as TETA management. This concept can therefore be viewed as a fairly conclusive finding, as two (33%) of the six participants indicated this as a factor.

The lack of SOEs providing sufficient and effective program orientation to learners prior to the commencement of their training was another emerging concept, which was indicated as a contributing factor to the management and implementation of projects by SOEs. Learners tend to drop out of programs when they realise that the program is not what they want to do or thought it was. One (20%) of the SOEs indicated this factor, as did TETA management. Therefore, two (33%) of the six participants indicated that this concept is fairly conclusive.

SOEs indicated that insufficient training was being provided to learners within their organisations due to non-participation of management and insufficient support to learners. This also emerged from TETA management as a serious concern, and which contributed significantly to the failure of projects. One (20%) of the SOEs and TETA management cited this as a factor. Therefore, of the six participants, two (33%) cited this concept as a fairly conclusive finding.

The widespread location of learners across various provinces within projects emerged as a challenge to project managers when having to monitor and manage the implementation of their respective projects. The inability of project managers to sufficiently monitor and support the learners is another factor cited by one (20%) of SOEs and TETA management. Therefore, this finding can be deemed as fairly conclusive as 33% of the six participants cited this as a factor.

Table 5-6: The learner

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Low learner stipends	1	0	Learner
Reskilling of staff within SOE	1	0	
High decline in student numbers at SOE	1	1	
Focus is turning to international training of students, nationally there is a huge decline	1	0	
Industry pre-entry requirement very high due to nature of the industry	1	1	
Learner stipend complaints to DHET	1	1	
Learner issues causing delays on projects	1	1	
Lack of orientation of learners leads to mismatch of training	1	1	
Insufficient training provided to learners	1	1	
Learners are widespread across the country	1	1	
SOE absorption of qualified learners non existent	1	1	
Learner stipend insufficient for transport and accommodation	2	0	
Low stipends cause conflict amongst learners on different programs	3	0	

In summary, the various factors affecting learners within all skills development projects, either directly or indirectly, have an impact on the actual project and the project manager's ability to implement their respective projects. As was found in the study, many of the factors are external of the organisation and are related to various themes identified within the research study.

The findings within this section are supported by the fact that the project management value chain of TETA is an "open system" as defined by Scott and Davis (2007), and learners and the environment within a project are congeries of interdependent flows of activities, and which exist within the transactional and contextual environment of the project management value chain respectively, as discussed in Chapter 2 section 2.5.3.

Due to the number of varying concepts identified within this dimension, the below illustration will assist in summarising the weighting allocated to those concepts.

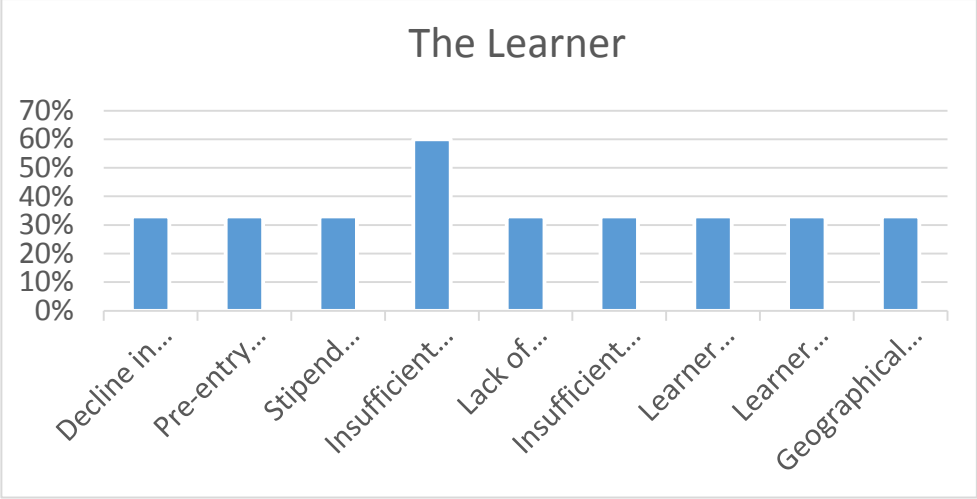

Figure 5-4: **The various weightings allocated to the concepts emerging from the l**earner

5.3.4 Legislative environment (Theme 4)

The legislative environment within which the skills development projects are implemented and managed is very complex and varying. This theme is related to the first and the second questions asked in the interviews in respect of factors which impact the implementation and management of projects, as well as the strategies which contribute to the problem. Various concepts emerged from this research study, which resulted in this theme having two dimensions, as illustrated in the figure below. The dimensions and emerging concepts will be explained further.

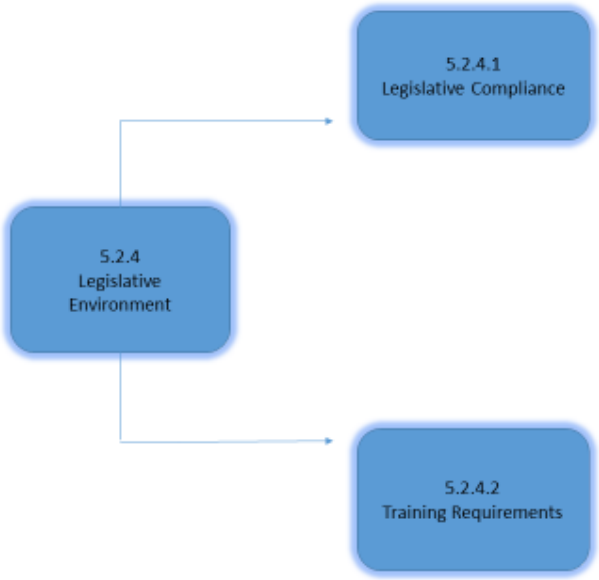

Figure 5-5: **Legislative environment**

5.3.4.1 Legislative compliance

The legislative environment within which SOEs and TETA are required to implement and manage projects is very compliance-driven, and therefore the emerging concepts within this dimension are varying and complex. The researcher will again only focus on those concepts which were indicated by more than 25% of the participants as shown in the table below. The illustration provided below will summarise the explanations and weightings allocated within this dimension.

The first concept to emerge within this dimension is SETA's financial year (which is governed by the SETA Funding Regulations); specifically as it does not align itself with the academic year of the training institutions (which are governed by the Council for Higher Education and related legislation). This results in training being delayed by SOEs, as funding from TETA only becomes available at the beginning of the TETA financial year which is 1 April of each year, and academic years generally commence in February of each year. Training can therefore be delayed for up to nine months, as learners only commence the following financial year with their training programs. One (20%) of the five SOEs and TETA management indicated this as a factor. Therefore, two (33%) of the six participants indicated this concept as a factor, and it can be deemed a fairly conclusive finding.

The concept of supply chain management legislation, which guides the procurement process within government and/or public organisations, was a significantly recurring concept that emerged. SOEs need to procure the services of training providers for their projects within the supply chain management legislation. This emerging concept was indicated by four (80%) of the five SOEs and TETA management. Five (83%) of the six participants indicated this concept as an impeding factor, which results in the concept being deemed a conclusive finding.

Adherence to industry-related legislation emerged as another impeding factor, which relates to the highly legislative operational environment of the industry. This impacts on the implementation and management of projects, specifically project costs, as SOEs require various insurances (especially in the rail and aerospace sectors) to allow learners to operate machinery and equipment, which contributes significantly to the training costs of learners. Two (33%) of the SOEs indicated this concept and TETA management. Therefore, 50% of participants indicated this concept as an impeding factor, which results in it being deemed a conclusive finding. This particular emerging concept is related to the previous one, in that the actual training programs within projects are highly regulated, and very specific to the respective industry. This concept impacts on training provision, as well as the cost of training. One (20%) of SOEs and TETA management indicated this concept, which therefore results in 33% of the six participants. This concept can therefore be deemed as a fairly conclusive finding.

The sectoral determination document, as published by the Department of Labour in South Africa, is a concept which emerged and is related to a previous concept; i.e. the learner in section 5.2.3.1. The issue with this concept is that the sectoral determination document has not been updated since 2001, and it is this document that provides the guidelines for employers for the payment of unemployed learner stipends participating in training programs.

One (20%) of the SOEs and TETA management indicated this as an impeding factor, which cuts across the project management value chain. This results in 33% of the six participants citing this concept as a factor, and therefore it can be deemed as a fairly conclusive finding.

The regulatory compliance required by industry, due to their nature and sector in which they operate, and the significant cost implications thereof, is a concept which emerged and was recurring. The fact that learners require the appropriate regulatory training in order to complete their training programs adds to the high costs employers incur during the implementation of their projects. Two (40%) of the SOEs and TETA management indicated this concept; this results in 50% of the six participants citing this concept as a factor, which makes it a conclusive finding.

Another interesting emerging concept is the fact that SOE's applications for funding from TETA are merely a matter of compliance. This resulted specifically from the fact that a certain SOE indicated that they have multiple streams of funding from various government institutions for skills development projects within their organisation. This concept was also cited by TETA management, due to the fact that project implementation within SOEs from a TETA perspective is delayed as the SOE awaits further streams of funding from the various government institutions (and which may not result in any funding at all), which then further delays commencement or results in the cancellation of projects due to insufficient funding and lack of planning. Although this concept was not recurring amongst other SOEs, the researcher finds it significant due to the size of the SOE and the total value of their projects. One (20%) of the SOEs cited this concept and TETA management, therefore 33% of the six participants cited this concept, and it can therefore be confirmed as a fairly conclusive finding.

There are three particular concepts within this dimension which were cited by TETA management only, and these relate to the fact that TETA has a focus on compliance with legislation and achievement of targets, often to the exclusion of the quality of operations and related outcomes. TETA's monitoring of projects within SOEs also only applies to the SOE's compliance with legislation and meeting targets, and this also applies to TETA internally within its operations. Applying the rule of 100% weighting to this concept is therefore prudent, as the lack of a quality focus has a tremendous impact on the whole project management value chain and its outcomes and impact, and therefore this is a conclusive finding.

The following emerging concept was recurring, and focuses on the trade test certification of learners participating in industry-specific apprentice programs, which are highly regulated within the specific industry's legislative environment, as well as by the National Apprentice Monitoring Body (NAMB). The delays experienced by SOEs in retrieving the final learner's trade test certificates, and which are required by TETA to make final payment on projects, is a significant impeding factor. Three (60%) of the five SOEs and TETA management cited this concept, and therefore it can be deemed as a conclusive finding.

The final emerging concept within this dimension was a recurring one, and refers to the highly specialised skills set required of the industry for individuals. This concept is related to the highly

technical and legislative requirements of the various sub-sectors in the industry, and learners have to adhere to, and meet, these skills requirements in order to become employable. Three (60%) of SOEs and TETA management cited this concept, which results in 67% of the six participants. This concept can therefore be deemed conclusive.

All the above findings within this section can be supported by the fact that legislation and/or legal aspects are found within the contextual environment of a project or "open system", as defined by Scott and Davis (2007), and which have an impact on the "system" as a whole.

Table 5-7: Legislative compliance

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
SETA Financial year not synchronised to academic year of institutions	**1**	**1**	**Legislative Compliance**
Supply Chain Management Legislation inhibits implementation	4	1	
Adherence to Industry subsector related legislation	2	1	
Training very highly regulated and industry specific	1	1	
Sectoral Determination document outdated	1	1	
High cost implications on industry regulatory compliance	2	1	
SOE DG funding application a matter of compliance	1	1	
TETA focus on compliance not on quality	0	1	
Trade test certification of learners delays payment from TETA	3	1	
TETA Monitoring only compliance not quality of provision	0	1	
Monitoring of projects not effective, purely compliance	0	1	
Subsector industry has very specialised skills set	3	1	

In summary, as illustrated in the figure below, the legislative requirements and associated concepts which emerged within this dimension are very complex, and some of the pieces of legislation could be seen as being in conflict with one another, which becomes problematic for project managers both

in SOEs and TETA. The cost implications of being compliant with all legislation seem to have a direct impact on the costs of the training, which will be addressed further within this chapter.

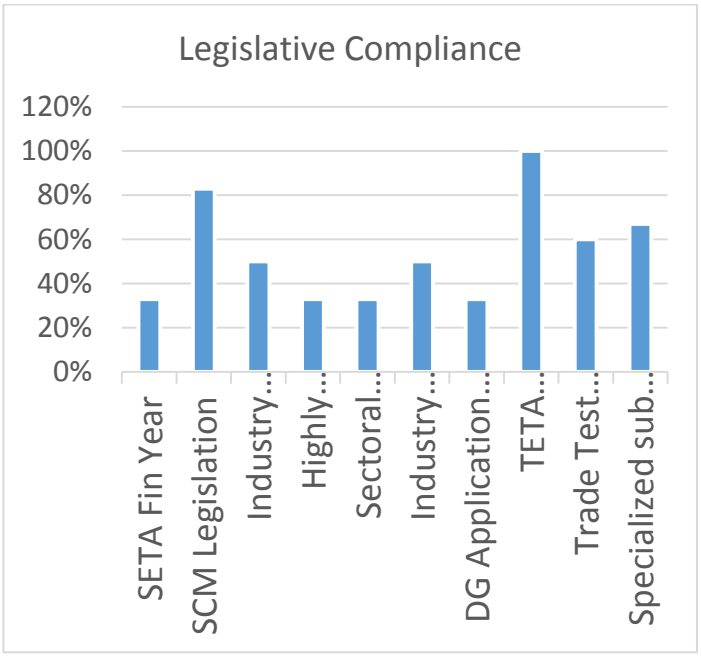

Figure 5-6: Weightings allocated to concepts within the dimension of legislative compliance

5.3.4.2 Training requirements

This particular category forms the second dimension of this theme, and the concept emerging from it was a recurring one as can be seen in the following table. It relates to the high barriers to entry into occupations or jobs within the operational sphere of the industry, as the skills required within the industry are highly specialised and very demanding.

SOEs in particular cited this emerging concept as a challenge when it comes to sourcing and appointing the right calibre of learners; this relates to a previous concept raised, i.e. the learner in section 5.2.3.1. This correlates, as the high specialisation requirements and the nature of the occupation often lead to the learners not successfully completing their programs, which negatively impacts on the implementation and the management of projects.

As seen in the following table, three of the five SOEs and TETA management cited this concept as an impeding factor. It can therefore be deemed as a conclusive finding, as 67% of the six participants concur. This finding is also supported by the legislative aspect which falls within the contextual environment of the project as an open system as defined by Scott and Davis (2007) as well as Ng *et al.* (2009) who state that a system is a coherent whole; such that the boundary is perceived around it in order to distinguish its external and internal elements.

Table 5-8: Training requirements

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Industry commanding highly specialised people	3	1	**Training Requirements**

5.3.5 Politics (Theme 5)

This particular theme is a very sensitive, yet a critical one. This theme emanates specifically from a TETA perspective, and it relates to the continuous funding being awarded to SOEs that do not implement and manage projects awarded to them previously. This particular theme is related to the first and second questions asked in the interviews, and it only has one dimension to it. This dimension will be explained further.

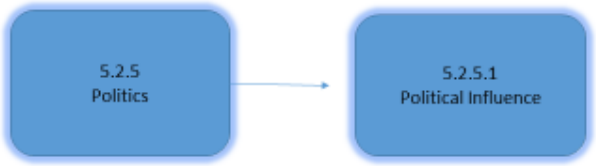

Figure 5-7: Politics

5.3.5.1 Political influence

Within this particular dimension, the emerging concept is related to the perceived political influence during the allocation and awarding of funding to SOEs by TETA. This was cited as an impeding and resultant factor within the management and implementation of projects awarded to SOEs. One of the discretionary grant criteria applied by TETA, when allocating funding to any qualifying stakeholder, is the past performance of projects. If stakeholders have not managed and implemented previous projects successfully, the awarding of further funding to these stakeholders increases the risk of non-disbursement of associated funding for TETA, and strategic goals and objectives of TETA are not achieved as per the TETA Strategic Plan discussed in Chapter 2 during the literature review.

The key critical factor within this concept is that SOEs are some of the largest skills development levy contributors to TETA, and therefore they are continuously being awarded more funding, even though their performance within the context of this research study has been historically poor. Management is constantly under pressure by SOEs, and subsequent influence by the Board, to award SOEs funding, as they could transfer their skills development levies contribution to another SETA if they do not receive the funding or part thereof as applied for; yet another risk for TETA.

This concept was cited by TETA management only, as seen in the following table, and therefore the 100% weighting rule applies. Therefore this concept is a conclusive finding due to the high risks associated with it for both TETA and SOEs within the project management value chain.

This finding within the context of a system is supported by Senge (1990) and systems thinking as the fifth discipline of creating a learning organisation. It is a framework utilised to analyse patterns within organisations, and to analyse patterns within interrelationships that underlie complex situations, such as the political aspects of the project management value chain which falls within the contextual environment of the project management value chain as a "system".

Table 5-9: Political influence

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Political influence on allocation of SOE funding	0	1	**Political Influence**

In summary, this particular dimension can be considered as politically sensitive; however, as indicated in Chapter 2 during the literature review, SOEs do play a significant role within the economy of the country and they are large employers which should be contributing effectively and efficiently to the employment and up-skilling of learners.

5.3.6 Project management (Theme 6)

Project management is the sixth theme to emanate from this research study, and relates to the first and second questions predominantly asked in the interviews. The theme emerged with a variety of dimensions, as it focuses on a very complex system, which the study found to be interconnected and related; namely, the project management value chain. This could be seen as perhaps one of the core themes to emanate from this research study, and which is directly associated with the subject of the research title of this study. This theme must be viewed as a "system", as it is the theoretical framework of this research study, and the dimensions as components within the system, which are interrelated and as supported by Dyehouse *et al.* (2009), who state that the systems thinking approach captures the complex relationships within multifaceted programs, as will be discussed further below.

Further to the above, and as corroborated by PMBoK (2008), the critical foundation for any successful project is the planning thereof, and the project management plan is the primary source of information pertaining to how a project is planned, implemented, monitored and concluded. As will be seen in the findings below, the lack of planning and needs analysis conducted overall provides a significant indication that all the dimensions listed within this theme are due to insufficient planning by both TETA and SOEs.

This theme has five dimensions, which will be further explained.

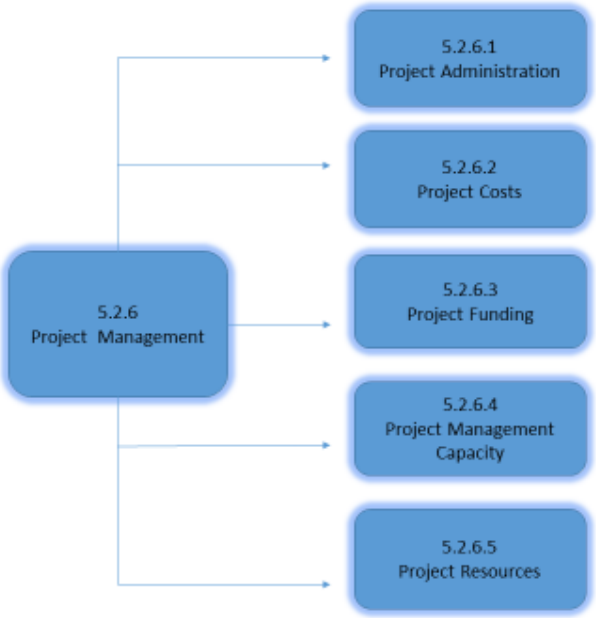

Figure 5-8: Project management

5.3.6.1 Project administration

Within this dimension, namely project administration, two concepts emerged which relate to the administration of the actual projects, both within SOEs and TETA. These two concepts focus on the administrative processes and infrastructure both within SOEs and TETA, due to the volume of documents required to facilitate the actual disbursement of funding as per the funding contracts entered into by both parties.

SOEs cited this concept, as they find it difficult to manage the volumes and variety of documents required; and secondly, the actual control of the documents by both parties, which directly affects the auditing process of the verifiable documents as submitted by the SOEs, both by DHET and the Auditor General. Both the SOEs and TETA management cited the loss and lack of control of documents, as both parties continuously seem to request for resubmission of documents either way, and which strains the administrative process.

These two concepts both carry the same risk for TETA, as it directly impacts the disbursement of funding and the ability of TETA to report the funded learners in line with TETA Strategic Plan's goals and objectives, which if not done accordingly, raises serious audit findings for TETA by the Auditor General.

As per the literature review in Chapter 2, section 2.4.3, the identification and management of risks within a project is critical to the success of the project, and hence this theme as an identified risk is directly related to the reporting of performance information to DHET and the Auditor General.

Two (33%) of the six participants cited the processes and infrastructure as critical, therefore this concept can be viewed as a fairly conclusive finding. However, the second concept related to document control, was cited by 50% of the six participants, which therefore deems it a conclusive finding.

Table 5-10: Project administration

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Administrative processes and infrastructure critical.	2	0	**Project Administration**
Insufficient document control within SOE and TETA	2	1	

In summary, the project documents and deliverables as submitted by the SOEs to TETA to support the disbursement of the associated funding are problematic. They must be valid, reliable, authentic, and aligned to the contract in question. The documents must meet the DHET validation framework requirements, and the related learners and training program being implemented. Therefore, the associated processes and controls need to be aligned, and it seems to the researcher that the misalignment is due to a lack of standard operating procedures and systems within both the respective organisations which are party to the projects, in order to control and manage this component within the project management value chain.

5.3.6.2 Project costs

The high labour costs is a concept which emerged within this dimension, and which was cited by SOEs as a significant contributor to the high operational costs incurred, which has a direct impact on the project costs in order to implement training programs within their respective organisations. In order for learners to be accommodated within the projects, there are various operational and legislative compliance requirements which the learners need to adhere to, and which contribute to the high labour costs incurred by the SOEs. Two (40%) of the five SOEs cited this concept as an impeding factor to the management and implementation of their projects, which results in 33% of the six participants. This concept can be viewed as a fairly conclusive finding.

The study found that this emerging concept is related to the two previous findings, as established in legislative requirements in section 5.2.4.1, and within training requirements as found in section 5.2.4.2. Both these previous findings relate to, and influence, the cost of project implementation by SOEs.

Table 5-11: Project costs

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
High labour costs a significant component of operational costs within SOEs	2	0	**Project costs**

5.3.6.3 Project funding

The overall funding of projects is a critical component within any project management value chain, and this dimension has a varying number of concepts which emerged during the interviews, which can be seen in the following table. The researcher will focus on, and explain further, those concepts which were cited by more than 25% of the participants. Further to this, the figure below will assist in summarising the weightings allocated to the concepts explained within this dimension.

The first concept cited within this dimension, the continuous funding of SOEs by TETA irrespective of their performance, was not a recurring concept, but one cited by TETA management, and which is directly related to a previous concept which emerged in section 5.2.5.1, Political Influence. As TETA is the only funder of skills development projects, as per the Skills Development Act 97 of 1998 within the context of this study, this concept is considered as a conclusive finding when applying the rule of 100% weighting. This concept forms a critical component of the entire project management value chain within SOEs, and is a significant risk to TETA as it impacts on project performance and on the poor disbursement of associated project funding.

The next concept that emerged repeatedly is related to the various government funding streams which SOEs have access to for their skills development projects. The main issue with this concept is that SOEs do have access to further funding; however, the application for this funding and the receipt thereof is not guaranteed, nor are the various streams of funding aligned time-wise. Four (67%) of the six participants cited this concept, and it therefore can be deemed as a conclusive finding.

The following concept is related to the previous concept as stated above, and to a concept raised in legislative requirements in section 5.2.4.1. SOEs apply for funding to the various government streams; however, they do not always receive what they apply for. They therefore apply to TETA, even though they have made similar applications to the various government streams, and it has been previously found that the application to TETA is viewed as purely due to legislative compliance. This in turn, is also is a contributing factor to the planning component within the management and implementation of projects. Two (40%) of the five SOEs indicated this as a factor, and therefore 33% of the six participants. It can be deemed as a fairly conclusive finding.

The study found the next concept that emerged significant, in that the TETA funding model does not support start-up capital for the implementation of projects. This is directly related to the SETA

funding regulations, as well as the fact that the Auditor General views this concept as a risk to TETA in disbursing funding without any project activity occurring. Therefore, the TETA funding model does not permit upfront payment of funding to cover the start-up costs of any projects. Two (40%) of the five SOEs indicated this factor as impeding and delaying the implementation of their projects, as well as TETA management. Some 50% of the six participants therefore cited this concept, and it is deemed a conclusive finding.

The next concept which emerged is also related to the various concepts cited above within this dimension, and that is that the SOE funding model for their projects is unique and problematic. SOEs depend on various streams of funding for their projects, which are not conducive to the planning, budgeting and implementation of their respective projects. Three (60%) of the five SOEs cited this concept as an impeding factor to project implementation; therefore 50% of the six participants. This finding can be viewed as being conclusive.

Rescindment of contracts due to a lack of appropriate funding for SOEs is a concept which emerged and was cited by two (40%) of the five SOEs as an impeding factor. This relates to the funding applications which are submitted to TETA by the SOEs, and the resulting award of funding not being exact to the application received by TETA. The study found that SOEs do not compile or inform their applications diligently, nor do they apply the TETA funding model to their applications. This non-alignment will therefore result in varying amounts being awarded by TETA. It was also found that SOEs apply for large numbers of learners which are not informed by means of a thorough needs analysis, based on historical performance of certain SOEs, and therefore when TETA allocates funding, there generally is a reduction by TETA on the funding being awarded. Again, the study found that this is partly due to TETA managing the risk of non-disbursement of the associated funding, and to appease the SOEs in relation to the other finding of political influence as discussed in section 5.2.5.1.

The TETA funding model is insufficient to cover actual training costs, and this was a recurring emerging concept across five (100%) of the SOEs, therefore 83% of the six participants cited this concept as an impeding factor to implementation of projects. It can therefore be deemed as a conclusive finding. This concept relates to the TETA funding model not covering the actual costs of training incurred by SOEs and the fact that the funding model is not specific to the SOE's technical and legislative requirements, as cited in legislative requirements section 5.2.4.1 and training requirements in section 5.2.4.2, but is rather more generic to accommodate all stakeholders across the transport sector.

The misalignment of the TETA funding process and financial year, and that of the various government funding processes and financial year, is problematic. Two (40%) of the five SOEs cited this concept. It emerged during the study that the various pieces of legislation which govern the various funding opportunities for SOEs is a contributing factor to this concept.

The SOEs lack of understanding of the TETA funding model is a concept which was cited by one (20%) of SOEs and by TETA management; therefore two (33%) of the six participants. This concept can be deemed a fairly conclusive finding.

The following emerging concept, the payment of project funding only after commencement of the actual project, is related to a previous concept cited within this dimension; that of lack of start-up capital, and the fact that TETA will only disburse at least 20% of funding (as per contract requirements) once the learners have been registered with the training provider or institution, and the relevant learner documentation and the proof of training provider accreditation has been submitted to TETA. This in fact also requires confirmation by TETA when they conduct a site visit to the project location. No funding is disbursed to SOEs by TETA prior to the above contractual requirements being met. This concept is an impeding factor to SOEs on the commencement of project implementation, as cited by two (40%) of the five SOEs and TETA management, therefore 50% of the six participants. This concept can be viewed as a conclusive finding.

Lastly, but related to a few of the previous concepts emerging within this dimension in the following table, is the need for both TETA and SOEs to have a contingency budget available for SOEs to enable the commencement and implementation of their respective projects. Some 100% of all six participants cited this concept as an urgent need to assist with the implementation and management of projects within SOEs. This concept can therefore be deemed as a conclusive finding.

However, related to the above concept and which was only cited by TETA management is that SOEs have sufficient budget to implement their projects without having to apply to TETA for funding, as they have access to multiple streams of funding, and that SOEs simply do not budget and plan efficiently and therefore apply for funding to TETA purely out of compliance. This concept is allocated the 100% weighting rule, and is therefore a conclusive finding.

Table 5-12: Project funding

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Insufficient TETA funding to support implementation of projects	1	0	**Project Funding**
Continuous TETA funding even if SOE do not perform	0	1	
SOEs receive multiple funding streams for projects	3	1	
Government funding received is not what is applied for	2	0	
TETA funding model does not allow for project start-up capital	2	1	

SOE has a unique funding model as they depend on government subsidies	3	0	
Many projects rescinded due to lack of appropriate funding	2	0	
TETA funding model not sufficient to cover costs of required training	5	0	
TETA funding process misaligned to government funding	2	0	
SOE lack of understanding on TETA Funding Framework	1	1	
TETA payment of funds after project implementation is an inhibiting factor	2	1	
Contingency fund required for SOE's	5	1	
SOEs have sufficient budget	0	1	

In summary, there are various emerging concepts within this dimension of project funding; many related and equally impeding factors on the overall management and implementation of projects; some more than others. Project funding essentially is a critical factor to the success of any project, and needs to be accurately and sufficiently informed prior to the commencement of a project.

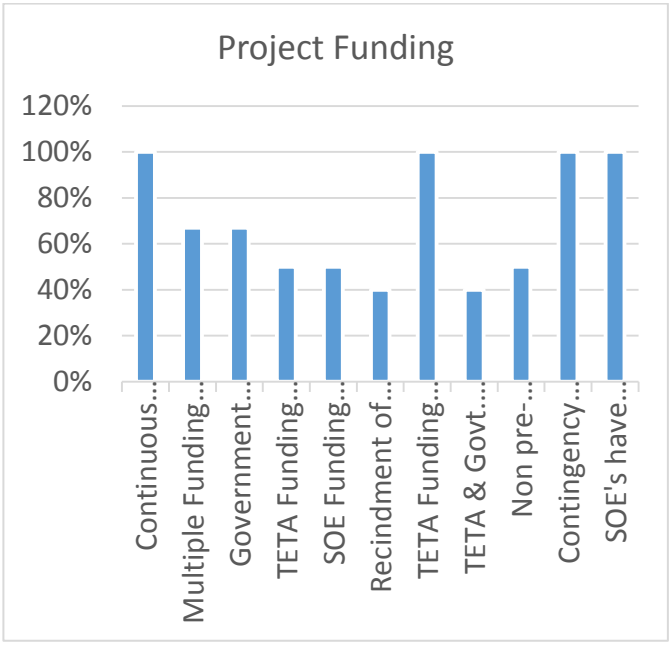

Figure 5-9: Weightings allocated to the various concepts within the dimension for project funding

5.3.6.4 Project management capacity

The third dimension to this theme, as illustrated in following table, is that of the SOE's capacity to manage and implement their respective projects within their organisations. This is related to various concepts emerging during the interviews conducted, which have an impact on the projects. These are explained further below.

The first emerging concept within this dimension is related to the lack of overall capacity within SOEs to manage their projects, as three (60%) of SOEs cited this concept as well as TETA management; therefore 67% of all six participants. This can be viewed as a conclusive finding.

The high turnover of skills development facilitators and their lack of capacity was also cited as an emerging concept by four (80%) of SOEs and TETA management; therefore 83% of all six participants. This can be viewed as a conclusive finding.

This concept was cited by TETA management only, which relates to the fact that SOEs do not have project management capacity to manage the projects funded by TETA. TETA project managers indicated in the interviews that the project managers they deal with within SOEs do not have the skills and understating of project management and this has a direct impact on the implementation of projects within SOEs. The 100% weighting rule applies to this concept. It is therefore a conclusive finding.

The lack of support to the project manager within SOEs by the overall management and leadership of the organisation emerged as a recurring concept in three (60%) SOEs and TETA management; therefore 67% of all six participants. This emerging concept is related to the fact that the project managers interviewed indicated their frustration at the lack of strategic support within the organisation in that line managers do not release learners to attend training, as well as the appropriate project resources not being made available to the project manager to facilitate and manage the implementation of any skills development projects.

Table 5-13: Project management capacity

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Lack of project management capacity within SOE's	3	1	**Project Management Capacity**
SDF capacity within SOE's problematic - high turnover of SDF's, no proper project handover	4	1	
SOE's have a project management capacity issue	0	1	
Lack of support to Project Manager within SOE's	3	1	

5.3.6.5 Project resources

The final dimension within this theme focuses on the project resources within the project management value chain. Two concepts emerged from this dimension during the interviews conducted, as shown in the table below. These will be explained further.

The first concept that emerged was related to the lack of internal systems within TETA to support efficient project management and reporting of associated data from a TETA perspective. Although this was not a recurring concept by SOEs, it was cited by TETA management. The 100% weighting rule applies here, and it is considered a finding. The impact of the systems within TETA affects all partners within the entire project management value chain.

The second concept that emerged was related to the shortage of trade instructors within the industry that were available and qualified to train the technical aspects of the training programs being implemented within SOEs. This also emerged from a TETA management perspective, as it was found that the lack of instructors impacts on the project implementation and its ultimate completion. One (20%) of SOEs indicated this concept as did TETA management, therefore, 33% of the six participants. This concept can be deemed as a fairly conclusive finding.

Table 5-14: Project resources

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA internal systems are lacking to support efficient project management	0	1	**Project Resources**
Shortages of aviation trade instructors - resource issue	1	1	

In summary, this particular theme is a very complex one, with a range of varying concepts emerging, and which the study found to be interrelated or interconnected within the complex system of the project management value chain.

5.3.7 Strategy and leadership (Theme 7)

Strategy and leadership is the next theme which emerged, and is related to questions two and three asked during the interview process. Five dimensions were found within this theme; some are related within the context of this research study, as illustrated in the figure below. Each of the dimensions will be further explained.

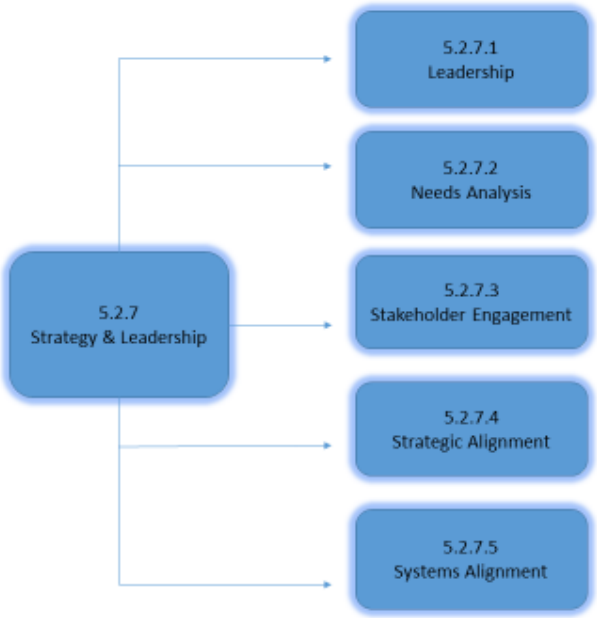

Figure 5-10: Strategy and leadership

5.3.7.1 Leadership

This dimension addresses leadership-related emerging concepts as can be seen in the table below, both from an SOE's perspective, as well as from a TETA management perspective, and within the context of this research study.

This first emerging concept was TETA's leadership not understanding the challenges being experienced by SOEs in applying the TETA funding model, which is also related to a previous emerging concept from the dimension relating to project funding in section 5.2.6.3. These two concepts are related in that the challenges being experienced applying the TETA funding model by SOEs is not being addressed by the leadership and management of TETA, and which directly impedes the SOE's ability to manage and implement their projects. Two (40%) of the SOEs cited this concept, therefore 33% of the six participants. This concept can be deemed a fairly conclusive finding.

The decision-making process within TETA is another concept which emerged and was recurring, and is related to the fact that TETA management and leadership do not consult the sub-sector industries which they serve. This results in decisions being made relating to policy and strategy development in the absence of consultation, and which are found to be counterproductive to the implementation and management of projects. This concept was cited by three (60%) of the five SOEs; i.e. 50% of the six participants. It can therefore be deemed a conclusive finding.

Leadership and management within SOEs are not conversant with the organisation's operational challenges, and this particularly relates to them not developing and implementing strategies to

support the management and implementation of projects within their respective organisations. This concept also relates to a previous concept cited in project management capacity in section 5.2.6.4. Two (40%) of SOEs and TETA management cited this concept; i.e. 50% of the six participants. This concept can be deemed as conclusive.

The following concept, the bureaucratic processes found internally within SOEs, refers to the lengthy decision-making processes implemented by management and leadership (and the lack thereof) within the organisations within the context of the project management value chain that delays and impedes the implementation and management of projects. Three (60%) of SOEs and TETA management cited this concept as an impeding factor. It can therefore be deemed as a conclusive finding.

The next concept which emerged is that the various support units within TETA do not understand their strategic role within the broader context of the project management value chain, and this relates to the impact of their performance or non-performance on the other components within the system. During the interviews conducted, management had raised this concept due to the lack of integration and understanding of the various support units within TETA on the broader aspects of the management and implementation of the projects within SOEs from TETA's perspective. It must be noted however, that one (20%) SOE also cited this concept, and it can be deemed as a fairly conclusive finding as 33% of the six participants concur.

The last concept emerging from this dimension is that the various business units within SOEs do not always release their staff (including learners) to attend training programs related to funded projects. This is also related to a previous concept raised in project management capacity in section 5.2.6.4. One (20%) SOE cited this concept, as did TETA management, as one of the reasons given by SOEs when amending timeframes of contracts is that learners are not always available to attend classes as required. Some 33% of the six participants concur, and it can be deemed as a fairly conclusive finding.

Table 5-15: Leadership

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Lack of TETA leadership understanding of the funding problem	2	0	**Leadership**
Decision making in TETA problematic, in that its top down, chamber / industry not consulted	3	0	
Leadership within SOE not conversant with operational challenges	2	1	
Bureaucratic processes within SOEs very problematic	3	1	

Different units within TETA do not understand their impact when delivery is lacking internally	1	1	
Lack of support from SOE business units - releasing staff for training	1	1	

In conclusion to this dimension, the study found that the lack of strategic leadership, and the understanding of leadership of the implications of the concepts emerging from within their respective organisations, has a profound impact on the project manager's ability to effectively and efficiently manage the overall project management value chain.

The literature reviewed in Chapter 2 clearly corroborates the lack of leadership emanating from the above findings within this theme, as Kaulio (2008) states that leadership refers to a process of directing, visioning, motivating and developing people, which clearly is not the case within the respective organisations here. Pinto (1998) further recognises the attributes of a project leader to be credibility, problem solving, flexible in management, an effective communicator. The project manager is a person who requires the skills of budgeting, administration and leadership, which according to the above findings, seem to be lacking within all respective organisations.

5.3.7.2 Needs analysis

The second dimension to this theme is that of needs analysis within organisations. Varying concepts emerged from the interviews conducted and which were recurring, as can be seen in the table below.

The fact that SOEs do not conduct a thorough needs analysis of the skills required within their organisations was a recurring concept. This relates to the lack of understanding of what skills are in fact required operationally within their organisations and what training programs should be introduced to address those needs. Three (60%) of SOEs and TETA management cited this concept; i.e. 67% of all six participants. This concept can be deemed a conclusive finding.

The next concept emerging related to the previous one above, and which was also a recurring one, is that SOE's discretionary grant applications submitted to TETA for project funding are not informed by a needs analysis, and this is also related to project funding in section 5.2.6.3. Three (60%) of the SOEs and TETA management cited this concept, i.e. 67% of all six participants. This is a conclusive finding.

This particular concept was a very interesting one that emerged during the interviews, and it has been confirmed by SOEs that their skills development targets to be achieved each year are in fact set and instructed by the Department of Transport. In the researcher's view, it seems that this relates to, and supports, the previous concept of needs analysis not being thorough or conducted at all within SOEs, as their targets are provided to them. The study found that SOEs could not elaborate on what informs the targets which are provided to them by the Department of Transport. Two

(40%) of SOEs and TETA management cited this concept as an impeding factor; i.e. 50% of the six participants. This concept is a conclusive finding.

Another related concept which emerged is that there is no proper integration of the needs analysis (if conducted) to the demand and supply of the skills required within their respective organisations. This concept is also related to leadership in section 5.2.7.1 and to strategic alignment in section 5.2.7.4. Three (60%) of SOEs and TETA management cited this concept, i.e. 67% of all six participants. This concept is a conclusive finding.

The last concept which emerged and which is related to the previous concept above, as well as legislative compliance in section 5.2.4.1, is that TETA's targets, as contained in the TETA Strategic Plan and Annual Performance Plan, are also instructed by the Department of Higher Education and Training on an annual basis, or rather negotiated without any industry consultation. Two (40%) of SOEs and TETA management cited this concept; i.e. 50% of all six participants. This concept is a fairly conclusive finding.

Table 5-16: Needs analysis

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
No thorough needs analysis is conducted by SOE's,	3	1	Needs Analysis
DG applications not linked to actual organizational needs	3	1	
Targets set for SOEs by Dept. of Transport not based on needs analysis	2	1	
No proper integration by SOEs to needs analysis, demand or supply.	3	1	
TETA targets are instructed from DHET, not based on actual industry needs.	2	1	

In summary, it seems that targets are ill informed and imposed on SOEs and TETA to achieve without any consultation with industry. The study found one fundamental flaw with this approach during the interviews, as it appears the targets allocated are not informed by an industry needs analysis, and/or industry requirements. There seems to be a mismatch of actual numbers required and actual training programs required. This theme in fact also relates to the learner in section 5.2.3.1.

The lack of conducting a thorough needs analysis to inform applications for funding to TETA can be viewed as the study found as primarily the core of the project planning problem within SOEs. This can be corroborated by PMBoK (2008) which states that project planning is the foundation of a

project and the project management plan which should be informed by a needs analysis of the organisation's skills development needs.

5.3.7.3 Stakeholder engagement

This is the third dimension, and focuses on stakeholder engagement within the context of this research study. Three concepts emerged during the interviews and are listed in the table below.

Insufficient collaboration between SOEs and the respective Chambers within TETA was an emerging and recurring concept. This also relates to leadership in section 5.2.7.1 above. This concept emerged due to the fact that overall, there is a misalignment of organisational strategies for skills development, the misalignment of associated legislations within the context of this study, as well as an overall lack of collaboration in the implementation of projects. SOEs believe that TETA do not take their needs into consideration when decisions on related strategies are made. Four (80%) of SOEs and TETA management cited this concept; i.e. 83% of all six participants. This concept is a conclusive finding.

Limited industry participation within TETA is another emerging and recurring concept, and which relates to the fact that opportunities for industry to participate in consultative sessions is very limited, and that which is shared by industry with TETA does not necessarily result in positive informed outcomes when it comes to strategy and processes within the context of this research study. It was also cited by various SOEs that their industry representatives within the structures of TETA's organisation are not effective and do not inform the strategies within TETA as required. Three (60%) of SOEs cited this concept as an impeding factor; i.e. 50% of all six participants. This concept is a conclusive finding.

Lastly, the overall lack of formal structured partnerships between TETA and SOEs was an emerging concept, as the view exists within SOEs that if there was a more structured partnership established, the engagement and consultative process would be better structured, which would inform and support more effective and efficient project implementation and management across the entire value chain. Three (60%) of SOEs cited this concept; therefore 50% of all six participants. This concept is a conclusive finding.

Table 5-17: Stakeholder engagement

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Insufficient collaboration with Chambers	4	1	**Stakeholder Engagement**
Limited industry participation within TETA	3	0	
Lack of partnership and collaboration between TETA and SOEs	3	0	

The various concepts emerging from this dimension, i.e. stakeholder engagement, seem to indicate that it is a powerful category which significantly influences all aspects of the project management value chain and would encourage alignment of the respective organisational strategies. This category also relates to a previous dimension, namely leadership in section 5.2.7.1.

5.3.7.4 Strategic alignment

Strategic alignment within the project management value chain is the fourth dimension within this theme, and a multitude of varying and interrelated concepts emerged during the interview process as listed in the table below. The study found this particular dimension to be a very complex. The researcher will address those concepts which were cited by more than 25% of the participants. In order to assist the reader to summarise the weightings allocated to the concepts discussed within this dimension, refer to the figure below.

As per the literature reviewed regarding project management in Chapter 2, the findings within this dimension, i.e. strategic alignment, are supported by Aubrey et al. (2007) who state that innovation is essential to the survival of organisations. This means that the largest part of an organisation's strategy is to develop new services and processes, and therefore projects have become more important in the quest to reach strategic objectives, and thereby strategic alignment of the organisation is paramount.

The first concept emerging from this dimension relates to the organisational leadership's lack of support for the organisational strategy. The various project managers interviewed indicated that in some instances, leadership did not understand their organisational strategy in order to support it. This contributed to the lack of support and understanding on the developmental needs of the organisation. This particular concept is also related to project management capacity in section 5.2.6.4 and strategy and leadership in section 5.2.7.

Three (60%) of the SOEs and TETA management cited this concept; i.e. 67% of all six participants. The concept can be deemed a conclusive finding.

The next emerging concept relates to the organisations' better defining their developmental needs, as this would better inform and define the skills development projects SOEs apply for. This also relates to the needs analysis in section 5.2.7.2. In fact, the study found that this concept is a consequence of the first emerging concept within this dimension. One (20%) SOE and TETA management cited this concept; i.e. 33% of all six participants. This is a fairly conclusive finding.

The alignment of the transport sector skills plan (SSP) to include the skills development needs of the SOEs is a concept which emerged. This relates to the fact that TETA utilises the SSP as a guide to identify the type of projects and number of learners that should be funded within the transport sector. Participants interviewed indicated that their skills needs and requirements did not feature strongly enough within the sector skills plan, and therefore they were not being funded accordingly. Two (40%) of SOEs and TETA management cited this concept; i.e. 50% of all six participants. This is a conclusive finding.

The next concept relates to the SOE's ineffective financial planning within the context of skills development, and therefore this relates to a previous concept raised in project funding in section 5.2.6.3 and strategy and leadership in section 5.2.7. The study found that due to the lack of organisational leadership understanding their own strategy, the skills development needs were not effectively identified. This therefore results in insufficient financial planning. The consequence of this is that projects are being rescinded, or there are delays in the commencement of projects, as skills needs are not identified. However, the critical impact is the learner, as emerged in section 5.2.3.1. Three (60%) of SOEs and TETA management cited this concept; i.e. 67% of all six participants. This concept is a conclusive finding.

The lack of alignment of the SOE's organisational strategy to a skills development and training strategy within the SOE became quite apparent during the interviews conducted, as all SOEs had no specific skills development strategy in place, and therefore there is no alignment with the organisational strategy. This concept is related to strategy and leadership in section 5.2.7, and was cited by five (100%) of SOEs and TETA management; i.e. 100% of all six participants. This is a conclusive finding.

Following the previous concept, the alignment of the TETA strategy to include the skills development strategies of SOEs is a concept which emerged and which was recurring. However, the study found that due to the lack of skills development strategies or plans within SOEs, alignment of SOE strategies with TETA's strategy would be difficult to achieve. However, the study found that the achievement of this concept would be greatly beneficial to the project management value chain. Three (60%) of SOEs and TETA management cited this concept; i.e. 67% of all six participants. This is a conclusive finding.

The misalignment of the TETA funding model to actual training costs incurred by the SOEs is a concept which emerged and was recurring. This concept is related to project funding in section 5.2.6.3. The study found that project managers seek alternative funding streams from various government departments to top up the funding received by TETA in order to successfully implement

their projects due to the fact that the TETA funding was insufficient. Three (60%) of SOEs cited this concept, i.e. 50% of all six participants. This is a conclusive finding.

The inability of SOEs to define their organisation's future trajectory and skills needs is a concept which emerged. This relates to the ever changing technological environment within the industry which directly impacts the skills required by the various occupations within SOEs specifically. With the changes in the technologies and equipment, and the SOEs not being able to define their future business strategy, it makes it difficult to implement the training required within their organisations. This particular concept is also related to training infrastructure in section 5.2.8.3. This study found that the training infrastructure relating to the occupational qualifications and related technical equipment were outdated, and not aligned with the current nor future technological changes occurring within the industry. Two (40%) of SOEs cited this concept; i.e. 33% of all six participants. This is a fairly conclusive finding.

This particular concept which emerged is recurring and a politically sensitive one, relates to the union representatives within SOEs. These representatives represent their unions on the TETA Board. However, the specific concept which emerged was that the union representatives would support the approval of specific strategies within the context of the project management value chain at the TETA board, but when it comes to the actual alignment and implementation of these strategies within the various SOEs, they tend not to support it, and the union representatives come across as conflicted. This concept was cited by three (60%) of SOEs and TETA management; i.e. 67% of all six participants. This is a conclusive finding.

This particular concept was cited by TETA management only, and is related to the fact that SOEs' project implementation is not aligned with the timeframe of the TETA funding window, and therefore the allocation of funding and the disbursement thereof is delayed for long periods to coincide with other funding streams. The 100% weighting rule applies to this concept, and it is therefore a conclusive finding.

The non-alignment of key performance indicators (KPAs) of TETA staff within their performance appraisals to the project management value chain was also cited by TETA management as an impeding factor to the entire management of projects within the organisation, including those SOE projects being funded by TETA. The weighting rule of 100% is applied to this concept, and it is therefore a conclusive finding.

The non-strategic alignment of project management capacity with the high demand and increase of projects was a very passionate concept which emerged from certain SOEs. This relates to the fact that leadership within certain organisations did not support the skills development projects, nor did they provide the necessary resources and capacity to the responsible project manager. This in fact is related to project management capacity in section 5.2.6.4 and strategy and leadership in section 5.2.7. Two (40%) of SOEs and TETA management cited this concept; i.e. 50% of all six participants. This is a conclusive finding.

The inability of SOEs to strategically apply for project funding is a concept which emerged and is related to the fact that SOEs do not strategically inform, either by way of organisational strategy and/or needs analysis, their applications to TETA when making application for funding. This was only cited by TETA, and therefore has a weighting allocation of 100%.

The penultimate emerging and recurring concept within this dimension relates to the fact that TETA lacks a strategy specifically to meet the needs of the SOEs within the context of the project management value chain. Five (100%) of the SOEs and TETA management cited this concept, and therefore it is a conclusive finding.

Lastly, the strategic alignment of TETA systems with that of the systems within SOEs was a concept cited by one SOE and TETA management; i.e. 33% of all six participants. This relates specifically to TETA's management information systems (MIS) which affects the data uploads of all learners (whether funded or not) for reporting and certification purposes. Due to the high numbers of employees within the SOEs and related learners, the project administration of funded learners on projects is highly bureaucratic and tedious, as previously cited in the project administration section in 5.2.6.1. Alignment of the two respective systems would be beneficial to all parties within the project management value chain.

Table 5-18: Strategic alignment

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Organisational strategy not embraced by leadership	3	1	**Strategic Alignment**
Developmental needs to be defined then required projects could be better defined	1	1	
Alignment of needs in SSP in collaboration with TETA	1	1	
Lack of financial planning within SOEs	3	1	
Strategic alignment of SOE business strategies to skills development	5	1	
TETA SOE alignment of Skills Development strategies	3	1	
Misalignment of funding vs. training costs	3	0	
No engagement or alignment of stakeholder needs to DG Policy	1	0	
SOE cannot define the future trajectory of the organization	2	0	

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Union reps representing SOE support strategy at TETA Board level, conflicted at implementation	3	1	Strategic Alignment
SOEs project implementation not align with TETA funding window	0	1	
KPAs not aligned to the project management value chain internally at TETA	0	1	
No staff alignment to higher demand of projects	2	1	
Lack of strategic application of funding by SOE's	0	1	
TETA has no strategy for SOE's	5	1	
SOE and TETA systems need alignment to allow learner data uploads	1	1	

In summary, and as illustrated in the figure below, this dimension was an extensive one with a range of varying concepts emerging. The concepts can only be dealt with at a strategic level of the organisation, and are directly related to strategy and leadership in section 5.2.7.

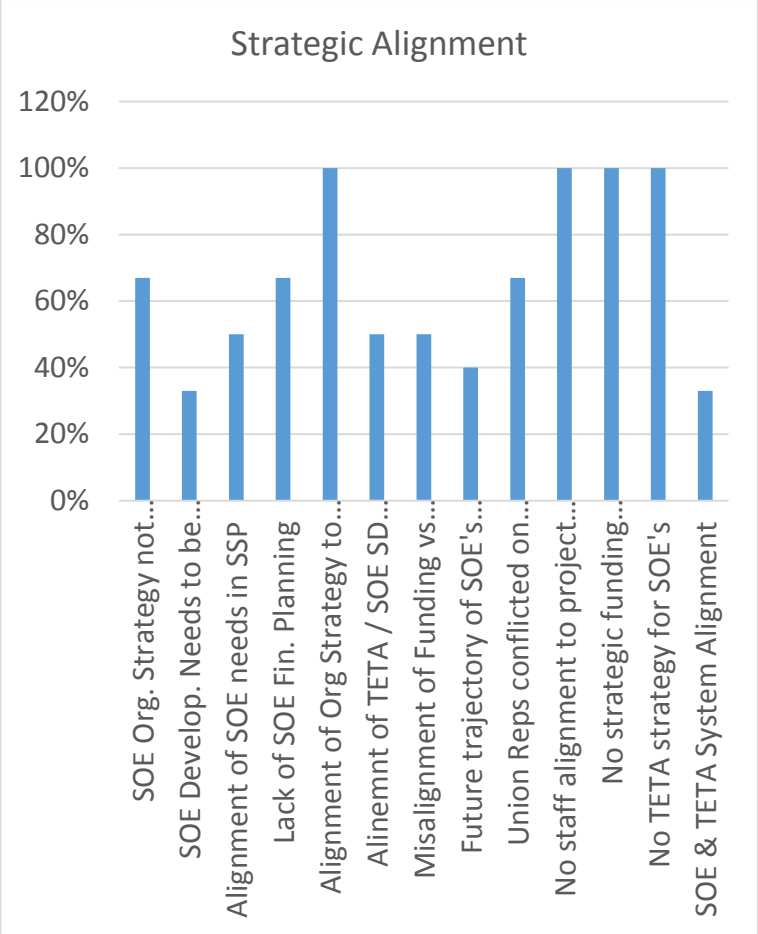

Figure 5-11: Weightings allocated to concepts emerging from the dimension of strategic alignment

5.3.7.5 Systems alignment

This particular dimension, systems alignment, only has one emerging concept, as shown in the following table. This concept refers to the TETA systems which are not integrated. Although this concept is not a recurring one, and was only cited by TETA management, it does have a significant impact on the entire project management value chain. This relates to the concepts previously discussed within project administration section 5.2.6.1, project management capacity section 5.2.6.4, leadership section 5.2.7.1, and strategic alignment section 5.2.7.4. The study found that the alignment of TETA's systems would have a significant positive impact on a varying number of concepts, and would assist in integrating the various components within the entire project management value chain and minimise the administrative burden and risks resulting from the various projects. The 100% weighting rule applies. This is a conclusive finding.

Further to this, the finding is supported by the literature reviewed relating to project management, in that PMBoK (2008) states that project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements.

Systems within TETA can therefore be considered as “the knowledge, skills, tools and techniques” and their alignment is critical in the management and implementation of projects.

Table 5-19: Systems alignment

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
TETA systems are not integrated	0	1	**Systems Alignment**

In summary, TETA is the funding partner within all projects being implemented within the transport sector, as well as the responsible participant within the context of this research study for reporting to DHET and accounting to the Auditor General regarding all projects managed and implemented. Therefore, TETA’s systems integration would support the accuracy, reliability, and validity of the associated data, as well as minimise the administrative burden and risk exposure; both in terms of performance and financial reporting of the data and associated funding of all the projects.

5.3.8 Training provision (Theme 8)

Training provision is the final of the eight themes identified during this research study, and focuses on a critical component within the project management value chain within the context of this research study. Four dimensions evolved from this theme as illustrated in the figure below. These dimensions will further be explained.

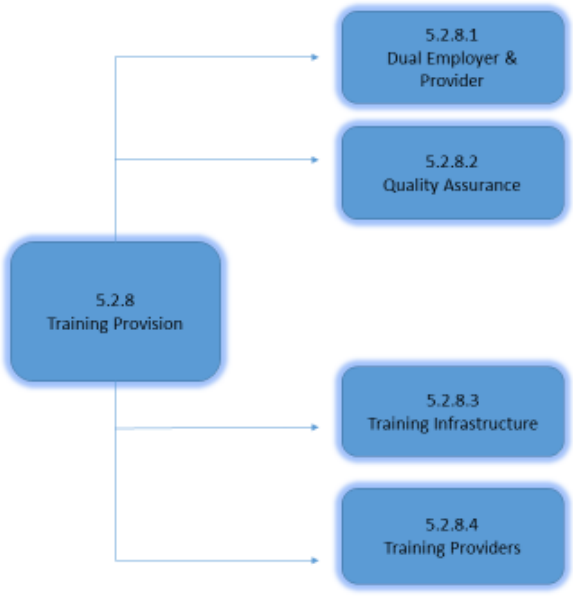

Figure 5-12: Training provision

5.3.8.1 Dual employer and provider

Within this dimension, only one concept emerged. As can be seen in the table below, this concept relates to certain SOEs being both an employer as well as an accredited training provider for certain industry-related technical programs. The study found that when the SOE has this dual role, it lessens the SOE's exposure to some of the legislative requirements, as emerged in a previous theme, legislative environment section 5.2.4, and does not negatively impact on the management and implementation of their respective projects.

Two (40%) of SOEs were found to have this dual role and raised this concept; i.e. 33% of all six participants. This concept can be a fairly conclusive finding.

Table 5-20: Dual employer and provider

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
SOE is both an employer and an accredited training provider	2	0	**Dual Employer & Provider**

5.3.8.2 Quality assurance

Quality assurance was the second dimension within this theme, and two concepts emerged as listed shown in the table below.

The first concept emerging during the interviews relates to the non-certification of learners or the delays experienced by SOEs in obtaining certification for their respective learners, either from TETA or the trade test centres. Two (40%) of SOEs cited this concept, as did TETA management; i.e. 50% of the six participants. This concept is a conclusive finding.

The second emerging concept was not a recurring one, and was only cited by TETA management. It relates to the unit within TETA responsible for the quality assurance of accredited training providers, and certification of learners as being isolated within the broader context of the project management value chain. The study found that the quality assurance system within TETA is isolated and not sufficiently integrated within the broader context of the project management value chain. In addition, the quality assurance processes were bureaucratic and administratively intensive due to duplication of processes between TETA and the training provider. This aspect also emerged in project administration section 5.2.6.3, and is related to systems alignment section 5.2.7.5. The study also found that this concept was in fact partly responsible for the previous concept above, relating to non-certification or delays in certification of learners. This concept was only cited by TETA management, and therefore the rule of 100% weighting applies and is considered a conclusive finding.

Table 5-21: Quality assurance

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Non certification of learners by Quality Assurance	2	1	**ETQA**
TETA Quality Assurance function isolated	0	1	

In summary, quality assurance has a significant role within the context of this research study, as TETA is the legislated authority to either facilitate the issuance or issue certificates to successful learners on the completion of their training programs. Further to this, the integration of quality assurance within the TETA systems would address the above concepts, and it is therefore that the researcher would recommend that this concept be considered a finding.

5.3.8.3 Training infrastructure

This is the third dimension and relates to the training infrastructure and equipment required by the SOEs and training providers to facilitate the provision of training within their respective organisations. Four concepts emerged from this dimension as listed in the table below, and which will be further explained.

The study found that SOEs were recruiting too many learners for which they did not have the required infrastructure and equipment to implement the project. The infrastructure and equipment relates to the technical equipment required to conduct the practical component of the training program. Three (60%) SOEs and TETA management cited this concept; i.e. 67% of all six participants. This concept is a conclusive finding.

The revitalisation of skills required in order to meet the demands of the industry is the second concept which emerged during the interviews. This concept relates to the fact that SOEs indicated that the current training programs and qualifications available to industry are outdated and not meeting the industry's requirements. The study found that that there have been significant technological and legislative changes within various occupations within industry that required an urgent intervention in partnership with TETA. Two (40%) SOEs cited this concept; i.e. 33% of all six participants. This concept is a fairly conclusive finding.

This particular concept is related to the previous two concepts, in that SOEs require upgraded and new infrastructure equipment for their technical training programs, and certainly not more learners. The study found that the current equipment is very outdated and does not meet the technological advancements required by industry. Two (40%) SOEs cited this concept and TETA management; i.e. 33% of all six participants. This concept is a fairly conclusive finding.

The final concept within this dimension refers to insufficient occupational qualifications being developed and registered by TETA and training providers on the National Qualifications Framework (NQF) to support implementation of the required training. The study found that there are a number of occupations for which there are no qualifications on the NQF related to the transport sector, and which impact the SOE's ability to implement the required training programs within their organisations. Two (40%) SOEs cited this concept and TETA management; i.e. 33% of all six participants. This concept is a fairly conclusive finding.

Table 5-22: Training infrastructure

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
High numbers of learners are recruited without sufficient infrastructure and equipment	3	1	**Training Infrastructure**
Revitalisation of skills required to meet demands of the sector	2	0	
SOEs require infrastructure for training, not more learners	2	1	
Insufficient occupational qualifications developed to support projects	2	1	

In summary, the concepts emerging from this dimension indicate that the successful implementation of skills development projects requires the latest models of equipment to support the changes in technologies and systems within the industries, as well as updated and relevant occupational qualifications so that learners are taught the appropriate skills to perform their jobs.

5.3.8.4 Training providers

The final dimension below relates to the training providers appointed for the provision of training within various skills development projects. The study found that SOEs would prefer TETA to propose or vet potential training providers so as to assist the SOEs with the procurement of their services, and which could prevent delays in the commencement of projects, even though the providers are accredited.

This was the only emerging concept, and it was cited by one (20%) SOE; i.e. 17% of all six participants. This concept is therefore not a finding.

Table 5-23: Training providers

Concept	Frequency of SOE Interviews	Frequency of TETA Interviews	Category
Vetted providers required to assist with implementation	1	0	**Training Providers**

5.4. Summary of findings

During the process of data analysis, and the subsequent identification of the multitude of concepts, which led to the categorisation of all these concepts into the eight themes emanating from the research study, the researcher was further able to group the eight themes into five core clusters. The researcher concluded that the eight themes are interrelated within the system of the project management value chain within the context of this research study.

The categorisation of the eight themes into the five core clusters is illustrated in the table below. The researcher will further provide a summary of the findings within the five core clusters.

Table 5-24: Summary of themes identified

Themes which relate to the management within projects	Themes which relate to the project environment	Themes which relate to the leadership and strategies of projects	Themes which relate to training provision within projects	Themes related to the learners within projects
Contract Management	Economic Environment	Politics	Training Provision	The learner
Project Management	Legislative Environment	Strategy and Leadership		

5.4.1 Findings related to the management of projects

The findings within the management of projects pertain to the actual management of the overall projects, as well as the management of the associated funding contracts; both of which are interrelated. The study found that there are a multitude of variables (including those found within the six core themes) which impact on the project manager's ability to manage and implement their respective projects. The study found that observing the project management value chain through the lens of systems thinking, the various components within the system were disengaged and not

interrelated. This resulted in the multitude of findings within the various themes, and therefore the management of projects cannot be viewed in isolation within the context of the research study.

Project management is impacted by the capacity of management, both within the SOEs and TETA. Within the SOEs it was found that they do not have project management skills or an understanding of the project environment; and within TETA, it was more related to the lack of industry expertise within the sub-sector they serve, as well as project management skills. The available resources internally within SOEs, or rather the lack thereof, as well as the lack of overall organisational strategic alignment with the skills development within the SOEs, and the lack of leadership understanding their organisational strategy, directly impacts the overall management of projects. A significant finding was also that there was a lack of leadership support for the project managers within the respective SOEs.

From a TETA perspective, it was found that leadership and management within TETA were not conversant with the challenges being experienced by the SOEs across a number of findings within the various core themes, and this affected their ability to align TETA implementation strategies to the needs of the SOEs.

Regarding the management of the associated contracts and their respective requirements, the study found they were not conducive to the management of the projects; they were viewed as too prescriptive and restrictive. The contracts also do not take into account the legislative environment within which the SOEs implement their projects.

The findings related to the project environment will be summarised next.

5.4.2 Findings related to the project environment

The findings related to the project environment was found to be focused in two spheres; namely the legislative and economic environment of the projects. The study found that the legislative environment was a very complex and rigid one, in that SOEs had the skills development, the supply chain management framework within the PFMA, as well as the industry specific legislation to contend with, when implementing and managing their respective projects. From TETA's perspective, the same legislation applied, but with a slight variance in the skills development sphere relating to the SETA funding regulations, which ultimately are in conflict with the PFMA in respect of the different financial years of the SOEs and TETA.

It was also very apparent that the various pieces of legislation impacted the entire project management value chain, and that the various pieces of legislation seemed to be in conflict with each other; specifically within the financial component of the project management value chain, thereby creating some serious challenges for the respective project managers related to the various funding streams, and more so the procurement of training providers.

In fact, one of the critical findings to emerge was on the rigid procurement processes, within the supply chain management framework of the PFMA, which SOEs had to adhere to when procuring their training providers. This piece of legislation directly impacts the commencement of projects and was found to be the main cause of delays being experienced by SOEs when trying to commence their projects.

The economic environment within the context of the research study was found to impact the retention and employment of resultant unemployed learners from projects due to internal labour issues within SOEs and budgetary constraints, as well as having a direct impact on the project costs due to the poor economic conditions prevailing in South Africa's economy.

The findings regarding the leadership and strategies within the project management value chain will be summarised next.

5.4.3 Findings related to the leadership and strategies

The findings within this core theme, leadership and strategy, were found to be interrelated and impacted the entire project management value chain. The study found that a complete lack of skills development strategies aligned with organisational strategies within SOEs impacted the capacity and resources allocated to the project manager. This impacts the SOE's ability to manage and implement their respective projects. What became apparent was that SOEs do not conduct a thorough needs analysis of the skills required within their respective organisations, and this directly impacts the funding applications being submitted to TETA.

Simultaneously, it was found that within TETA, there was no specific strategy in place to address the needs and requirements of SOEs, which also contributes to the challenges being experienced by the SOEs and TETA within the context of this research study due to the lack of formal partnerships.

In conclusion to this particular theme, the political influence within the decision-making spheres within both organisations, and within the context of this research study, was found to be quite prominent. It resulted in projects being awarded to SOEs even though their performance on previous projects, and capacity to implement and manage projects, did not warrant the award of further projects according to internal TETA criteria, and this has a direct impact on the inability of TETA to disburse the associated project funding.

The findings regarding the provision of training will be summarised next.

5.4.4 Findings related to the provision of training

The findings in respect of training provision within the project management value chain were focused on the quality assurance aspect of the training providers and the resultant certification or non-certification of learners which contributed towards the delays being experienced by project

managers in completing their projects. The study also found that even though the training providers had the required SETA accreditation, the SOEs would still want the providers to be vetted by TETA in respect of their actual past performance on previous projects. Certain SOEs were found to have a dual role as employers and training providers, and which in fact was found to have a positive impact on the projects, as it reduced the exposure of the SOEs to financial-related legislation.

The other aspects found were related to the actual training infrastructure within SOEs and training providers, which includes the industry specific equipment and tools required to meet the practical training requirements. These were outdated and old. The equipment was not updated and not related to the technological advancements of the industry. This resulted in learners receiving training which was outdated and irrelevant to the industry, and hence had an impact on the duration and completion of the respective projects, as in certain aspects learners took longer to qualify and complete their training programs as alternative sources of infrastructure had to be found to accommodate the learners.

The final core theme relating to the learners within projects will be summarised next.

5.4.5 Findings related to the learner

The final core theme relates to the actual learners within the projects being implemented by SOEs, which is also related to, and impacted by, various other core themes identified within this research study, as explained in the detailed findings. The pre-entry requirements of the industry-related training programs was found to be challenging to the learners, as those requirements were high due to the legislative and high technical skills requirements of the industry.

One major aspect was related to the value of the learner stipends being paid to the learners by the SOEs during the training program, and in certain instances the delays in these payments due to ineffective project management. It was found that the stipends were also not sufficient to cover the costs related to the learner's transport and in some instances their accommodation. Even though the stipends are being funded by TETA as part of the project funding awarded to SOEs, the SOEs were unable to top up the stipend paid due to budgetary constraints and other economic factors.

Lastly, the learners are also impacted by the fact that SOEs were not employing them on completion of their training, as well as the fact that SOEs have reduced the number of learner intake per annum due to economic and political influences.

5.5. Conclusion

The research found that the majority of the findings across the project management value chain, as observed through the lens of systems thinking, confirms that the project management value as a system and its components are not integrated, but very much related to one another.

The ineffectiveness of one component within the project management value chain has an impact on the whole project as a "whole system".

Chapter 5 reported on all the findings of this particular research study, and the resulting eight themes, which eventually resulted in the five core clusters, as illustrated in the table above. The researcher will explain the conclusions drawn from these findings in Chapter 6.

CHAPTER 6. CONCLUSION

6.1. Introduction

Chapter 5 reported on the findings that emerged from the data collected and analysed, whilst Chapter 6 addresses the researcher's interpretation and conclusions emanating from the research study.

As outlined and explained in Chapter 1, section 1.9, the researcher undertook this research study within the context of a mode 2 learning environment, which requires the researcher to demonstrate the application of the knowledge which emanated from this study. The practical implications for the respective organisations within the project management value chain, which emerged from the findings within this study, will be addressed within this chapter.

Furthermore, the systems thinking approach was applied as the theoretical framework for this research study. It is within the context of the systems thinking framework that all components within a system are interrelated, so the researcher viewed the project management value chain of the skills development projects within SOEs. As previously defined in the literature review in Chapter 2, a system is viewed as an entity, which is a coherent whole, such that the boundary is perceived around it in order to distinguish its external and internal elements and to identify the input and output relating to and emerging from the entity (Ng *et al*., 2009). The analysis of the emerging data was performed by applying the grounded theory method of coding in order to address the researcher's bias as outlined in Chapter 3, section 3.8.

The conclusions and recommendations from this research study are presented in detail within this chapter, which begins with the project environment.

6.2. The project environment

Within a systems context, the environment within which the project management value chain operates, influences the operational, transactional, and contextual environment of all projects within the value chain. The participating organisations within the context of this research study, namely TETA and the various SOEs, can be regarded as an "open system". As addressed in the literature review in Chapter 2, an open system can be defined as an organisation that is the sum of interdependent flows and activities, linking shifting coalitions of participants embedded in wider material-resources and institutional environments (Scott & Davis, 2007). Aspects that are critically important to open systems include the boundaries and the external environment. Healthy, open systems continuously exchange feedback with their environments, analyse that feedback, adjust internal systems as needed to achieve the system's goals, and then transmit necessary information back out to the environment.

The study concluded from the findings in section 5.2.2 and section 5.2.4 that the environment within which the project management value chain operates is influenced and impacted by two distinct environmental factors, which will be discussed next.

6.2.1 Economic environment

The poor economic environment within South Africa currently (and as previously discussed in Chapter 1), does not bode well for the skills development projects being funded by TETA which are implemented by the various SOEs. In particular, the cost implications of the placement of learners for the duration of their training within SOEs, as well as the permanent placement of learners upon completion of training whilst there are pending retrenchments of permanent employees, is an economic factor which is significantly real. This in turn affects the labour unions that have a very specific focus on their members, i.e. employees within the various SOEs, and they have significant influence within the organization, particularly when it involves the recruitment of learners. Therefore, it can be concluded that the poor economic environment within South Africa has a direct impact on costs and placement of learners, and this directly impacts the project management value chain.

Furthermore, the Public Finance Management Act of 1999 (Treasury, 1999) as discussed in Chapter 2 (Literature Review), predominantly sets the environment for the management of projects, with particular emphasis on the supply chain management framework within the PFMA which regulates the tender process for the procurement of services from training providers, and which also impacts the duration of projects, as well as the cost of the projects. Whilst the study recognises that the above factors are macro factors which cannot be changed or influenced by the respective organisations, the study concluded that the legislation as discussed above has a direct economic impact on the projects being implemented, and therefore it is proposed that the respective organisations develop strategies with related frameworks within which to manage the environmental challenges encountered within this study in a more structured manner.

6.2.2 Legislative environment

As with the economic environment, the study concluded that the various skills development legislation, the Public Finance Management Act of 1999 (Treasury, 1999), and the various training legislative requirements specific to sub-sectors within transport also impact the environment within which the project management value chain operates. These various pieces of legislation were discussed in detail during the literature review in Chapter 2, sections 2.2 and 2.3 respectively.

The study concluded that the different financial years of the SOEs and TETA has an impact on the timing and commencement of projects being implemented within SOEs, and contributes to the delays being experienced in the disbursement of associated funds by TETA to SOEs.

Similarly, the supply chain management framework, as stipulated in the PFMA and as previously mentioned within section 6.2.1, directly impacts the implementation of projects, delaying the

commencement of the projects as the tender process contained within the legislation is a bureaucratic process. The study also concluded that the legislative requirements for the industry also impacts the costs associated with training, as specific standards need to be adhered to by the training providers and the SOEs within the respective sub-sectors of transport.

The study therefore also recognises that the legislative environment, very similar to the economic environment, cannot be changed or influenced by the organisations within the project management value chain. It is also therefore that the researcher proposes that the appropriate strategies be developed by the organisations with a related framework to allow for structured approach to the implementation of the projects within SOEs.

The conclusions pertaining to the project environment are illustrated below.

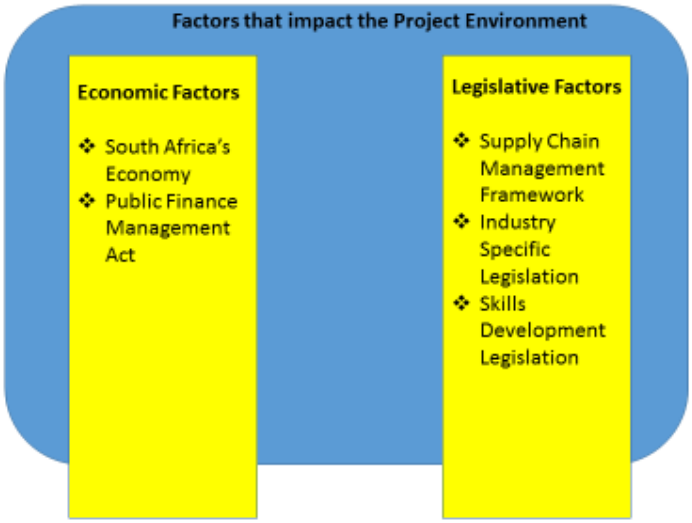

Figure 6-1: Factors impacting the project environment

6.2.3 Implications

The conclusions in this section have the following implications for both TETA and the SOEs:

- The SOEs are recruiting less learners onto projects, and of those learners, none are employed at completion of their training.
- The PFMA creates a certain level of bureaucracy within the organisations and delays the commencement and duration of projects within SOEs, and the related implication is the slow disbursement of funding from TETA to SOEs. Similarly, the supply chain framework within the PFMA creates serious delays in the procurement of training providers.
- Industry-specific legislation has a direct impact on the cost of the training, which currently is not catered for in the funding model for the skills development projects.

- The skills development legislation (inclusive of the SETA financial year) currently is not in synch with the financial year of SOEs, and thus impacts the commencement of projects causing delays, which in turn impacts TETA's ability to disburse the associated funding.

6.2.4 Recommendations

The following are recommendations to mitigate the implications of the conclusions within this section:

- SOEs to develop a strategy and a structured framework for the recruitment of their learners within their respective projects, which is efficiently budgeted for.
- TETA to develop a strategy specific to the needs of the SOEs pertaining to the timeframes of the different financial years of the organisations, so that the commencement of projects and the disbursement of associated funding from TETA is not compromised but managed effectively within a structured framework.
- TETA to consider including the procurement of training providers on behalf of the SOEs within their implementation framework for SOEs. This will minimise the bureaucratic process and time spent within SOEs, and allow TETA to manage the procurement of the appropriate training providers. This will minimise the time taken to appoint the training providers and the commencement of training.
- TETA to take cognisance of the industry-specific training requirements and legislative requirements when developing the implementation framework.

In conclusion to this section, and as discussed during the literature review in section 2.4.1 in Chapter 2, project planning is critical to the success of any project, and the procurement planning is one such factor during the planning phase that contributes to the success (PMBoK, 2008).

The organisational strategies and leadership within the project management value chain will be discussed next.

6.3. The organisational strategies and leadership

The researcher concluded that the strategic ability and intent of the respective organisational leadership in supporting the entire project management value chain is of critical importance. It has a direct impact on the entire value chain, from commencement of projects to their completion. Related to this conclusion is that the political influences on the leadership and the strategies of the respective organisations have an impact on the current challenges being experienced by SOEs and TETA respectively.

The two factors will be further discussed next.

6.3.1 Politics

The researcher concluded that even though the performance of the SOEs has been systematically and continuously poor in their ability to manage and implement the projects awarded to them by TETA, they still continuously receive funding for their projects from TETA. The discretionary grant criteria for the awarding of funding to stakeholders is seemingly disregarded, as the past performance of projects is a fundamental criterion which is applied throughout the awarding process. Undue political influence on the awarding process results in the SOEs receiving funding irrespective of their performance, and the implication is that TETA is not able to disburse the associated funding, as projects are not being implemented and managed effectively by the SOEs.

6.3.2 Strategy and leadership

In respect of the organisational strategies, and the organisational leadership within the context of the project management value chain, the study concluded that there was no strategic alignment of the SOEs to the skills development needs of their respective organisations, as well as no alignment with TETA strategies and the skills development legislation and frameworks provided. In fact, a significant conclusion the study found was that the SOEs do not conduct an effective and thorough needs analysis of the skills required within their organisations; nor do they have a skills development strategy in place which is aligned with the overall business strategy. These aspects are directly related to section 2.4.1, project planning and section 6.2 project environment.

The leadership within SOEs is not conversant with the overall operational challenges within their organisations, nor their operational needs. Similarly, TETA leadership do not engage their stakeholders effectively. This has a direct impact on the organisation's ability to implement and/or manage their skills development projects. The literature reviewed in section 2.4.5 in Chapter 2 supports the fact that leadership is considered to be a critical aspect of project-based organising (Keegan & Den Hartog, 2004). Kaulio (2008) also further states that the work of project leaders is a combination of managerial roles and leadership roles.

The study also concluded that the leadership and strategies within TETA are not aligned with the needs and the challenges of the SOEs. TETA does not have a specific strategy in place that addresses the needs of the SOEs.

The factors pertaining to the organisational strategy and leadership within the project management value chain are illustrated in the figure below.

Figure 6-2: Factors that impact the projects from organisational strategy & leadership

6.3.3 Implications

The conclusions within this section will have the following implications for the respective organisations:

- The continuous awarding of project funding to SOEs by TETA will impact TETA's ability to disburse the associated project funding as the projects become compounded over a number of financial years.
- The continuous political influence during the awarding of the project funding will have the above effect.
- The lack of strategic alignment and systems alignment does not allow the project management value chain to operate as an integrated system, which currently has an overall negative effect on the organisations to effectively manage and implement their projects.
- The current lack of a needs analysis being conducted within the SOEs has a direct impact on their ability to apply for the appropriate numbers of learners and associated funding.

6.3.4 Recommendations

- Organisational leadership to ensure and support an environment and supporting strategies conducive to supporting project implementation and management within their respective organisations.
- TETA to manage the political influences by implementing the respective criterion within the Discretionary Grant Policy during the award of the discretionary grant award process and address the conflict of interest of SOEs within the respective TETA board committees.
- TETA to engage the SOEs and align skills development strategies and systems within a project implementation framework.

- SOEs to be supported by TETA in effectively conducting a needs analysis of their organisational skills requirements.

The conclusions related to the management of skills development projects will be addressed next.

6.4. The management of skills development projects

The study concluded that there are two main components which impact the entire management of the project management value chain; namely, contract management of the associated discretionary grant funding contracts, and the actual project management of the project implementation within the SOEs.

As the study was conducted using the systems thinking approach as the theoretical framework, the conclusions within this section were derived through this lens, and hence the components within the project management value chain were found to be disengaged.

The two main components are discussed below in more detail.

6.4.1 Project Management

The researcher concluded that the management of projects cannot be viewed in isolation, as there are various components which impact the project management value chain as a system and these should be interrelated; namely, the project environment as per section 6.2, the organisational strategies and leadership as in section 6.3, the learners as in section 6.6, and the training provision as in section 6.5. The literature review within Chapter 2 supports the view as stated by Pinto and Pinto (1991) that there is a need during the project implementation phase for cross-functional cooperation, as this stems from the complex interdependencies which exist within organisations.

It was also concluded that the management of projects is also impacted by the available resources, capacity, and industry expertise of the various project managers within SOEs and TETA.

6.4.2 Contract management

Contract management is directly integral to the overall management of the project, and the study concluded that the current discretionary grant funding contracts were too prescriptive and were not sensitive to the legislative environment of the SOEs, as discussed in section 6.2. Contract management, as a component of the project management value chain, cannot be viewed in isolation.

The factors impacting on the management of skills development projects are illustrated in the figure below:

Figure 6-3: Factors that impact the management of skills development projects

6.4.3 Implications

The implications on the organisations of the conclusions within this section are as follows:

- The lack of strategic alignment and incorporation of strategies to provide an environment for the successful implementation and management of projects has contributed to the ineffective management of projects and the delays in the disbursement of the associated project funding by TETA.
- The lack of capacity and industry expertise within TETA and SOEs has impacted the ability of the project managers to have strategic oversight of their projects and to provide the necessary guidance to industry.
- The lack of appropriate resources within the SOEs impacts their ability to manage and implement their projects, which directly impacts the disbursement of the associated funding by TETA.

6.4.4 Recommendations

In order to mitigate the implications as stipulated above, the following proposals are recommended:

- Both the SOEs and TETA leadership to incorporate factors and legislative influences within their environments into their respective organisational strategies for skills development to support the creation of a conducive environment for the implementation and management of projects.

- Leadership within the respective organisations to develop and align their respective skills development strategies, as previously mentioned in section 6.3.2., including the learners as in section 6.6, and the training provision in section 6.5.
- The appropriate resources in respect of capacity, and industry expertise to be made available in both the SOEs and TETA respectively.
- Discretionary grant funding contracts to be revised to accommodate the legislative environment of the SOEs within the requirements of the DHET Validation Framework and the National Skills Development Strategies.

In this section it can be concluded that the above factors are interrelated, which affects the entire project management value chain as a system. This is supported by the literature reviewed in Chapter 2, section 2.5. The systems thinking approach applied as the theoretical framework to this study allowed the researcher to capture the complex relationships between the components of the project management value chain. Logic models, such as the general project management approach as stipulated by PMBoK (2008), focuses on the linear relationships between the components within the value chain, and therefore misses the actual complexities found within the system (Dyehouse *et al*., 2009).

6.5. Training provision within projects

Training provision comprises two components; namely the actual training provider, and the training infrastructure within both the SOEs. The researcher concluded that even though the training providers had the required ETQA accreditation, their actual performance within the projects being implemented was poor within the context of the funding contract and they were unable to deliver on the project requirements. Similarly, it was also concluded that the training infrastructure within both the SOEs and the training providers was outdated and not related to the technological advancements made within the sub-sector industries.

The factors impacting the training provision in projects are illustrated in the figure below.

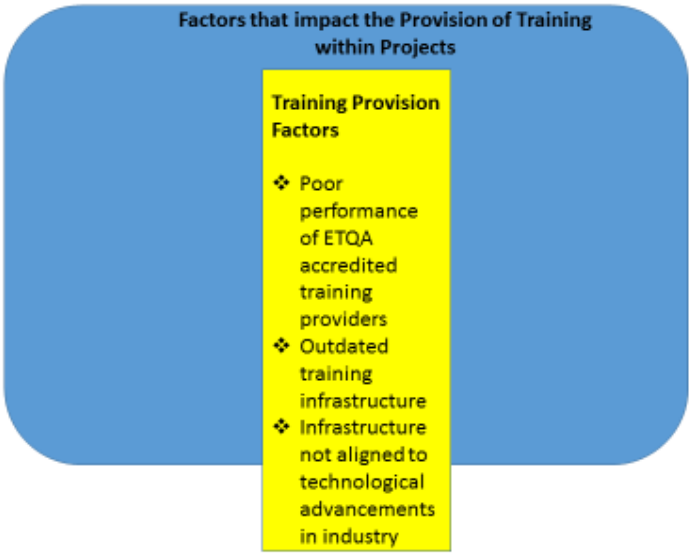

Figure 6-4: Factors that impact the provision of training within projects

6.5.1 Implications

The conclusions within this section will have the following implications for the project management value chain:

- Training providers will continue with non-delivery as their performance is not measured and reported to ETQAs, which results in them continuously being appointed by SOEs to deliver on projects even though their performance is poor.
- The appointment of training providers is done without the required infrastructure being in place, and this impacts the quality of the training provision and the learners' ability to learn and train on equipment which is related to their training program.
- The learners, upon completion of training, are not able to apply their learning on the advanced technological equipment within the workplace, and this delays their ability to qualify.

The above implications directly impact on the project management value chain, and the ability of the project manager to successfully complete the projects without any delays.

6.5.2 Recommendations

The following are the recommendations proposed to mitigate the implications of the conclusions within this section.

- The ETQA to review the accreditation criteria for training providers to include measurement of performance within skills development projects awarded by TETA within the context of this research study.

- The infrastructure required for implementing the training within the project management value chain should also be a criterion for accreditation of training providers and SOEs for the delivery of the appropriate training.
- Training providers and SOEs to find alternative infrastructure by developing partnerships within the industry.

6.6. The learner

The learner, within the skills development projects implemented by SOEs and as illustrated below, is the only component within this section. The study concluded that the economic environment currently in South Africa, as discussed in section 6.2.1, directly impacts the ability of SOEs to recruit higher number of learners, as well as the high industry pre-entry requirements demanded by the sub sector, as indicated in section 6.2.2, is a barrier to recruitment of learners. The researcher, however, recognises that the economic macro environment of the project management value chain, and the legislative pre entry requirements of industry, cannot be changed or influenced by the respective organisations.

It was also concluded in the study that SOEs do not provide sufficient support to the learners during the training programs within the workplace; namely mentoring and coaching, as well as providing insufficient stipends to the learners.

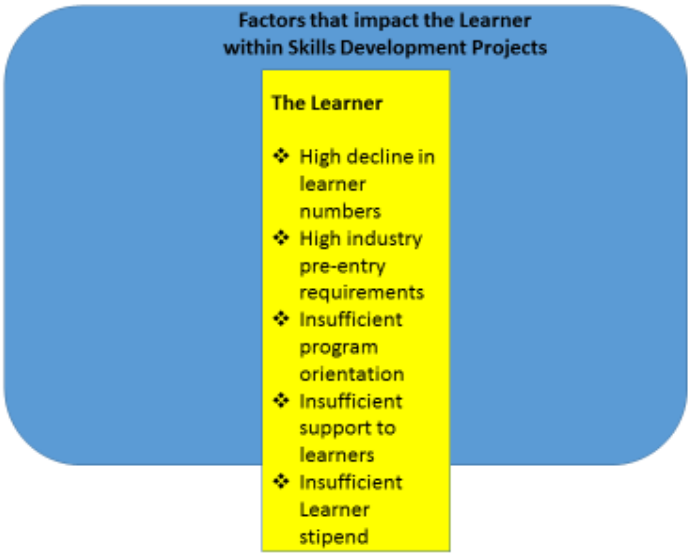

Figure 6-5: Factors that impact the learner within skills development projects

6.6.1 Implications

The impact of the conclusions reached within this section for the organisations, both SOEs and TETA, are as follows:

- The decline in the number of learners within projects impacts the SOE's ability to address the skills shortages within their organisations, and TETA's ability to meet their targets within their strategic plan and performance plan respectively. This is contrary to the literature review in chapter 2 section 2.3, where Chavez and Torres (2014) state that SOEs are seen as significant contributors to job creation and employment due to the amount of work they undertake on behalf of the state.
- The high pre-entry requirements within the sub-sectors are influenced, and legislatively required, by the various industry specific pieces of legislation, which in most cases are found to be internationally regulated. Industry (inclusive of SOEs) cannot compromise on these pre-entry requirements and standards; the project management value chain must abide by these legislative requirements, and therefore the learners entering into the training programs need to meet those requirements.
- No support given to learners within the workplace, including the payment of insufficient stipends, leads to a high dropout rate of learners within the system. The implication to the project management value chain is that projects are not completed, funding is not disbursed efficiently, and this ultimately leads to fruitless and wasteful expenditure and TETA does not meet its strategic objectives.

6.6.2 Recommendations

Below are the recommendations to mitigate the impact of these conclusions:

- TETA to revise the targets and objectives within their strategic plan and their annual performance plan, and align their targets to the thorough needs analysis which should be conducted by SOEs. This is also related to the lack of a needs analysis being conducted within SOEs in section 6.3.3.
- The recruitment of learners within SOEs must be conducted within a structured framework aligned with the industry requirements to ensure that the correct level of learner is identified for the project being implemented;
- A structured framework should be developed to guide the support to learners within their organisations.
- TETA to revisit the stipend funding model to support the learners more efficiently.

6.6.3 Conclusion

In conclusion to this section, as a summary, the figure below is an illustration of the conclusions reached within this research study, and within the context of a system as the theoretical framework applied.

All conclusions reached within this study were found to be interrelated, and have significant complex relationships, and these have an impact on the entire project management value chain. This can be substantiated by the literature reviewed in section 2.5 which discounts the linear models which are

based on linear relationships, and which completely miss the actual complexities that exist within and between components within a system (Dyehouse et al., 2009).

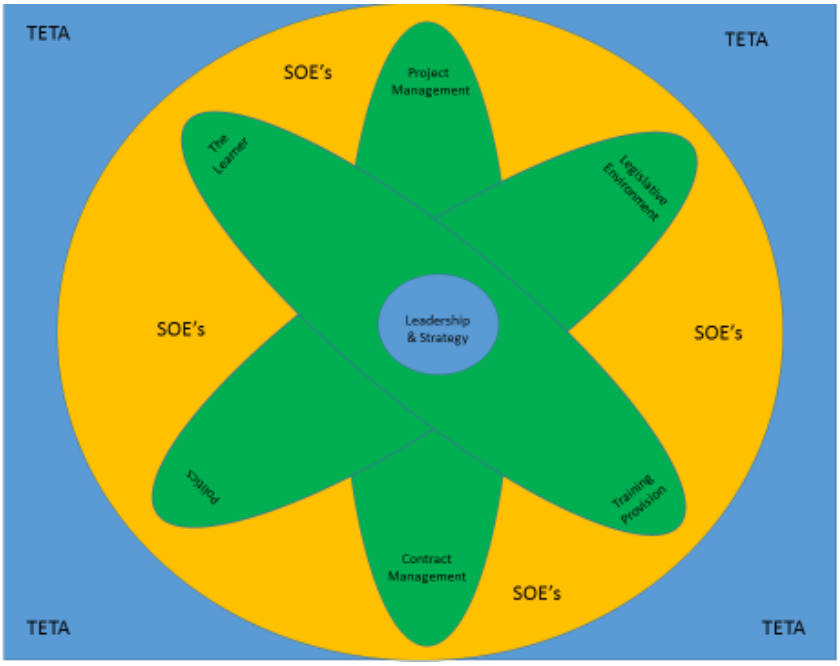

Figure 6-6: Summary of conclusions reached and their relationship

Similarly, the causal loop previously discussed in the literature review, Chapter 2 section 2.5, which illustrated the "current state" of the project management value chain and its effect on the disbursement rate of the associated funding, can be reconfigured to illustrate the "ideal state" of the causal loop, based on the conclusions and recommendations made within this research study.

The figure below illustrates the "ideal state" of the project management value chain that is required to achieve a more efficient approach of disbursing the project funding within the project management value chain.

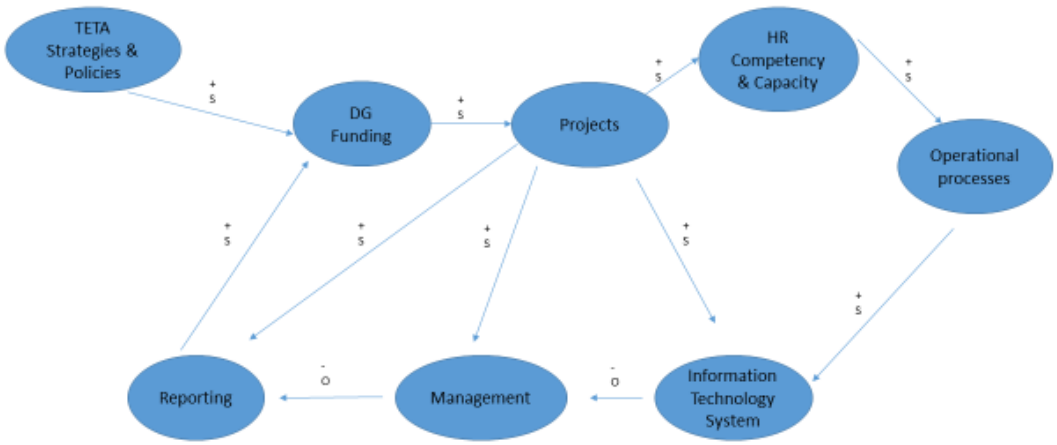

Figure 6-7: The Causal Loop diagram for the "ideal state"

6.7. Summary of the recommendations

The table below is a summary of the recommendations made within the various sections within this chapter for each respective organisation, and which are linked to the objectives of the research study:

Table 6-1: Summary of recommendations (linked to objectives of the study) for the respective organisations within the project management value chain

Recommendations for TETA	Recommendations for SOEs
❖ TETA to develop a strategy specific to the needs of the SOE's pertaining to the timeframes of the different financial years of the organizations, so that the commencement of projects and the disbursement of associated funding from TETA is not compromised, but managed effectively within a structured framework; ✓ **Objective 1** ✓ **Objective 4** ✓ **Objective 5**	❖ SOEs to develop a strategy and a structured framework for the recruitment of their learners within their respective projects, and which is efficiently budgeted for; ✓ **Objective 1** ✓ **Objective 5**
❖ TETA to consider including the procurement of training providers on behalf of the SOE's within their implementation framework for SOEs ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3** ✓ **Objective 4**	❖ Organisational leadership to ensure and support an environment and supporting strategies conducive to supporting project implementation and management within their respective organisations ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 5**
❖ TETA to take cognisance of the industry specific training requirements and legislative requirements when developing the implementation framework. ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4** ✓ **Objective 5**	❖ SOE's to be supported by TETA in effectively conducting a needs analysis of their organizational skills requirements ✓ **Objective 1** ✓ **Objective 2**
❖ Organisational leadership to ensure and support an environment and	❖ Both the SOEs and TETA leadership to incorporate factors and legislative

Recommendations for TETA	Recommendations for SOEs
supporting strategies conducive to supporting project implementation and management within their respective organisations; ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4**	influences within their environments into their respective organisational strategies for skills development to support the creation of a conducive environment for the implementation and management of projects; ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3** ✓ **Objective 4**
❖ TETA to manage the political influences by implementing the respective criterion within the Discretionary Grant Policy during the award of the discretionary grant award process and address the conflict of interest of SOE's within the respective TETA Board committees ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3**	❖ Leadership within the respective organizations develop and align their respective skills development strategies as previously mentioned in section 6.3.2. (Including the learners as in section 6.6, and the training provision in section 6.5) ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4**
❖ TETA to engage the SOEs and align skills development strategies and systems within a project implementation framework ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4**	❖ The appropriate resources in respect of capacity, and industry expertise be made available in both the SOEs and TETA respectively; ✓ **Objective 1** ✓ **Objective 2**
❖ Both the SOE's and TETA leadership to incorporate factors and legislative influences within their environments into their respective organizational strategies for skills development to support the creation of a conducive environment for the implementation and management of projects ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4** ✓ **Objective 5**	❖ Training Providers and SOEs to find alternative infrastructure by developing partnerships within the industry; ✓ **Objective 1** ✓ **Objective 2**

Recommendations for TETA	Recommendations for SOEs
❖ Leadership within the respective organizations develop and align their respective skills development strategies as previously mentioned in section 6.3.2. (Including the learners as in section 6.6, and the training provision in section 6.5) ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4**	❖ The recruitment of learners within SOE's must be conducted within a structured framework aligned to the industry requirements, to ensure that the correct level of learner is identified for the project being implemented ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 5**
❖ The appropriate resources in respect of capacity, and industry expertise be made available in both the SOE's and TETA respectively; ✓ **Objective 1** ✓ **Objective 2**	
❖ Discretionary grant funding contracts to be revised to accommodate the legislative environment of the SOEs within the requirements of the DHET Validation Framework and the National Skills Development Strategies; ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3** ✓ **Objective 4**	❖ A structured framework to be developed, to enforce and guide the support to learners within their organisations ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 4** ✓ **Objective 5**
❖ The ETQA to review the accreditation criteria for training providers to include measurement of performance within skills development projects awarded by TETA within the context of this research study ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3**	
❖ TETA to revise the targets and objectives within their strategic plan and their annual performance plan, and align their targets to the thorough needs analysis which	

Recommendations for TETA	Recommendations for SOEs
should be conducted by SOEs; this is also related to the lack of a needs analysis being conducted within SOEs in section 6.3.3 ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3** ✓ **Objective 4** ✓ **Objective 5**	
❖ TETA to revisit the stipend funding model to support the learners more efficiently; ✓ **Objective 1** ✓ **Objective 2** ✓ **Objective 3** ✓ **Objective 4**	

6.8. Proposed framework

Within this section, and based on the above recommendations emanating from this research study, the following figure illustrates the proposed framework for the implementation and management of skills development projects within SOEs by TETA:

Figure 6-8: TETA project management & implementation framework for SOEs

6.9. Achievement of the aim and objectives of the research study

Within this section, the aim and objectives of the research study, and as previously discussed in Chapter 3, have been summarised and were confirmed against the outcomes achieved within the recommendations made in the table above.

In summary, there seems to be a lack of understanding within management and the leadership of TETA as to why skills development projects being awarded by TETA to SOEs are not being implemented and managed effectively and efficiently; nor are they being successfully completed. This challenge has a negative impact on TETA's ability to disburse the associated project funding to SOEs. The aim of this research study was to determine what TETA could do to improve and support the implementation, management, and completion of skills development projects within SOEs.

The main objective of this research study was to identify and develop a project implementation and management framework for SOEs, within which TETA awards discretionary grants to SOEs.

The following objectives were identified in support of the above aim at the commencement of this study, as discussed in Chapter 3:

- To identify and understand the reasons why SOEs have challenges in implementing and completing skills development projects awarded to them by TETA.
- To determine the variables or factors within TETA that may contribute to, and affect, the implementation and completion of skills development projects within SOEs.
- Evaluate the effectiveness of current project management policies, procedures and methodology within TETA.
- To determine the impact of legislation, regulations and strategies on the actual implementation and completion of skills development projects.
- To develop a framework for TETA to ensure efficient and effective project implementation and management of skills development projects awarded to SOEs by TETA.

In line with the conclusions reached within this research study, and in line with the recommendations made as a result of the implications of the conclusions as summarised above in section 6.7, the researcher can confidently conclude, as indicated in section 6.7, that the aim and objectives of this research study have been met.

6.10. Limitations of the study

This research study did not have many limitations, except for the fact that the SOEs within this qualitative case study were limited to the transport sector, and which could possibly result in the proposed framework not being applicable to SOEs within other sectors of the economy. The second limitation to this study was the researcher's bias as an active participant in the TETA project management value chain. However, her bias was significantly managed and addressed by the application of the grounded theory method of coding as discussed extensively in Chapter 4.

6.11. Conclusion

As an active participant in the TETA project management value chain, the researcher experiences the challenges of managing the implementation of skills development projects on a continuous basis. The experiences learnt, and the systems thinking theoretical framework applied during this study, have assisted the researcher to view the entire project management value chain from a systems perspective. This has resulted in the researcher's ability to identify and understand the complexities within the interrelationships across the project management value chain within the respective organisations.

One of the critical factors within the framework developed during this study for the implementation and management of skills development projects is the leadership and strategic alignment of both the TETA and the SOEs. The reason for this is that these components ultimately guide and support the entire project management value chain. However, it remains the organisation's responsibility to create an environment which is conducive to the management and implementation of projects, and to ensure the implementation of the proposed framework.

Finally, the framework developed within this research study, and as illustrated in the figure above, seeks to provide the structure for the respective organisations to improve the efficiency and efficacy of the project management value chain, which ultimately would result in the efficient and effective disbursement of the associated project funding in support of skills development within the South African transport economy.

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